



**ҚазМұнайГаз**  
NATIONAL COMPANY ҰЛТТЫҚ КОМПАНИЯСЫ

ESG agenda:

# KEEPING UP WITH GLOBAL CHALLENGES

SUSTAINABILITY REPORT 2021

# CONTENTS

## THE CONCEPT OF THE REPORT

## FIBONACCI NUMBER

The Golden Ratio (this is how the Fibonacci number is sometimes called in art and mathematics) because of its ubiquitous use in nature is considered one of the most harmonizing laws of the universe, which orders the structure of the world around us and directs life towards development.

The aesthetics of this harmonization are perceived by man, who has always sought to improve the reality around him, as a stabilizing law of nature.

KMG Sustainability Reports are available electronically in the state, Russian and English languages at: [https://www.kmg.kz/eng/ustoichivoe\\_razvitie/reports/](https://www.kmg.kz/eng/ustoichivoe_razvitie/reports/)



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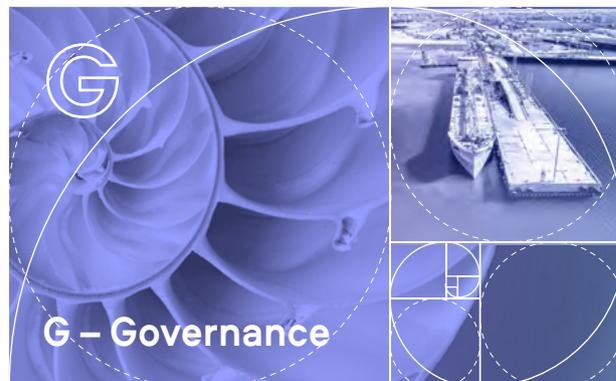


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# KEEPING UP WITH GLOBAL CHALLENGES



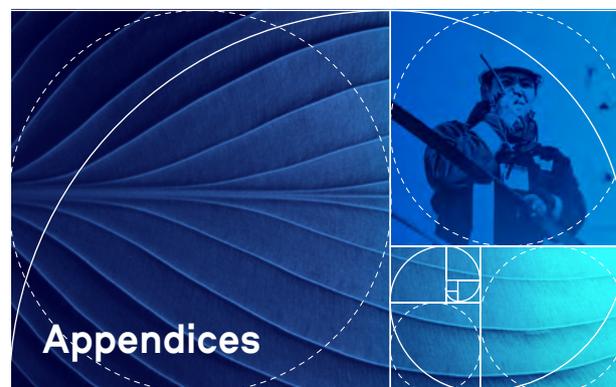
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# OIL AND GAS PRODUCTION

## KEY INDICATORS

102-1, 102-2, 102-7, 102-8, OG1



### PRMS RESERVES, CATEGORY 2P

Mtoe



### OIL AND CONDENSATE

thous. tonnes



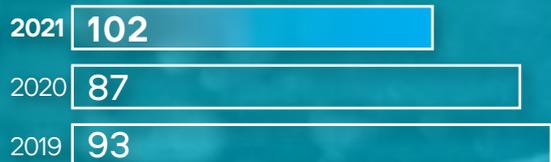
### NATURAL AND ASSOCIATED GAS

mln m<sup>3</sup>



### CO<sub>2</sub> EMISSION RATE

tonne per 1,000 tonnes of HCs





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## CASE STUDY

In 2021, the total increase in raw hydrocarbon reserves was 39.2 mln tonnes, mainly due to the fields of Ozenmunaygas JSC, KMG Kashagan B.V. and Karazhanbasmunay JSC. The increase in HCs reserves is mostly due to the additional exploration of Uzen deposit.

Seven major fields currently account for 73% of oil production at the Company's operating assets: Uzen and Karamandybas (Ozenmunaygas JSC), Kalamkas and Zhetybai (Mangistaumunaigas JSC), S. Nurzhanov and East Moldabek (Embamunaygas JSC), Karazhanbas (Karazhanbasmunay JSC)

# TRANSPORTATION

## KEY INDICATORS

102-1, 102-2, 102-7, 102-8, OG1



### OIL TRANSPORTATION

thous. tonnes    trunk pipelines



### GAS TRANSPORTATION

mln m<sup>3</sup>    trunk pipelines



\* For the period from January 1 to November 8, 2021

## CASPIAN REGION



### OIL TRANSPORTATION IN THE CASPIAN REGION

thous. tonnes



## BLACK AND MEDITERRANEAN SEAS



### SEA VOLUME OIL TRANSPORTATION

thous. tonnes





## CASE STUDY

KMTF transported 537,000 tonnes of oil in the Caspian Region in 2021 with its own tanker fleet, or 99% of the target (540,000 tonnes).

Oil transportation performance in the Black and Mediterranean Seas for 2021 was 9,318,000 tonnes, or 185% of the target (5,040,000 tonnes).

Of the total volume, 2,718,000 tonnes were transported by the own fleet and 6,600,000 tonnes by chartered vessels.

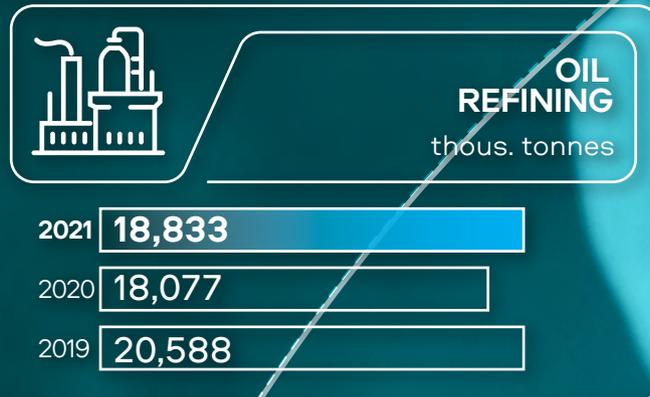
In open seas:

- oil transportation on the Black Sea – 3,546 thous. tonnes;
- oil transportation on the Mediterranean Sea – 5,772 thous. tonnes.

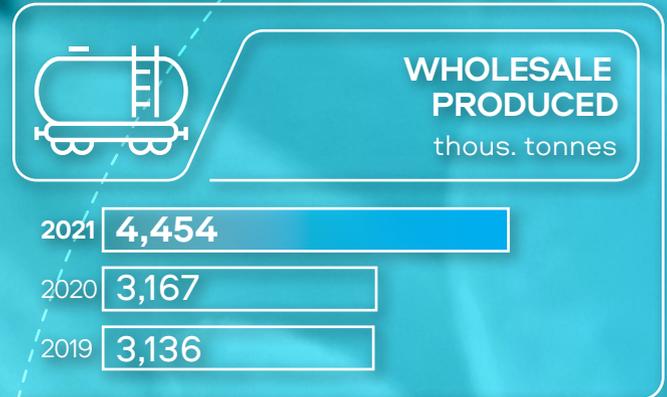
# PROCESSING AND MARKETING

## KEY INDICATORS

102-1, 102-2, 102-7, 102-8, OG1



## KMG OIL PRODUCTS PRODUCED IN RoK



## SERVICE

-  LAND AND AIR TRANSPORT
-  OFFSHORE OPERATIONS SUPPORT
-  OIL AND GAS WELL DRILLING AND DEVELOPMENT. WELL SERVICING AND WORKOVER
-  OIL AND GAS EQUIPMENT MANUFACTURING
-  PROCESS AUTOMATION
-  MAINTENANCE OF MEASURING INSTRUMENTS
-  OIL SPILL RESPONSE SERVICES
-  EXTRACTION AND TRANSPORT OF POTABLE WATER, SEAWATER TRANSPORTATION
-  CATERING AND MAINTENANCE OF SOCIAL FACILITIES, ETC.



## CASE STUDY

### *JUR Modification*

Satti jack-up self-elevating drilling rig (JUR) is the first drilling rig built entirely in Kazakhstan in accordance with international standards. JUR is a Keppel FELS Class B 3-leg design, capable of drilling offshore wells more than 6000 metres deep at water depth from 5 to 80 metres.

In 2019 - 2021, JUR was modified at the base of Caspian Drilling Company Ltd. in Baku. JUR modification allowed to increase its load capacity from 453 to 680 tonnes.

In 2021, JUR began drilling operations in the Azerbaijan Sector of the Caspian Sea at BP's Shallow Water Absheron Peninsula structure.

The project implementation has improved KMG's competitiveness, provided an opportunity to become one of the leaders in offshore drilling and improve the level of professional training of production personnel in accordance with global criteria.



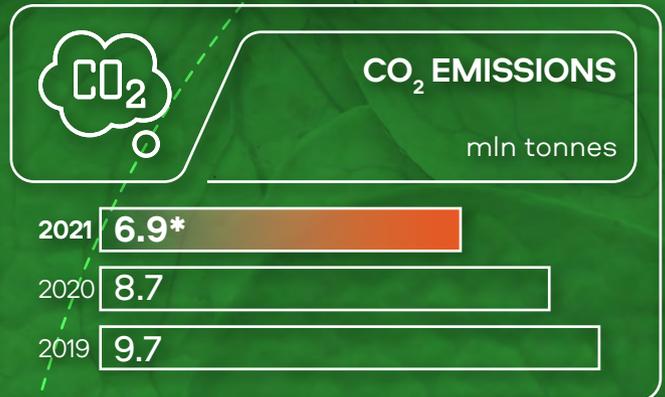
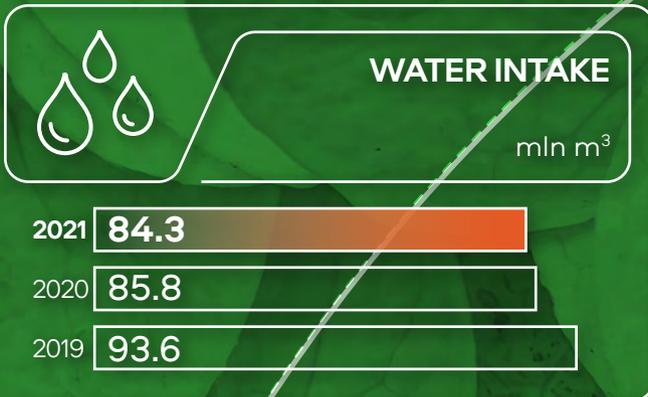
# 1,500

**MORE THAN 1,500 VEHICLES  
AND SPECIAL VEHICLES  
ARE USED IN THE SERVICE  
SECTOR**

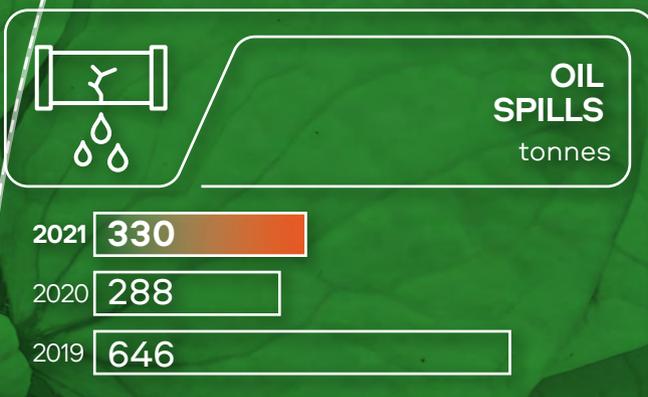
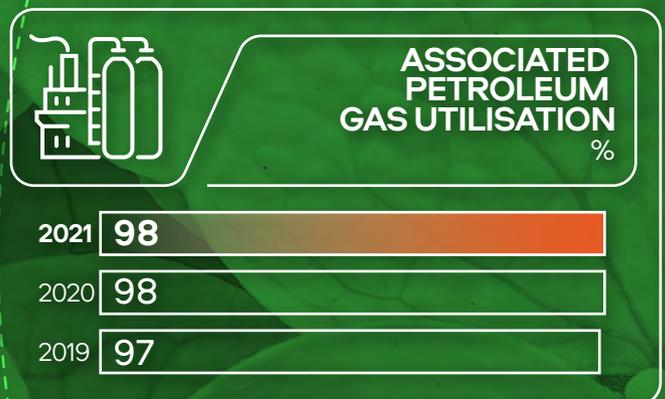
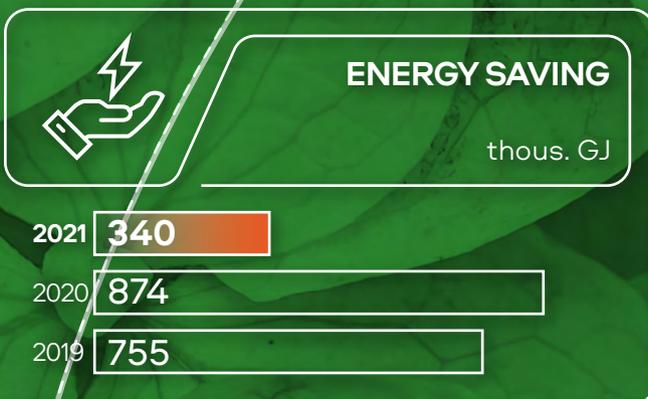
# ENVIRONMENTAL RESPONSIBILITY

## KEY INDICATORS

102-1, 102-2, 102-7, 102-8, OG1



\*excluding KTG





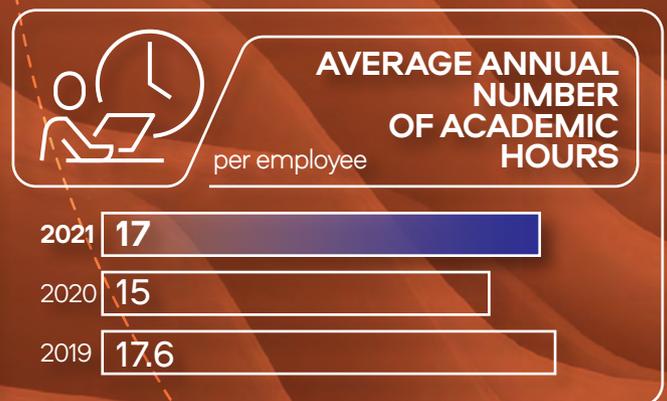
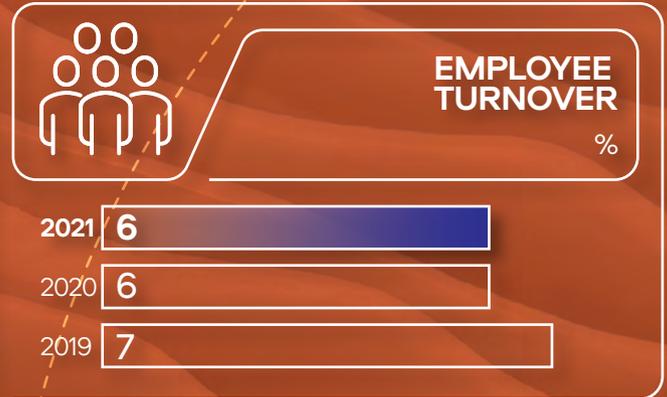
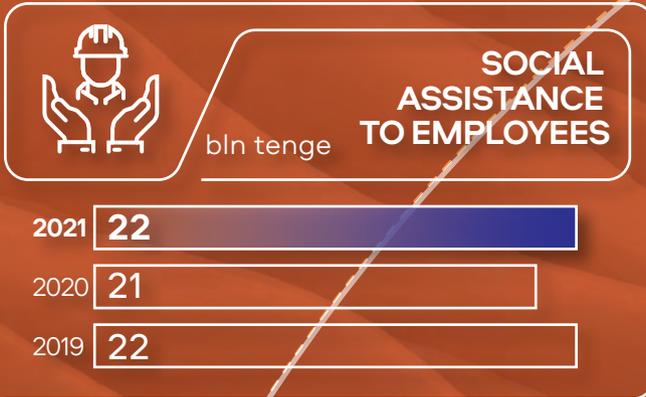
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# SOCIAL RESPONSIBILITY AND OHS INDICATORS

## KEY INDICATORS

102-1, 102-2, 102-7, 102-8, OG1





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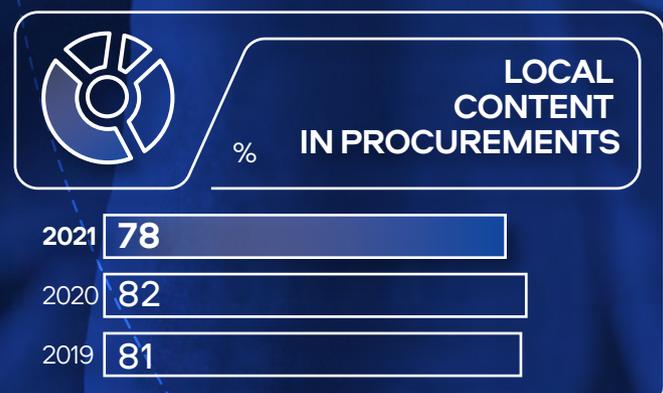
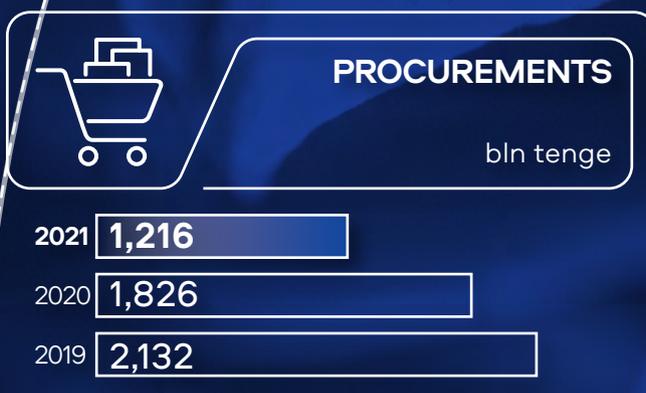
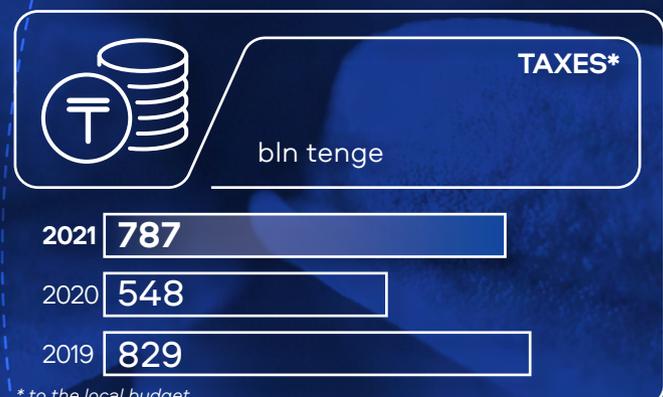
SS



# GOVERNANCE

## KEY INDICATORS

102-1, 102-2, 102-7, 102-8, OG1





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G



# ABOUT THE REPORT

102-32, 102-46, 102-50, 102-52, 102-54, 102-56

JSC NC “KazMunayGas” (hereinafter, KMG) has been reporting on its sustainable development activities annually since 2008, and since 2012 it has been publishing reports in accordance with the Global Reporting Initiative (GRI).

In order to demonstrate its clear and transparent operations to its stakeholders, KMG discloses its approach to sustainable development, social, economic and environmental responsibility on an annual basis.

This Report has been prepared in accordance with Global Reporting Initiative Sustainability Reporting Standards: Core option, as well as GRI G4 Oil and Gas Sector Disclosures.

The Report provides consolidated data about KMG, its subsidiaries and dependent entities for calendar year 2021 (hereinafter referred to as KMG, the Company, the Group):

The Report covers KMG’s subsidiaries and dependent entities with fifty or more percent of voting shares (participation interests) directly or indirectly owned or held in trust by KMG, as well as the legal entities which activities KMG is entitled to control ([the detailed description of reporting scope broken down by sections is given in Appendix 1 to the Report](#)).

The Company’s financial standing and production performance are presented using the Company’s consolidated data with the organisational support of the relevant Company’s Units. This Report has been developed using the KMG’s managerial and audited financial statements prepared in accordance with the International Financial Reporting Standards.

Read more about the process of preparing the Report, identifying material topics and engaging with stakeholders in the [Sustainable Development Management section \(p. 41\)](#).

In order to enable collation and comparability of data by indicators, the information is presented over time for several years.

The KMG Sustainability Report is approved by decision of KMG’s Board of Directors and communicated to the stakeholders by means of publication on the corporate website and distribution of the paper copy.

KMG Sustainability Reports are available electronically in the state, Russian and English languages at:

[https://www.kmg.kz/eng/ustoichivoe\\_razvitie/reports/](https://www.kmg.kz/eng/ustoichivoe_razvitie/reports/)



The online version of the Report is available on KMG website in the state, Russian and English languages at

[https://www.kmg.kz/eng/ustoichivoe\\_razvitie/reports/](https://www.kmg.kz/eng/ustoichivoe_razvitie/reports/)



Guided by international sustainable development initiatives, KMG adheres to the principles of the UN Global Compact (hereinafter, UNGC) and integrates the Sustainable Development Goals (SDGs) into its operations.

<sup>1</sup> Clause 3.6. of the Trust Management Agreement for 100% of ordinary shares of JSC “KazTransGas” (hereinafter, KTG) dated 11.03.2021 between KMG and Samruk- Kazyna JSC specifies a list of issues where the Trustee is obliged to agree with KMG the implementation of certain rights and obligations. This list did not include the issues of decision-making on labour and environment protection, management of human resources and social responsibility, and procurement activities. Also, in accordance with KMG BoD Resolution No. 14/2021 dated 09.09.21 (item 18), KTG was divested to the Fund in November 2021, and the asset has not been included in KMG’s consolidation since then. Therefore, information in the Report on these sections is presented for KMG Group excluding KTG and information on this asset is presented separately.

 **SUSTAINABLE DEVELOPMENT**  **GOALS**



**UN GLOBAL COMPACT PRINCIPLES**

HUMAN RIGHTS	Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights.
	Principle 2	Businesses should not be complicit in human rights abuses.
LABOUR	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.
ENVIRONMENT	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.
ANTI-CORRUPTION	Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.

Since 2006, KMG is a member and active participant of UNGC and is committed to UNGC Ten Principles and 17 SDGs.

The Company's Annual Sustainability Report is our progress message under the UN Global Compact and is available at <https://www.unglobalcompact.org/what-is-gc/participants/6810>



# MESSAGE FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS



**Christopher John Walton**

Chairman of the Board of Directors

## Dear readers,

It is my pleasure to present 2021 Sustainability Report of JSC NC “KazMunayGas”.

I would like to highlight the **key achievements and changes related to the Company’s sustainable development** at the end of the reporting period.

### **KMG’s New Strategy**

In 2021, we approved a revised ten-year KMG Development Strategy.

The Company’s Vision and Mission state our commitment to sustainable development principles and caring for future generations, and our four strategic goals are based on sustainable development priorities.

One of our strategic goals, “Sustainable Development and Progressive Reduction of Carbon Intensity of Operations”, includes improving our sustainable development system in order to integrate ESG principles into our key business processes.

### **Low-Carbon Development**

In support of the Company’s Development Strategy, and recognising the importance of the climate agenda, we have developed and approved the KMG’s 2022-2031 Low-Carbon Development Programme. The Company aims to achieve a 15% reduction in carbon dioxide emissions by 2031 versus 2019 by reducing the energy and carbon intensity of operations and developing the renewable energy sources. A Low-Carbon Development Department has been set up in the Company to systematise these efforts.

### **Year of Ecology**

In order to take measures to comply with new environmental requirements and global trends, 2021 was declared the Year of Ecology. A number of measures aimed at ensuring environmental safety have been implemented. In accordance with the new Environmental Code, KMG’s Environmental Policy has been updated and the Company’s commitment to sustainable use of natural resources and compliance with biodiversity conservation measures has been further strengthened. Several large-scale water treatment and desalination projects are underway.

### ESG Rating

In 2021, we received a well-deserved evaluation of our sustainable development efforts from Sustainalytics, an international rating agency. The Company's rating has been improved to 72 points and the risk rating has been reduced from a high of 34.5 to an average of 28.4 points.

The Company is a pioneer among the Fund's portfolio companies in receiving the ESG rating. Our goal is to maintain this high performance that we achieved.

### KMG's Contribution to Achieving SDGs

We support the international initiative of UN Sustainable Development Goals (SDGs). The Company has integrated six of KMG's priority SDGs into its business processes. Our initiatives and performance in contributing to SDGs are published on the corporate website.

### Corporate Governance

KMG's corporate governance rating was upgraded from BB to BBB following an independent corporate governance audit. The auditors noted positive changes in the Company in the areas of "Board of Directors and Executive Body Effectiveness", "Risk Management, Internal Control and Audit", "Sustainable Development" and "Transparency".

The Health, Safety, Environment and Sustainability Committee of the Board of Directors held five meetings in 2021 where it reviewed 52 issues related to sustainable development.

### Human Capital Development and Social Responsibility

In order to comprehensively improve the Company's management system in the area of employees' rights and to strengthen measures to protect their health, we have developed the Human Rights and Public Relations Policy of JSC NC "KazMunayGas", as well as the Personnel Health Management Programme.

As part of digital transformation, several projects are being successfully implemented to engage KMG Group's personnel into continuous performance improvement, foster a culture of lean production, and

improve digital literacy. For example, Lean 6 Sigma Programme, in addition to certifying the production companies' employees in project management, encourages them to continually seek out and implement simple, low-cost improvements with economic benefits. 13 LSS projects were implemented in oil production in 2021. LSS methods have previously been successfully implemented at oil refineries. A total of 156 projects under the Programme have been implemented at the refineries since 2016.

The Atyrau Refinery and Pavlodar Refinery, as well as PetroKazakhstan Oil Products are introducing computer-aided simulators (CAS) for refinery operators to practice response to emergency and routine situations in simulated conditions, which will minimise human-factor-caused disruptions in real operations.

Qazaqstan Project Management Awards recognised Lean 6 Sigma Project in the Oil Refining and Petrochemicals business as the best project of 2021 in Kazakhstan, while the CAS project was ranked 3rd.

### Project Management

We have initiated important changes in our project management processes in order to integrate the sustainable development principles. We have updated corporate documents to include ESG-based project assessment and trained the employees in using the project and risk assessment tools according to GPM P5 (Green Project Management) standard. By revamping the project assessment process, we seek to make investment project decisions based on all ESG risks.

In conclusion, I would like to thank all our stakeholders, in particular our partners who have worked with us during this difficult period. We highly appreciate that we have like-minded people on the path to sustainable development.

Best regards,  
**Christopher John Walton**  
 Chairman of the Board of Directors

# MESSAGE FROM THE CHAIRMAN OF THE MANAGEMENT BOARD



**Magzum Mirzagaliyev**

Chairman of the Management Board

**Dear readers,**

Over the past few years, we have faced a number of events that have affected us both financially and operationally. In 2021, we did not allow the business to stop as we continued to deal with COVID-19 pandemic.

Since the beginning of 2022, the Company has faced a number of domestic and geopolitical challenges. These events had a significant impact on both the Company's operations and global energy market.<sup>2</sup>

In 2021, in response to new challenges, we approved a new ten-year KMG Development Strategy, one of the strategic goals being Sustainable Development and Progressive Reduction of Carbon Intensity of Operations. We have also developed a 2022-2031 Low-Carbon Development Programme in order to systematise our main approaches and efforts to reduce the Company's carbon footprint.

By 2031, we aim to reduce direct and indirect CO<sub>2</sub> emissions by 15% versus 2019, carbon and energy intensity of operations by at least 10% and to implement RES projects with KMG accounting for a total capacity of at least 300 MW.

We continued to integrate ESG criteria into our operations to improve our sustainability management system and our understanding of key ESG risks. The international agency Sustainalytics has upgraded the risk rating of JSC NC "KazMunayGas" in sustainable development from 34.5 to 28.4 points, which indicates KMG's strong positions in managing the material ESG risks in the global oil and gas market.

Timely 2020-2021 Anti-Crisis Measures taken in response to external challenges have enabled the Company to gradually maintain financial sustainability and return to pre-pandemic financial levels. The Company netted 1,197 billion tenges in profit in the reporting period. Being one of the largest taxpayers, KMG paid 787 billion tenge in taxes and other obligatory payments to the national budget in 2021.

<sup>2</sup> Domestic and geopolitical challenges: the state of emergency in RoK in early January 2022 and the conflict between Russia and Ukraine in February 2022 followed by multiple sanctions imposed against Russia by most Western countries.

The Company treats them as non-adjusting events after the reporting period, the quantitative effect of which cannot be confidently estimated at this point in time. KMG's management is currently analysing the potential impact of changing micro and macroeconomic conditions on the Company's financial position and sustainable development results.

Another priority for KMG is supporting the domestic producers and increasing the local content in procurements of goods and services. The total amount of goods, works and services procured by KMG Group from Kazakh companies was 1,216 billion tenge with the local content share of 78%.

Systematic efforts are ongoing to prevent the incidence and to minimise the spread of COVID-19 at work with all the necessary organisational arrangements to counteract the epidemic and appropriate comprehensive measures being implemented across the group. At the end of the reporting year, 76% of the total number of employees in the group had been vaccinated.

Protecting the lives and health of employees and ensuring safe working conditions are top priorities for the company. The Company pays particular attention to high occupational safety.

At the end of the reporting year, the number of work-related accidents in the Company decreased by 7% versus the previous year. It is regrettable to report that there has been one fatal accident, with three of our employees dying as a result of fire at the Petromidia Refinery in Romania. Following the investigation, we took appropriate measures to prevent similar incidents and developed a detailed corrective action plan to enhance the safety of our employees.

It should be noted that despite the crisis, we have maintained all jobs for the production personnel and continued improving their working conditions.

We place special emphasis on implementation of in-house socially-oriented programmes. In promoting them, the emphasis is placed primarily on creating favourable conditions for the Company's employees. These are the financial incentives, retention and professional development, and workplace safety. KMG provides its employees with a guaranteed social package. Collective agreements of KMG's companies provide for more than 35 forms of social assistance for employees and their family members as well as retirees.

Prevention of social tensions, labour disputes and conflicts is a particular area of focus. The Company cooperates with the trade unions through social partnership. KMG Group has 28 trade union committees including local trade unions protecting the interests of KMG's employees. All KMG's companies have conciliation committees in place. All KMG's companies allow each employee to address questions to the company's management and receive a timely response, there are regular biannual reporting meetings between CEOs and employees and meetings between managers and trade unions.

KMG annually supports the local development initiatives in the regions of its operations. More than 5 billion tenge were allocated in 2021 to finance social projects in the regions, including Zhanaozen Integrated Development Plan.

Strict observance of the rights of the employees, continuous improvement of working conditions, transparency of procurement procedures, high requirements for industrial safety, environmental protection and improvement of corporate governance continue to be our top development priorities. By choosing New Kazakhstan, we are choosing new standards and approaches in dealing with these issues.

Best regards  
**Magzum Mirzagaliyev**  
 Chairman of the Management Board

2021

# ABOUT THE COMPANY



# ABOUT THE COMPANY

102-1, 102-2, 102-4, 102-5, 102-6, 102-9, 201-4

Joint Stock Company “National Company “KazMunayGas” is a unique vertically integrated oil and gas operator that implements the full production cycle from exploration and production of hydrocarbons, their transportation and processing to provision of specialised services.

KMG was established pursuant to Decree No. 811 of the President of the Republic of Kazakhstan (hereinafter, the RoK) dated 20 February 2002 on Measures to Further Pursue the State Interests in the National Oil and Gas Sector, and RoK Government Resolution No. 248 dated 25 February 2002 on Measures to Enforce Decree No. 811 of the RoK President dated 20 February 2002. KMG is the legal successor of closed joint stock companies National Oil and Gas Company “Kazakhoil”, National Company “Oil and Gas Transportation” and joint stock company “KazMunayGas – Refining and Marketing”. KMG was founded by the RoK Government represented by the State Property and Privatisation Committee of the RoK Ministry of Finance.

KMG shareholders are Samruk-Kazyna Sovereign Wealth Fund Joint Stock Company (hereinafter, Samruk-Kazyna JSC) (90.42%) and National Bank of Kazakhstan Republican State Enterprise (9.58%).

KMG Group includes 110 companies with fifty or more voting shares (participation interests) directly or indirectly owned by KMG, of which 56 companies are located in the RoK.

The remaining assets are located in such countries as Romania, Georgia, Switzerland, Netherlands, Canada, Bulgaria, Moldova, Russia, Turkey, UK, UAE, British Virgin Islands, Marshall Islands, Bahamas, Bermuda.

Reduction of legal entities in the Group, including by means of liquidation/reorganisation of sub-holdings, is pursued under privatisation and divestment programmes.

In 2020, the Government of the Republic of Kazakhstan approved a new 2021-2025 Comprehensive Privatisation Plan (Decree No. 908 of the RoK Government dated 29.12.2020), which involves the withdrawal of 48 (forty-eight) KMG companies, 22 (twenty-two) of which are also included in the Divestment Programme.

On 9 December 2021, KMG’s Board of Directors (Minutes 19/2021, item 28) amended the approved List of Non-Strategic Assets of JSC NC “KazMunayGas” (Divestment Programme) dated 04 November 2021, which involves divestment of 47 companies from 2021 to 2025.

## KMG shareholders:



**SAMRUK**  
KAZZYNA

**90.42%**

Joint Stock Company "National Welfare Fund "Samruk-Kazyna" (hereinafter – JSC "Samruk-Kazyna")



**НБК**

**9.58%**

Republican state Institution "National Bank of the Republic of Kazakhstan".

Six companies were sold in 2021 under the Divestment Programme:

1. 100% participation interest in Process Transport and Well Servicing Department LLP
2. 99.8% participation interest in Semser-Ort Sondirushi LLP
3. 100% participation interest in KazMunayGas-Engineering LLP
4. 100% participation interest in Rominserv Valves Iaifo S.R.L.
5. 98.82% participation interest in Palplast S.A.
6. 49.99% participation interest in Al-Farabi Operating LLP

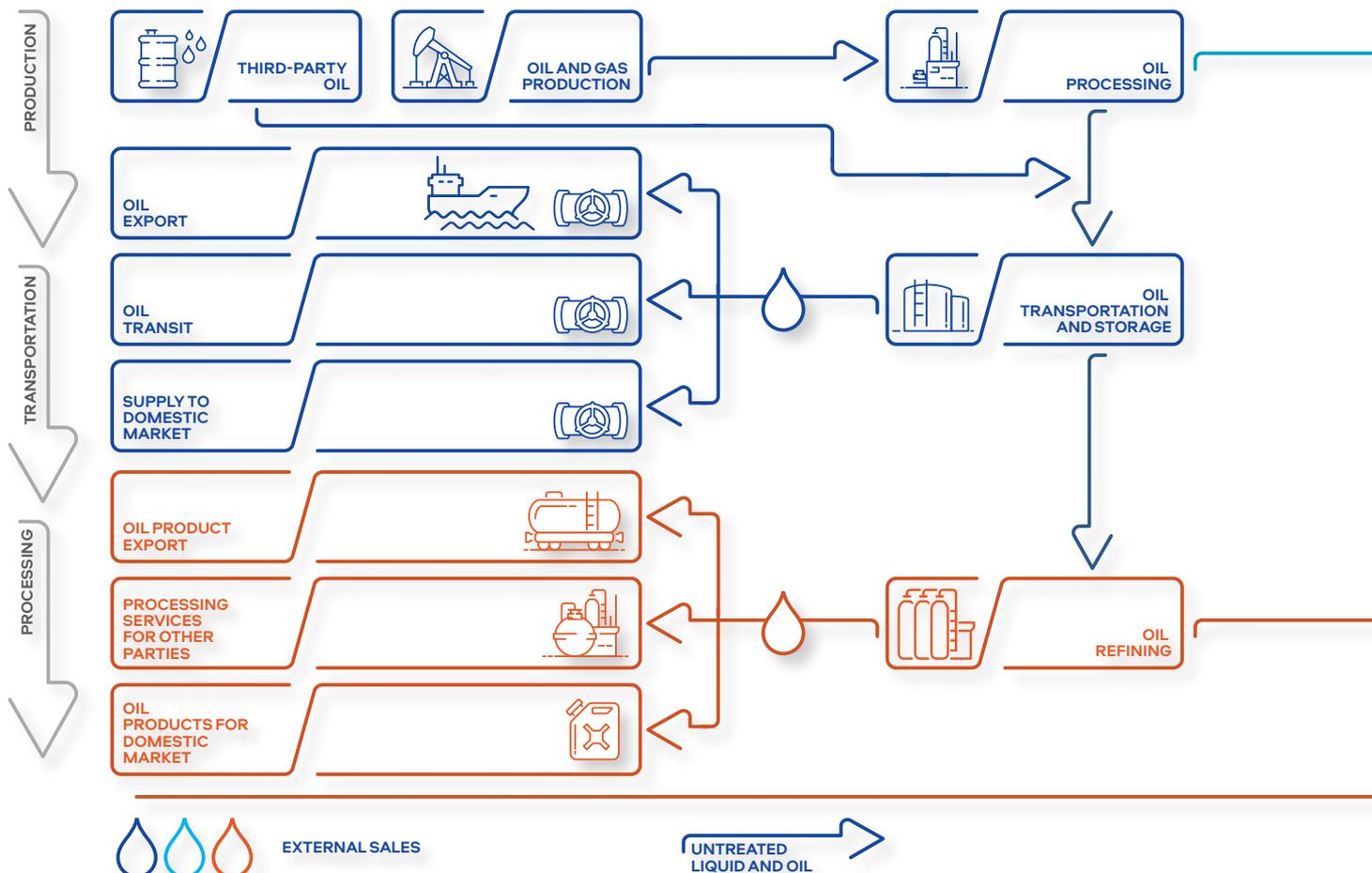
Six companies were liquidated:

1. Rompetrol Albania Sh.A.
2. Rompetrol Albania Downstream
3. Rompetrol Albania Wholesale
4. Rompetrol Distribution Albania
5. Rompetrol Ukraine LTD
6. Agat LTD

On 9 November 2021, under conditions of the sale and purchase agreement dated 3 November 2021 between KMG and Samruk-Kazyna JSC (hereinafter, the Fund) for 100% of ordinary shares of KTG, the shares of KTG were transferred to the Fund.

## PRODUCTION VALUE CHAIN

2021

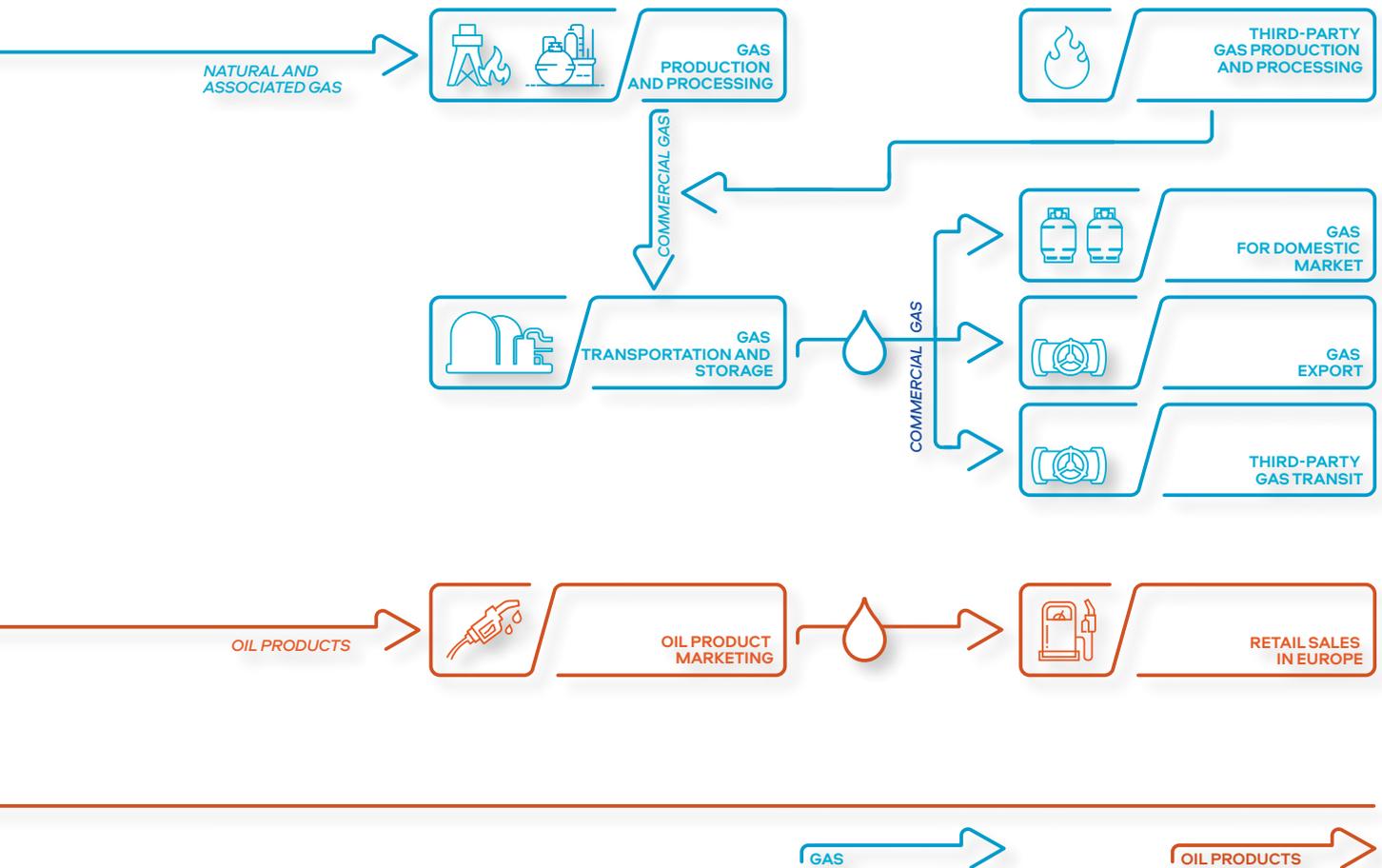


In this regard, 14 companies were divested from KMG:

1. JSC “KazTransGas”
2. KazTransGas Aimak JSC
3. Intergas Central Asia JSC
4. KazTransGas-Onimderi LLP
5. AvtoGazAlmaty LLP
6. Beineu-Shymkent Gas Pipeline LLP
7. Asia Gas Pipeline LLP
8. Asia Gas Pipeline-Khorgos LLP
9. KazTransGas-Bishkek LLC
10. AmangeldyGas LLP
11. Qazaq Gas Qurylyys LLP
12. KTG Finance B.V
13. KazMunayGas-Service NS JSC
14. Otan Gas LLP

A 25% participation interest in Butadiene LLP was acquired in order to jointly implement a rubber production project with Tatneft PJSC.

Overall in 2021: 20 companies sold, 6 companies liquidated, 1 company acquired.



## EXPORT OF OIL PRODUCTS DERIVED FROM KMG RESOURCES BROKEN DOWN BY SHARE AND SUPPLY DESTINATION

Item No.	Нефтепродукты	Actual for 12 months of 2021		
		volume, t	Countries	Share, %
1	Fuel oil	541,967	Europe	100%
2	VGO	165,724	Europe	100%
3	High-purity paraxylene	25,172	China	100%
4	K4, K5, E-K4 summer diesel fuel	19,198	Europe	34%
		28,461	Uzbekistan	50%
		9,465	Tajikistan	17%
5	Benzene	3,523	Russia	100%
6	Total coke	28,790	China	59%
		20,121	Russia	41%
7	Calcined coke	10,819	China	65%
		5,918	Russia	35%
8	Sulphur	12,069	Europe	71%
		4,885	Africa, Nigeria	29%
9	Gas (Butane)	489	Tajikistan	50%
		482	Russia	50%
<b>Total:</b>		<b>877,083</b>		

2021

JSC NC “KazMunayGas” (hereinafter, KMG) ships diesel fuel for field agricultural activities and supplies fuel oil to social and production facilities and institutions during the heating season.

KMG also sold jet fuel through KMG-Aero LLP and through exchange trade in 2021 to 9 local airports and airlines, as well as to 7 commercial companies:

- Almaty International Airport JSC
- Aulie-Ata International Airport JSC
- Shymkent Airport JSC
- Nursultan Nazarbayev International Airport JSC
- Deutsche Lufthansa Aktiengesellschaft (Germany)
- Aerofuels Overseas Limited (Russia)
- Air Astana JSC
- QAZAQ AIR JSC
- Scat JSC
- KazAviaSas JSC
- Vines Trading LLP
- Asia Invest Industries LLP

### CASE STUDIES

Since 2020, all refineries in Kazakhstan are technologically ready to produce JET-A1 international-class jet fuel.

At that, the following is taken into account:

- Readiness of domestic airlines' aircraft to use JET A-1 jet fuel;
- Possibility of supplying to the international market;
- Improving the attractiveness of RoK airports;
- Opportunity to develop fuelling facilities at RoK airports according to international standards.

One of the key advantages of JET A-1 jet fuel over TC-1 and PT jet fuels is the improved fire and explosion safety properties.

The remaining oil product volumes are sold to third-party consumers on the domestic market and for export.

KMG exported diesel fuel (57,000 tonnes) in Q1 2021. 79% decrease in light oil product exports versus 2020 is due to increased consumption in RoK domestic market.

The structure of oil product exports in 2021 was dominated by shipments of dark oil products to Europe. Diesel fuel, petrochemicals, coke, sulphur and butane were supplied to Europe, China, Nigeria, Russia, Uzbekistan and Tajikistan.

In 2021, KMG purchased oil from four oil producing subsidiaries located in Western Kazakhstan for further processing at three refineries (Atyrau Refinery in the west,

Pavlodar Refinery in the east and PKOP LLP (Shymkent) in the south of the republic). Oil and refining services value totalled 423 bln tenge.

In accordance with the oil supply schedules approved by RoK Ministry of Energy, KMG started processing oil at PetroKazakhstan Oil Products LLP's refinery in Shymkent (hereinafter, PKOP) and selling oil products starting from August 2021. By the end of 2021, a total of 147,000 tonnes of KMG oil had been processed at PKOP.

The Republic of Kazakhstan has also actively embarked on exchange trading of oil products. As of December 2021, 75% of liquefied petroleum gas and 10% of light oil products were sold on electronic trading platforms.

## WHOLESALE OF KMG OIL PRODUCTS PRODUCED IN THE REPUBLIC OF KAZAKHSTAN, THOUS. TONNES

Product	2019			2020			2021		
	domestic market	export	total	domestic market	export	total	domestic market	export	total
Gasolines	789	37	826	647	163	810	1,195	0	1,195
Diesel fuel	1,028	0	1,028	930	115	1,045	1,291	57	1,348
Jet fuel	85	0	85	65	0	65	120	0	120
Fuel oil	188	469	657	211	402	613	241	542	783
Vacuum gas oil	0	167	167	0	155	155	0	166	166
Bitumen	65	0	65	87	0	87	83	0	83
Coke	40	51	91	61	57	118	79	66	145
Sulphur	2	13	15	6	5	11	3	17	20
Benzene	0	12	12	0	19	19	0	4	4
Paraxylene	0	55	55	0	90	90	0	25	25
Liquefied gas	114	0	114	133	1	134	162	1	163
Heating fuel	7	0	7	6	0	6	4	0	4
Process fuel	0	0	0	0	0	0	382	0	382
Other	14	0	14	15	0	15	18	0	18
<b>Total</b>	<b>2,332</b>	<b>804</b>	<b>3,136</b>	<b>2,161</b>	<b>1,007</b>	<b>3,167</b>	<b>3,577</b>	<b>877</b>	<b>4,454</b>

301-1, 417-1, OG8

The country's domestic market was 100% supplied with domestic oil products.

In accordance with Technical Regulations of the Customs Union 013/2011 on Requirements for Motor and Aviation Gasoline, Diesel and Marine Fuels, Jet Fuel and Heating Oil (hereinafter, TR CU), the quality of produced fuel corresponds to environmental classes K4 and K5 (similar to Euro-4 and Euro-5).

In accordance with TR CU, no metal-containing additives (containing manganese, lead and iron) may be used in motor gasoline and diesel fuel, the sulphur content maximum is 50 mg/kg and the benzene content maximum is 1%.

The purpose of completed upgrading of the RoK refineries is to improve the quality of motor fuels produced to K-5 level (equivalent to Euro-5 standard).

At that, we have decreased the content of harmful substances in the produced motor fuels, the main source of human-induced health impacts from vehicle exhaust emissions:

- by a factor of 10 for sulphur (source of sulphur oxides);
- by a factor of 1.5 for aromatic substances (source of soot);
- by a factor of 5 for benzene (source of benzoperene, which is a carcinogen and is classified as hazard class 1).

Also in 2021, Atyrau Refinery LLP, Pavlodar Refinery LLP, PKOP LLP and Caspi Bitum JV LLP approved Action Plans for Energy and Resource Conservation and Atmospheric Emission Reduction until 2031.

**The information on quality of products of Kazakhstan refineries is available at the official websites of the refineries:**

[https://www.pnhz.kz/en/product/quality\\_of\\_product/](https://www.pnhz.kz/en/product/quality_of_product/)



<https://www.anpz.kz/en/production/product/>



[https://www.petrokazakhstan.kz/eng/pages/processing\\_subdivision.html](https://www.petrokazakhstan.kz/eng/pages/processing_subdivision.html)



*More detailed information about the Company's operations and financial performance is available in the 2021 Annual Report:*



<https://www.kmg.kz/eng/investoram/reporting-and-financial-result/>

# THE COMPANY'S NEW STRATEGY AND OUR GOALS

102-16, 102-44

As a vertically integrated national oil and gas company, KMG successfully resolves tasks at hand, focuses its efforts on further development of country's oil and gas sector and assists the Government with social and economic development of the Republic of Kazakhstan.

Before 2017, the Company pursued a dynamic growth strategy through debt-financed investments and acquisitions, which was the main reason for the high debt of KMG. The Company managed to purchase major assets, increase hydrocarbon reserves, upgrade oil refineries, expand and build new infrastructure to transport and export oil and gas inside the country and abroad. This facilitated progressive development of the economy and contributed to energy security of the country.

The development strategy adopted by the Company in 2018 was aimed at gradual organic growth and mainly focused on financial stability. During these years, the Company mainly achieved mid-term objectives at hand.

In 2020, the Company developed 2020-2021 Anti-Crisis Measures to overcome adverse effects of the global crisis.

KMG delivered on its commitments to cut oil and gas production under OPEC+ Agreement, ensured continuity in all business areas, preserved its financial stability, continued to invest in development projects, and retained potential for further growth. Considering the changes in KMG's asset portfolio due to entry into the oil and gas chemical business and the spin-off of KTG as a separate national company within Samruk-Kazyna JSC, as well as the global trend towards a clean energy transition and stricter carbon regulation, the Company approved a new 2022-2031 Development Strategy in 2021.

The Company recognises the importance of its economic, environmental and social impacts and will continue to integrate sustainability principles into its key business processes to align economic, environmental and social priorities as well as corporate governance objectives.

The Company's growth over the next ten years will be driven by increase in its resource base, efficiency of current operations, development of new process stages, implementation of modern technologies and reduction of its carbon footprint.

## VISION

A national vertically-integrated oil and gas company that meets high safety and sustainability standards and is focused on maximising the financial performance.

## MISSION

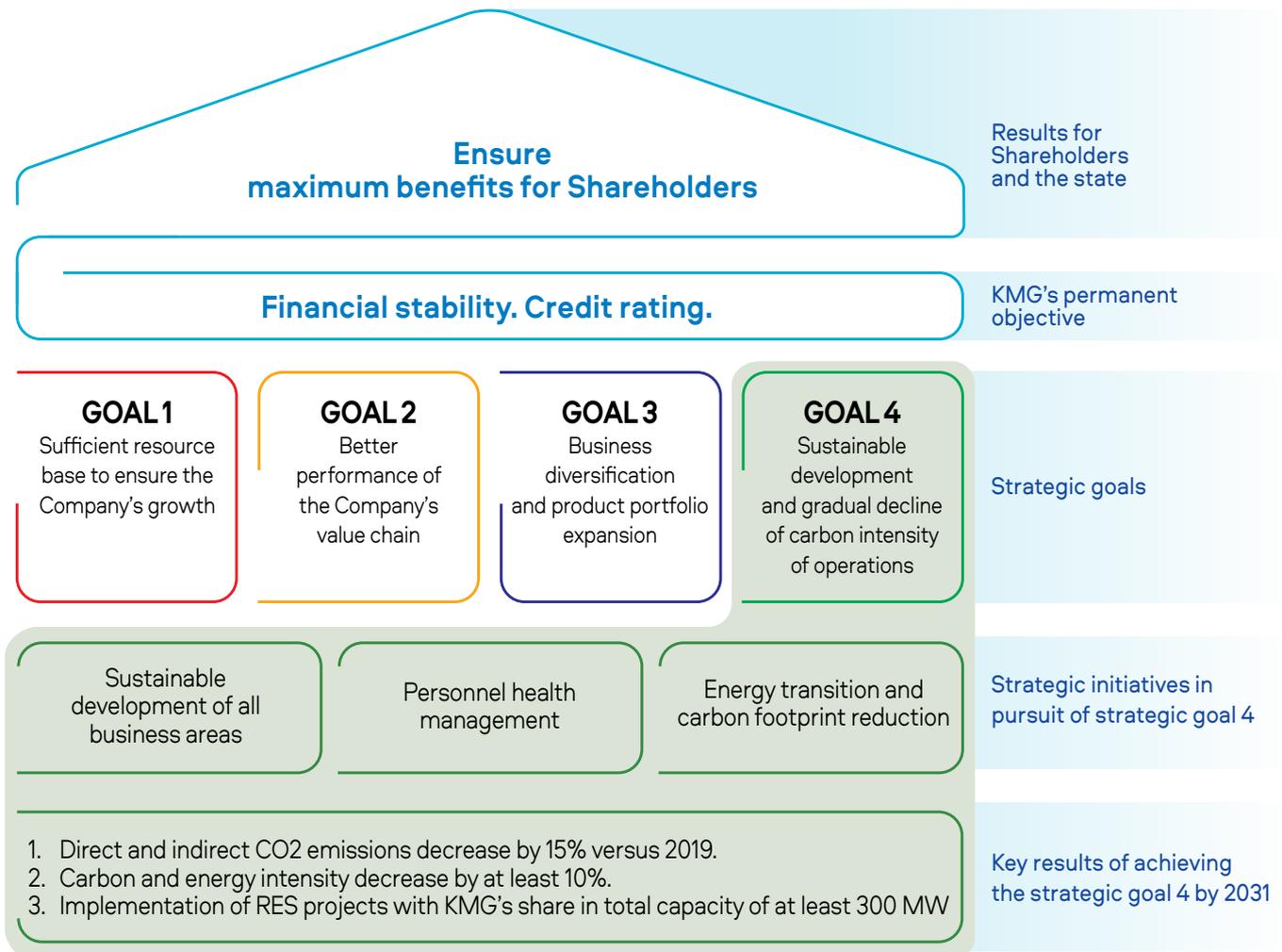
We develop natural resources in an effective and sustainable manner to ensure energy security, development and prosperity of Kazakhstan, caring about future generations.

## GOALS

KMG Mission defines **four strategic goals**.

1. Sufficient resource base to support the Company's growth.
2. Increasing efficiency of the Company's value chain.
3. Business diversification and product portfolio expansion.
4. Sustainable development and gradual decline of carbon intensity of operation.

2021



# LOW-CARBON DEVELOPMENT PROGRAMME

102-15, 102-44

## ABOUT THE PROGRAMME

Today, the fight against climate change and the industry decarbonisation are firmly on the global political, investment and trade agenda. Carbon footprint reduction is the most important driver in the fight against global warming.

The sustainability and long-term decarbonisation is enshrined in the Paris Climate Agreement, which has a global target of maintaining the climate change at 1.5°C or below by 2100. And also the tightening of EU climate policy, which aims to reduce greenhouse gas emissions by 55% versus 1990 by 2030. In pursuance of this policy, the European Union plans to introduce carbon border regulation mechanism for imported carbon-intensive products.

For its part, Kazakhstan supports the global agenda to step up the efforts and ambition towards achieving the goals of the Paris Agreement, and has committed to a voluntary contribution to reduce greenhouse gas emissions by 15% by 2030 versus 1990.

Last November, the President of Kazakhstan Kassym-Jomart Tokayev spoke at a climate ambition summit where he declared Kazakhstan's readiness to combat climate change and achieve carbon neutrality by 2060. A Carbon Neutrality Doctrine of the Republic of Kazakhstan by 2060

is being developed in pursuance of the goal stated by the Head of State.

On 13 October 2021, an International Conference on Ways to Achieve the Goals of the Paris Agreement and Carbon Neutrality of Kazakhstan with the participation of the Head of State Kassym-Jomart Tokayev was held in Nur-Sultan with the support of JSC NC "KazMunayGas". The conference was also attended by high-ranking UN officials, international experts, representatives of the business community and civil society, financial institutions, development partners and the media. At the low-carbon exhibition, A. Aidarbayev, Chairman of the Management Board of JSC NC "KazMunayGas", presented to Kassym-Jomart Tokayev the goals and ways of achieving carbon neutrality in our company.

<https://akorda.kz/ru/prezident-vystupil-na-mezhdunarodnoy-konferencii-po-dostizheniyu-uglerodnoy-neytralnosti-1393134>

In support of the state policy on low-carbon development of the country and in accordance with official instructions No. 47-r of Samruk-Kazyna JSC dated 24 May 2021 and No. 32-r dated 20 April 2021, JSC NC "KazMunayGas" developed 2022-2031 Low-Carbon Development Programme of JSC NC "KazMunayGas" (hereinafter, LCPD, the Programme), which was approved by the Board of Directors of the Company on 4 November 2021.



The Programme defines a unified low-carbon development framework of KMG and systematizes the Company's carbon footprint reduction efforts.

The main goal is to determine KMG's climate ambitions, systematise main approaches and measures to reduce the carbon footprint by analysing the existing potential, defining key development areas and enhancing the preparedness of the company.

## KEY AREAS AND EXPECTATIONS

The Programme is structured with five key sections (carbon regulation analysis and key trends, KMG GHG emission inventory, scenario simulation, strategic areas of LCPD, implementation mechanism).

The introductory part of the Programme is focused on analysing the international, including primarily KMG's main trading partners, and national climate regulations and their impact on the sustainability and continued competitiveness of the Company, which defined key prerequisites for KMG's low-carbon development.

Detailed inventory of greenhouse gas emissions has been taken in order to analyse the current situation and establish a baseline for further development of the Programme.

Inventory was taken for direct (Scope 1) and indirect (Scope 2) emissions.

- Direct emissions are greenhouse gas emissions associated with combustion of hydrocarbon fuels and unavoidable volatile emissions from production processes at sources owned by KMG;
- indirect emissions associated with consumption of electricity, heat, hot water and steam supplied from third parties;

For the purposes of this programme, only CO<sub>2</sub> is considered in direct emissions.

The year 2019 is defined as a baseline year, as it is closest to the typical operations of KMG Group, unlike 2018 affected by the economic crisis and 2020 influenced by the coronavirus pandemic.

Scenario simulation of KMG development was based on the data collected as a result of inventory taking. The model considered three scenarios: baseline scenario, green development scenario and low-carbon development scenario.

The model predicts that KMG SDEs will show different GHG emission trends up to 2030 under the Business as Usual scenario. The total increase in GHG emissions across all assets will be about 4% versus 2019. However, model projections do not include planned future oil and gas chemical projects due to limited data for analysis.

The green scenario assumes the reduction of GHG emissions while maintaining the current operating structure of assets through energy efficiency efforts, electrification, and use of renewable energy.

The low-carbon development scenario includes projects for active deployment of hydrogen production, carbon capture and storage, and active offset policy (development of climate projects) in addition to the above efforts. However, given the country's current state of readiness for new technologies, low carbon prices, some gaps in permitting and legislation framework, poor infrastructure, etc., this would require large investments but would not have a significant effect on reducing the carbon footprint by 2031.

Based on the above, the green development scenario with a focus on energy efficiency and renewable energy has been selected as the most promising scenario until 2031.

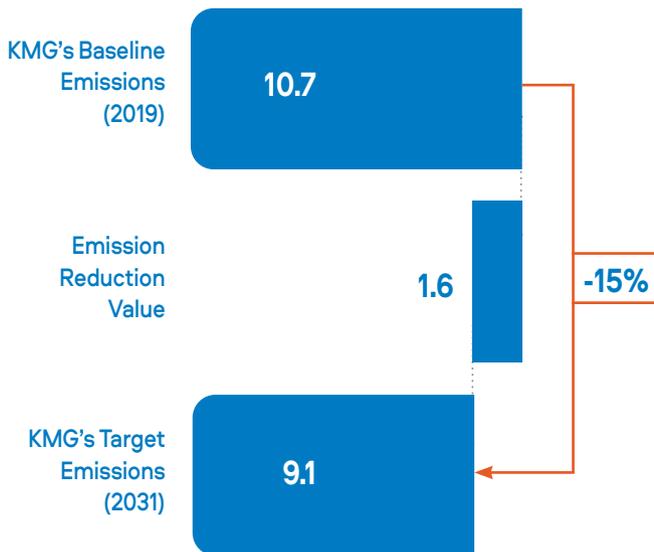
At the same time, promising areas should be piloted in order to build up competencies and in-house potential for subsequent scaling up, should favourable conditions arise. The Programme has these measures allocated into a separate block "additional decarbonisation measures".

Based on this analysis and KMG's country policy and development projections, the achievable goal for the Company under the Green Development Scenario is to **reduce carbon dioxide emissions by 15% by 2031 versus 2019, or 1.6 mln tonnes of CO<sub>2</sub>**.

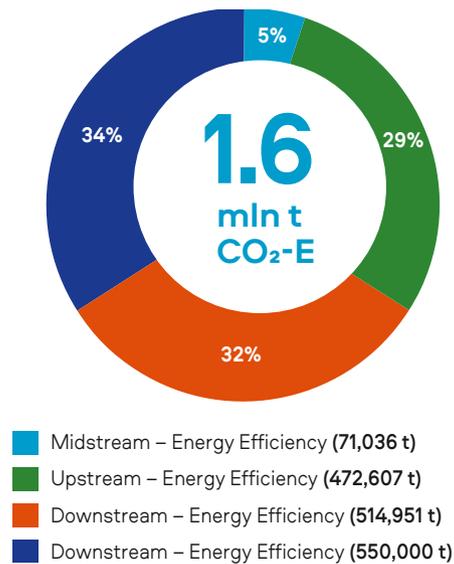
The figure illustrates the main measures that would allow to achieve the stated goal.

# KMG'S LOW-CARBON DEVELOPMENT PROGRAMME FOR 2022-2031

## TARGET



## KEY AREAS



## ADDITIONAL MEASURES

### HYDROGEN ENERGY DEVELOPMENT::

- establishing a Hydrogen Competence Centre to build up KMG potential
- pilot hydrogen mobility project at Atyrau Refinery

### INTRODUCTION OF CARBON CAPTURE AND STORAGE TECHNOLOGIES (CCUS):

- Pilot project with analysis of the potential to increase ORF

### IMPLEMENTATION OF FOREST CLIMATE PROJECTS:

- 2,000 ha (10-16 thous. t CO<sub>2</sub>-e per year)

### ROUTINE FLARING:

- 29.8 thous. t CO<sub>2</sub>-e

### INTRODUCTION OF LDAR TO PREVENT METHANE LEAKS

1.6 mln tonne reduction of CO<sub>2</sub>-e emissions will be achieved through active use of RES, which share in the energy mix should increase by 15% versus 2019 by 2031, and by improving the energy efficiency of KMG's operational processes. KMG has analysed the existing and potential measures to identify the existing potential for energy efficiency. The measures are consolidated in a single register that allows a dynamic update of the decarbonisation programme in terms of investment, energy saving potential, GHG emission reduction and financial impact of implementation.

As part of the low-carbon development programme, KMG plans to implement RES projects with installed capacity of at least 300 MW (cumulatively by 2031), which are currently being negotiated with potential partners (including major international companies). KMG currently has a memorandum of understanding with Eni S.p.A., Italy's largest oil and gas company, dated 26 July 2021, under which a number of joint projects for construction and commissioning of renewable energy facilities are planned to be implemented. <https://www.kmg.kz/rus/press-centr/press-relizy/?cid=0&rid=862>



In addition, the Ministry of Energy of the Republic of Kazakhstan, Samruk-Kazyna JSC, JSC NC "KazMunayGas" and Total Eren S.A have signed a Memorandum of Understanding in 2021. The signed document is aimed at developing, financing, building and operating the hybrid power plants using wind energy in Kazakhstan, with a total capacity of about 1 GW. <https://www.kmg.kz/rus/press-centr/press-relizy/?cid=0&rid=893>



Apart from the above measures forming the basis of LCDP, KMG has developed additional decarbonisation measures that could be promising for the Company's long-term low-carbon development strategy. These include:

- implementation of carbon capture and storage projects (CCS);
- hydrogen energy development;
- forest climate projects.

These projects could become new business areas for KMG in the long term, additionally contributing to reducing the Company's carbon footprint. KMG has therefore begun piloting the above business areas in the current period.

**Pilot projects will build the Company's potential and improve KMG's competitiveness in the long term.**

KMG is already working to develop and implement a pilot project to capture, store carbon dioxide (CCUS) and determine the potential for CO<sub>2</sub> injection to enhance oil recovery from depleted oil reservoirs, which in the medium-term until 2031 will allow to:

1. Reduce greenhouse gas emissions at KMG facility by capturing and reinjecting into depleted oil reservoirs or aquifers.
2. Test the technologies (analyse the results to develop the legislative and permitting framework of the Republic of Kazakhstan for implementation of carbon dioxide capture and storage (CCUS) projects and their further scaling).

This includes the screening of CO<sub>2</sub> emission sources in SDEs to identify potential sources, study and evaluate prospects for CO<sub>2</sub> injection to enhance the oil recovery in depleted oil reservoirs, research and development followed by design, construction and commissioning of a pilot facility (taking into account the specifics of the selected location). The preliminary stage of screening at KMG's assets is scheduled to be completed as early as 2023, allowing the first stage of the Project (Research and Design) to be implemented in 2024-2025.

To build up competence in this business area, in September 2021, JSC NC "KazMunayGas" and Shell Kazakhstan B.V. signed a Memorandum of Cooperation in development of carbon capture, utilisation and storage (CCUS) technology. The Memorandum stipulates a joint study of the potential for implementing a pilot project of using CCUS technology to identify and develop basic criteria for carbon capture and utilisation. The document aims to strengthen a long-term mutually beneficial partnership between the parties, as well as to support Kazakhstan's efforts to fulfil its commitment to reduce greenhouse gas emissions under the Paris Agreement. Pursuant to the signed document, Shell's technical experts intend to share the international experience in implementing similar CCUS projects.



Preparations are underway by KMG to develop hydrogen energy in Kazakhstan. As a result of this, it is planned to implement a pilot project on hydrogen mobility in Kazakhstan no later than 2023, which will test the technology and contribute to the legislative and permitting framework of the Republic of Kazakhstan in the field of hydrogen fuel.

In order to develop this business area, a Memorandum of Understanding was signed on 12 October 2021 with Air Liquide Munay Tech Gases LLP (a unit of Air Liquide), aimed at developing hydrogen initiatives in the transport sector.

This involves cooperation between the parties to build a hydrogen filling station (HFS) for hydrogen-powered vehicles. This technology will be introduced in Kazakhstan for the first time.

Air Liquide has expertise across the entire hydrogen supply chain, from production to storage, distribution and development of end-user applications. To date, the company has designed and installed more than 120 hydrogen filling stations around the world.

<https://www.kmg.kz/rus/press-centr/press-relizy/?cid=0&rid=890>

A Memorandum of Understanding was also signed on 29.10.2021 between JSC NC "KazMunayGas" and Linde Technology Company to implement promising hydrogen energy projects. The parties agreed to cooperate and jointly develop clean energy projects in Kazakhstan. The first stage of cooperation will explore the possibility of producing hydrogen and ammonia using natural gas as feedstock ('blue' hydrogen and 'blue' ammonia) and/or electrolysis water ('green' or 'blue' hydrogen and 'green' or 'blue' ammonia). Following a feasibility study and successful agreements, it is planned to implement a green hydrogen and green ammonia production project in Kazakhstan.

<https://www.kmg.kz/rus/press-centr/press-relizy/?cid=0&rid=897>



## CLIMATE CHANGE. GREENHOUSE GAS EMISSIONS

103-1, 103-2, 103-3, 305-1, 305-2, 305-4, 305-5, 305-6, 305-7

We make it our highest priority to minimise our impact on environment through compliance with environmental law, rational use of natural resources and continuous improvement of our environmental activities. Our priorities include careful and rational use of natural resources, minimisation of environmental risks. Target Programmes are intended to reduce raw gas flaring, develop green energy based on renewable energy resources and increase general energy efficiency.

KMG at the level of the corporate centre manages subsidiaries and dependent entities with regard to greenhouse gas and pollutant atmospheric emissions, monitors timely obtaining of all permits for operations, such as emissions permit, greenhouse gas quota, raw gas flaring permit.

Atmospheric air impact minimisation programmes include raw gas development and processing programmes for production sector, oil refineries upgrade programme, application of the latest available technologies in construction of new transportation facilities, etc. Gradual implementation of these programmes will result in reduced pollutant and greenhouse gas emissions into the air, increased beneficial use of raw gas.

KMG plans to implement projects based on natural solutions as part of LCDP. In particular, KMG has set a goal of developing forest climate projects with a total area of 2,000 ha. The company expects that the reforestation project should not only have a positive effect in combating carbon sequestration, but will also contribute to climate change adaptation measures.

KMG is currently planning to create a green area in Pavlodar, which will be located on the territory of the Pavlodar Forestry Institution. Today, the area is 7,533.0 hectares, including 4,532.0 hectares covered with forest. According to interstate standards for provision of the population with green planting, there should be 20 ha of forest per 1000 people living in the steppe zone (territory of Pavlodar Region).

Thus, the green area of Pavlodar with a population of more than 333 thousand people should be at least 6,670 ha. KMG plans to cover the existing deficit in the forest area with its project.

KMG Group has an Emissions Management Policy, which defines the main principles of atmosphere impact minimisation management:

1. Operating in strict compliance with the law and other Company commitments;
2. Observing the established pollutant emission standards and emission limits, greenhouse gas quotas;
3. Clear allocation of functions and duties, increased competence, training and awareness;
4. Regular accounting, inventory checks and monitoring of emissions;
5. Stopping regular flaring of raw gas during raw hydrocarbon production;
6. Activities to reduce greenhouse gas emissions and carbon footprint;
7. Management of carbon assets;
8. Continuous improvement of emissions management activities.

We adhere to the national legislation, best international standards, provisions of the Company's internal documents in the field of health and safety, environmental protection and other internal corporate documents, identify and assess environmental risks, ensure transparency and openness of our actions in the field of environmental protection.

We continue working on improvement of our production facilities' operations to reduce atmospheric air impact. We take active part in improvement of regulatory framework of the country, hold meetings of Emissions Management Working Group, participate in climate change forums, conferences, enhance our knowledge and skills to improve our abilities in implementing the emissions reduction strategy.

KMG Long-Term Development Strategy defines the following climatic priorities:

1. Managing the atmospheric greenhouse gas emissions;
2. Reducing routine flaring of associated petroleum gas;
3. Improving the emissions intensity rates per volume of production and increasing the energy efficiency;
4. Reducing methane leakage;
5. Increasing the funding of green projects.

The global trend to fight climate change is increasingly affecting companies around the world. KMG has approved a 2022-2031 Development Strategy that meets high safety standards and sustainable development principles. According to KMG's Development Strategy, low-carbon development to reduce the carbon footprint is one of the Company's main development areas.

In support of the government's decarbonisation initiative, KMG has developed and approved its 2022-2031 Low-Carbon Development Programme, which aims to reduce its carbon footprint by 15% versus 2019. Climate change issues are monitored at the strategic level by the Board of Directors, Health, Safety, Environment and Sustainability Committee of KMG's Board of Directors.

We aim to increase oil and natural gas production to meet the world's growing demand for energy, which is why we focus on activities to minimise adverse impact our operations have on the environment through compliance with the environmental law, rational use of natural resources and continuous improvement of environmental activities.

We plan to set long-term targets for air emission reduction considering the changes in the external environment and requests from stakeholders.

## Greenhouse Gas Emissions

305-1, 305-4, 305-3, 305-6



In 2021, the Carbon Disclosure Project published the Climate Questionnaire for 2020, which includes data on the amount of direct and indirect greenhouse gas emissions for all KMG assets, including subsidiaries in Romania and Georgia.

The calculation includes carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O). Data on direct greenhouse gas emissions are confirmed by conclusions of independent accredited organizations for each subsidiary. Information for 2021 will be disclosed in the CDP report in Q3 2022. We adhere to the principle of consistency and comparability in our disclosures. We are continually working to improve the completeness of our disclosures and expand the reporting areas for Scope 3 indirect emissions.

Direct greenhouse gas (CO<sub>2</sub>) emissions for 2021 for the KMG Group were 6.9 million tonnes of CO<sub>2</sub> (11.4 million tonnes of CO<sub>2</sub> Eq.), slightly higher than the 2020 level.

2021

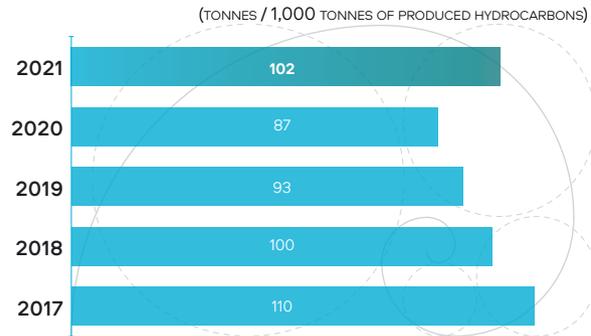
<b>Scope 1</b>				
<b>DIRECT EMISSIONS</b>				
<b>By activity areas</b>			<b>2019</b>	<b>2020</b>
				<b>2021</b>
Production	mln tn CO <sub>2</sub> eq*	3.8	4.1	4.3
Refining	mln tn CO <sub>2</sub> eq*	4.8	6.2	6.1
Transportation	mln tn CO <sub>2</sub> eq*	6.6	5.5	0.2
<b>By country</b>				
Kazakhstan	mln tn CO <sub>2</sub> eq*	14.2	14.9	9.9
Romania	mln tn CO <sub>2</sub> eq*	1.0	0.9	0.7
Georgia	mln tn CO <sub>2</sub> eq*	0.007	0.01	0.01
<b>Emissions by greenhouse gas types</b>				
CO <sub>2</sub>	mln tn CO <sub>2</sub>	9.7	8.7	6.9
CH <sub>4</sub>	mln tn CO <sub>2</sub> eq*	5.5	6.6	3.2
N <sub>2</sub> O	mln tn CO <sub>2</sub> eq*	0.02	0.5	0.5
<b>Scope 2</b>				
<b>INDIRECT EMISSIONS</b>				
	mln tn CO <sub>2</sub> eq*	3.4	3.5	Information to be disclosed in Q3 2022 in CDP climate questionnaire <a href="https://www.kmg.kz/rus/investoram/reporting-and-financial-result/">https://www.kmg.kz/rus/investoram/reporting-and-financial-result/</a>
<b>Scope 3</b>				
<b>PRODUCTION OF PURCHED MATERIALS</b>		mln tn CO <sub>2</sub> eq*	71.7	61.3

Direct greenhouse gas (CO<sub>2</sub>) emissions for 2021 for the KTG Group were 2.6 million tonnes of CO<sub>2</sub> (7.4 million tonnes of CO<sub>2</sub> Eq.), 24 % higher than the 2020 level.

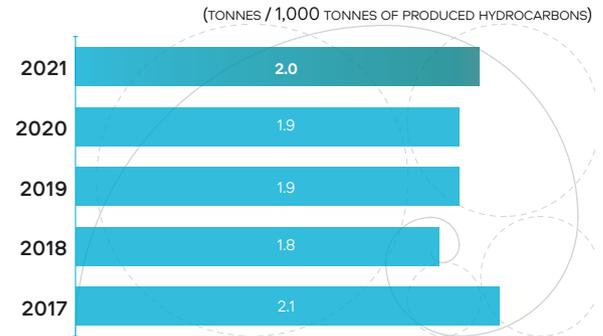
The CO<sub>2</sub> emission rate was 102 tonnes per 1,000 tonnes of hydrocarbons produced, which is 10 percent below the

industry average of 113 from the International Association of Oil and Gas Producers (IOGP).

**CO<sub>2</sub> EMISSION INTENSITY**



**CH<sub>4</sub> EMISSION RATE**



The increase in the intensity of greenhouse gas emissions is associated with a change in approaches to calculating greenhouse gas emissions.

In its activities, the Company does not emit ozone-depleting substances that affect climate change. Periodic control and monitoring are carried out. Climate change issues require identifying risks and taking measures to reduce the burden on the environment.

The corporate risk management system is a key component of the corporate governance system and is aimed at timely identification, assessment, monitoring and mitigation of potential risk events that could adversely affect the achievement of strategic and operational objectives. The Company takes into account the risks associated with climate change and strives to contribute to a sustainable future with the maximum possible reduction of environmental impact and greenhouse gas emissions at all stages of its operations. The corporate risk register has been expanded with a new climate change risk. We report quarterly to the Board of Directors on HSE risks..

Risks related to climate change	Risks related to low-carbon economy transition	<b>Political and regulatory risks</b> (e.g., introduction of carbon price fixing/increasing mechanisms to reduce greenhouse gas emissions; the country's transition to quota allocation by using only specific emission factors, resulting in some companies having shortage of quotas; reducing power consumption to reduce emissions; making energy-efficient decisions; reinforcing water use efficiency enhancement measures and promoting more sustainable land use methods).
		<b>Market risk</b> (risk of change in supply and demand for certain climate-related goods, products and services).
		<b>Technological risk</b> (development and use of new technologies such as RES, energy efficient technologies, BATs, carbon capture and storage technologies and other decarbonisation technologies).
	Risks related to physical climate change impact	<b>Reputational risks</b> associated with stakeholders changing a perception of the Company in terms of its contribution to transition to low-carbon economy or avoiding such transition.
<b>Short-term risks</b> caused by extreme weather events such as cyclones, hurricanes, floods.		
		<b>Systematic (chronic) risks</b> caused by long-term climatic model changes (e.g., long periods of abnormally high temperatures, raising sea level and waterlogging of onshore wells).

## ENERGY EFFICIENCY IMPROVEMENT AND ENERGY SAVING

### Use of Energy Resources and Improvement of Energy Efficiency

103-1, 103-2, 103-3

KMG continues its energy saving and energy efficiency improvement programme across KMG Group. KMG's Corporate Centre collects and analyses energy consumption and energy efficiency data, monitors the progress and identifies areas for improvement, performs a benchmarking against the previous period and the performance of peers (IOGP).

The Company's activities in the field of energy saving and energy efficiency are based on the methods of ISO 50001 Energy Management Systems, which are the best generally recognised international practices for system management in this area.

2021

### Energy Consumption

302-1, OG3

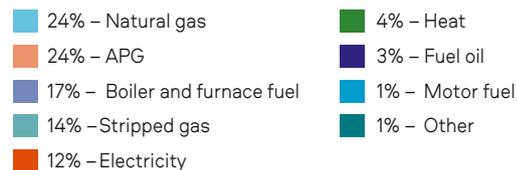
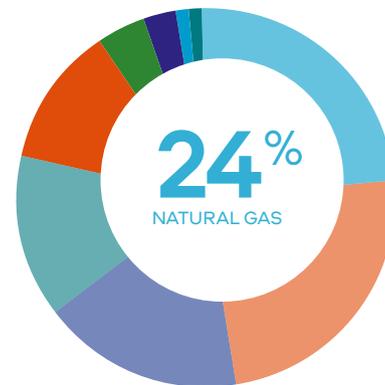
A total of 118.0 mln GJ<sup>3</sup> of fuel and energy resources was consumed in 2021 (1% more than in 2020), including 12.8 mln GJ of electricity, 4.3 mln GJ of heat, 1.2 mln GJ of motor fuel and 99.7 mln GJ of boiler and furnace fuel (with natural gas accounting for 24% and APG for 24% of total energy consumption). The energy consumption is distributed among three business areas: Upstream, Midstream and Downstream.

In 2021, own generated energy across KMG Group amounted to 466.8 mln kW of electricity and 3,985 thousand Gcal of heat.

The application of innovative technologies and use of RES is a relatively new but nevertheless promising area in the oil and gas industry.

In 2021, in accordance with the RES Support Tariff Setting Rules, Atyrau Refinery and MMG purchased electricity in the amount of 7,264 thous. kW for own needs, produced by renewable energy facilities from Financial Settlement Centre for Support to Renewable Energy Sources LLP. Electricity generated by PKOP solar panels for street lighting in the territory in 2021 was 47,000 kWh.

#### ENERGY CONSUMPTION BY FUEL TYPE, %



Note: consumption in KTG for 10 months of 2021 was 48.45 mln GJ of fuel and energy resources, including 0.26 mln GJ of electricity, 0.26 mln GJ of motor fuel and 47.9 mln GJ of natural gas.

<sup>3</sup> taking into account KTG, energy consumption data for 2021 amounted to 166.4 million GJ

## Energy Consumption Outside the Organisation

302-2

We are currently keeping records of energy consumption only within the organisation, so the report does not cover the energy consumption outside the organisation.

## Reduction of Energy Consumption

302-4

The main strategic areas of energy saving and energy efficiency development in KMG Group are upgrading of process equipment, introducing energy saving technologies, optimising heating energy generation and consumption as well as developing own generation sources, including those using APG.

49 energy saving and energy efficiency measures were implemented in 2021, the planned annual saving of fuel and energy resources amounted to 0.34 mln GJ, in physical terms – 5.3 mln kWh of electricity and 8,107 thous. m<sup>3</sup> of natural gas.

## Energy Intensity

302-3

In 2021, KMG Group's average specific energy consumption for hydrocarbons production was 2.4 GJ per tonne of produced HCs, which is still 58% higher than the figure of the International Association of Oil & Gas Producers (IOGP), which in 2020 was 1.4 GJ per tonne of produced hydrocarbons. The increase in specific energy consumption in oil production is primarily due to the increasing water cut in mature fields, as the specific density of produced liquid increases just as the energy required for mechanical methods of production.

OG3

### CASE STUDY

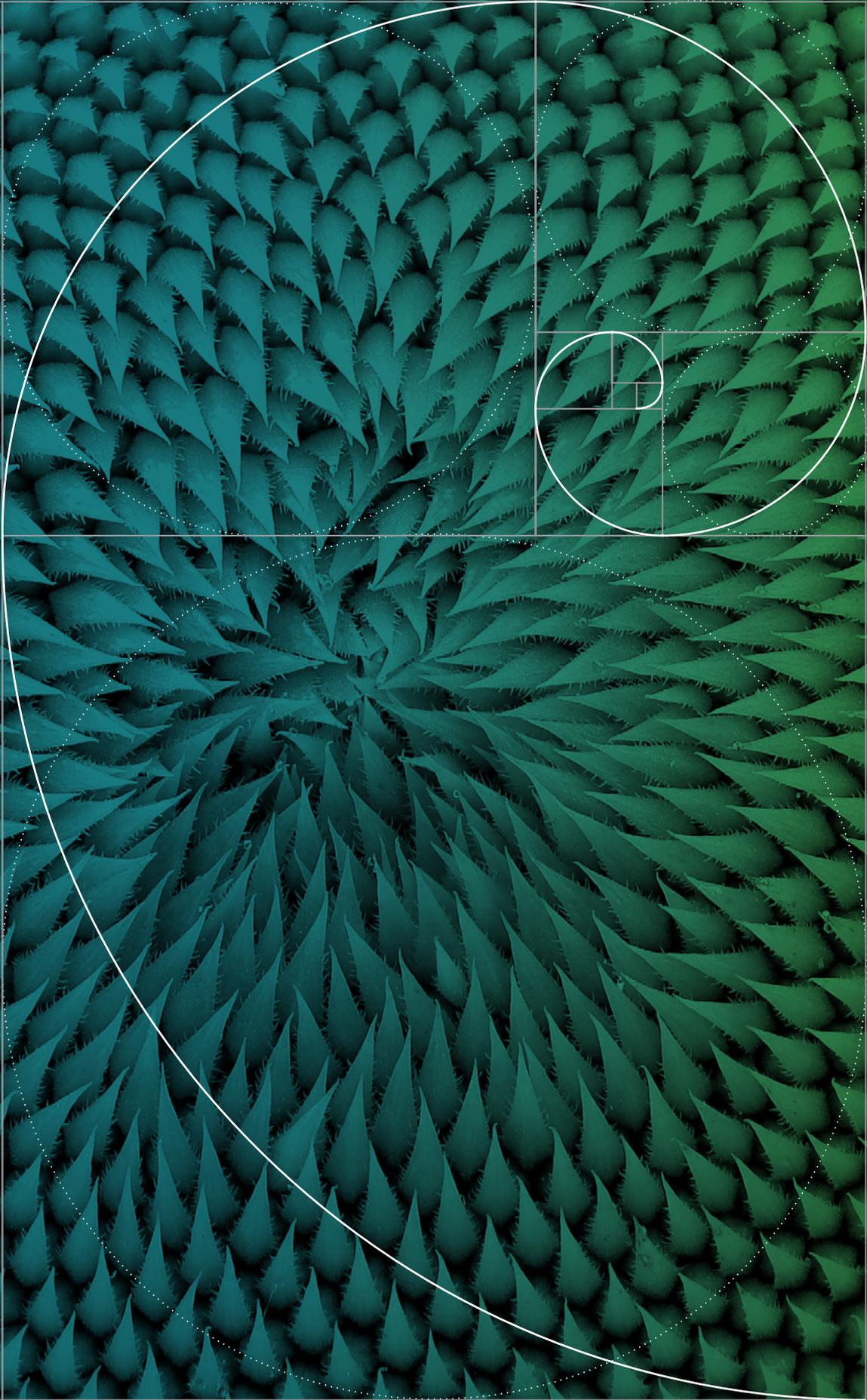
REs introduced at KTG have been effectively operating, with the total volume of renewable energy generated (produced) in 2021 by KTG Group broken down by source:

- Geothermal (heat) energy generated by heating pumps in 2021 – 678.54 Gcal. Waterkotte geothermal heat pumps for heating and domestic hot water (DHW) are in operation at Intergas Central Asia JSC.
- Electricity generated by KTG's solar panels in 2021 amounted to 109,068 kWh.
- Electricity generated by solar panels for lighting the area of the Engineering Centre of ICA JSC – 7,776 kWh.
- Electricity generated by solar panels installed at the pig launchers of Terenuzyak and Zhosaly AGDS gas pipeline branches of Kyzylorda MGPD – 5,092 kWh.
- Electricity generated by solar panels installed at valve stations in the linear segment of the Kazakhstan-China Trunk Gas Pipeline – 96,200 kWh.

Electricity generated by PKOP solar panels for street lighting in the territory in 2021 was 47,000 kWh.

2021

# SUSTAINABLE DEVELOPMENT MANAGEMENT





- 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 4 Businesses should eliminate all forms of forced and compulsory labour
- Principle 6 Businesses should uphold the elimination of discrimination in respect of employment and occupation
- Principle 8 Businesses should undertake initiatives to promote greater environmental responsibility
- Principle 10 Businesses should work against corruption in all its forms, including extortion and bribery



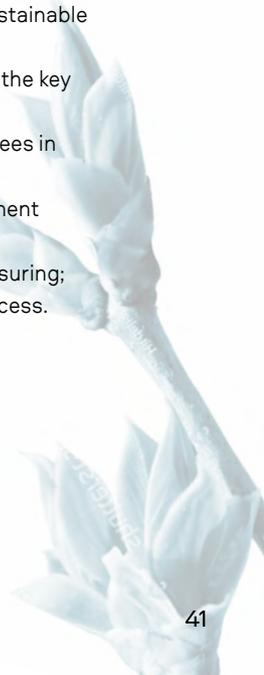
# OUR APPROACH TO SUSTAINABLE DEVELOPMENT MANAGEMENT

102-15, 103-1, 103-2, 103-3, 201-2

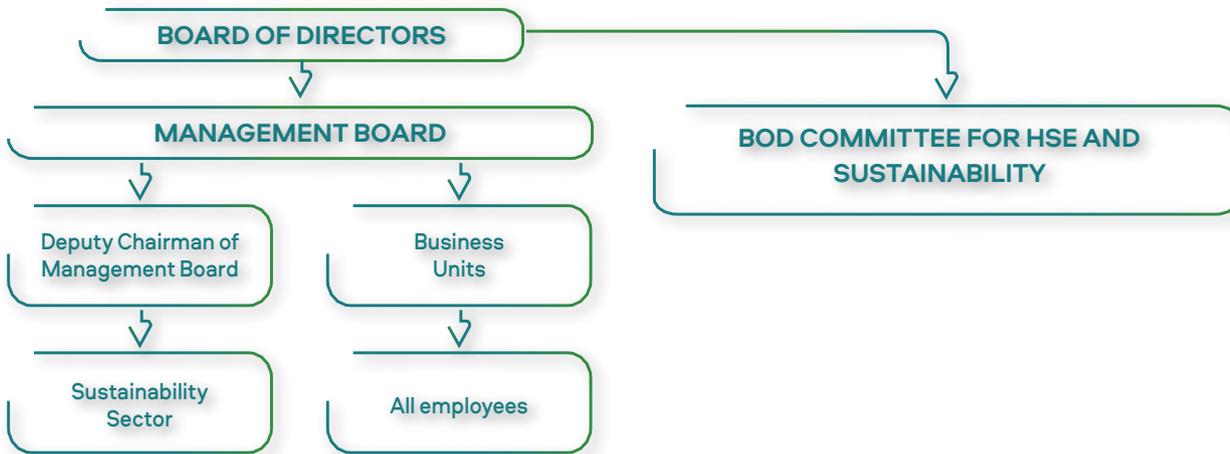
Our approach to managing the sustainable development aspects is based on implementation of the following sustainable development principles:

- OPENNESS
- ACCOUNTABILITY
- TRANSPARENCY
- ETHICAL CONDUCT
- RESPECT FOR STAKEHOLDERS' INTERESTS
- LAWFULNESS
- RESPECT FOR HUMAN RIGHTS
- INTOLERANCE OF CORRUPTION
- NO CONFLICTS OF INTEREST
- PERSONAL EXAMPLE

- KMG is committed to building an effective sustainability management system that includes the following elements:
- commitment to the sustainable development principles at all the management levels;
  - analysis of the external and internal situation in terms of the three sustainable development aspects – economic, environmental and social;
  - determination of sustainable development risks in economic, environmental and social spheres;
  - stakeholder engagement and building a stakeholder map;
  - definition of goals and KPIs of sustainable development;
  - realisation of priority areas (initiatives) of sustainable development;
  - integration of sustainable development into the key business processes;
  - advanced training of the Company's employees in sustainable development;
  - organisation of annual sustainable development reporting process;
  - sustainable development performance measuring;
  - upgrading the sustainable development process.



## SUSTAINABLE DEVELOPMENT MANAGEMENT IN KMG



**KMG's Board of Directors** provides strategic guidance and oversight for implementation of sustainable development principles and achievement of SDGs. It approves the consolidated annual Sustainability Report of the Company.

**KMG BoD Committee for HSE and Sustainability** considers and manages sustainability issues, the status of SDG achievement, prepares recommendations for approval of the sustainability policy, annual KMG Sustainability Report, action plans and other internal documents on sustainability, the approval of which falls under the authority of BoD, implementation of social, economic and environmental components of sustainability, formation of a sustainability management system, setting sustainable development goals and KPIs, monitoring the implementation of sustainability in KMG, integrating sustainability into KMG's key processes.

**KMG's Management Board** ensures proper implementation and integration of sustainability principles, policies, standards and action plan in the Company. It monitors sustainable development activities, evaluates the achievement of sustainable development targets and KPIs and SDGs.

**Deputy Chairman of KMG's Management Board**, who oversees the sustainability issues, coordinates approaches to achieving sustainability goals and KPIs for sustainability initiatives and oversees implementation of corporate sustainability standards, preparation of the sustainability report and achievement of SDGs.

**The Sustainability Sector of KMG's Strategy and Portfolio Management Department** is responsible for initiation, coordination and implementation of the sustainability management system and SDGs achievement, assistance in its integration into the Company's business processes, methodological support in sustainable development issues, annual preparation and approval of the Sustainability Report, assistance to responsible business units in identifying and managing the sustainable development risks, in developing a stakeholder map and engagement mechanisms, as well as training in sustainable development.

**KMG's Business Units** implement the sustainability system, implement initiatives to achieve SDGs, analyse the internal and external situation, identify sustainable development risks, develop a stakeholder map and engagement mechanisms, implement sustainable development initiatives and prepare information for the Sustainability Report in accordance with international standards.

**All KMG employees**, each at their own level, implement the sustainability and SDG achievement principles and measures through personal behaviour and compliance with relevant policies and standards.

In its Development Strategy, KMG has defined the Sustainable Development and gradual reduction in carbon intensity of operations as one of the strategic goals aimed at integrating the sustainability principles into key business processes, operations and decision-making.

The strategic goal of sustainable development and reducing carbon intensity of operations should result in creation of a sustainability management system that ensures achievement of high ESG performance, improving the quality of stakeholder relations, implementing of measures to reduce greenhouse gas emissions under tightening carbon regulation, and implementing of social projects to provide water to the regions of operation.

We continue to integrate the ESG criteria into our operations, which are a prerequisite for improving our sustainability performance management and understanding of key ESG risks and opportunities.

**We are taking a comprehensive and systematic approach to integrating ESG principles into our operations, thus the following progress was made in 2021:**

- For the second year in a row, we have successfully passed an independent assessment by Sustainalytics, an international rating agency. KMG's ESG rating was upgraded from 69 to 72 and ESG risk rating was significantly reduced from 34.5 (high risk level) to 28.4, a medium risk level.
- Independent audit of Samruk-Kazyna's corporate governance rating has been completed. As a result of the audit, KMG's Sustainable Development rating has been upgraded from B (2018) to BBB (2021).
- In order to improve the Company's sustainability performance, KMG's Board of Directors for the first time approved ESG rating as a corporate KPI for 2021. Approved KPI targets have been achieved. In 2021, KMG's department directors' KPIs were supplemented with indicators related to the approval of the action plan and targets until 2030 for reduction of pollutant emissions, greenhouse gases, water saving and energy saving across KMG Group.

- The annual **Sustainable Development Meeting of KMG's Board of Directors** was held on 7 June 2022. It discussed sustainable development priorities: plans and objectives of the Low-Carbon Development Programme of JSC NC "KazMunayGas", the status of introducing the priority Sustainable Development Goals in JSC NC "KazMunayGas", and annual sustainable development reporting. Issues discussed at the annual special sustainable development meetings are very significant for the Company and help to focus attention on topical sustainable development issues and the associated challenges.
- **The implementation of sustainability system is regularly reviewed by the Health, Safety, Environment and Sustainability Committee of the Board of Directors.** In general, five meetings of the Committee were held in 2021, where 52 issues were addressed, with 115 decisions and assignments developed following the meetings of the Committee. In 2021, the Committee was mainly focused on health, safety and environment, strategic management of the ESG (Environmental – Social – Governance) aspects, and implementation of a sustainable development system.
- To reaffirm our commitment to the sustainable development principles:
  - **The Company's new Environmental Policy** has been approved;
  - **An Action Plan to improve KMG's ESG rating** has been developed and approved;
  - **A Low Carbon Development Project Office** has been established to develop KMG's own decarbonisation approaches;
  - **The Company's Low-Carbon Development Programme** has been developed and approved.
- There is a strong emphasis on enhancing a sustainable development culture. Sustainable development training is conducted on a regular basis for employees of the corporate centre and SDEs.



## CASE STUDY

With the support of Total Foundation, IFP (French Oil Institute) launched the third series of the Massive Open Online Course (MOOC), which focused on “Energy Transition: Innovation Towards a Low-Carbon Future”. The course offered high-quality digital training and free certification. The training lasted 5 weeks.

The aim of the online course was to understand the technical concepts and innovative challenges of combining decarbonised energy aimed at reducing the climate impact associated with global warming.

35 employees of KMG also took part in the training course. The participants received certificates at the end of the course.



## CASE STUDY

In December 2021, the employees of JSC NC “KazMunayGas” were trained in sustainable development of the company and practical tools for project portfolio implementation and assessment. The training was conducted by Oksana Klimenko, an international project management expert, Vice-President of the International Project Management Association (IPMA) and Executive Director of the Green Project Management global organisation in Russia and the CIS.

During the programme based on the Green Project Management Global methods, participants learned about the sustainability concept as applied to company’s project portfolio management, were introduced to best practices in applying the sustainability concept to projects, programmes and portfolios, and learned practical tools to assess, reduce risks and improve project success.

The programme focused on project portfolio selection and assessment methods based on the international GPM P5TM standard and the application of GPM PRISM™ (Projects integrating Sustainable Methods), GPM 3600 project evaluation models and GPM PSM3™ organisation.

The GPMP5™ (People, Planet, Prosperity, Products and Processes) standard is the world’s only method that incorporates sustainable development principles and tools into project, programme and portfolio management. The standard brings together more than 100 project and process indicators to ensure that sustainable development goals are met, both in the project and in the subsequent operation of the created product.



## IDENTIFICATION OF MATERIAL TOPICS OF THE REPORT

102-47

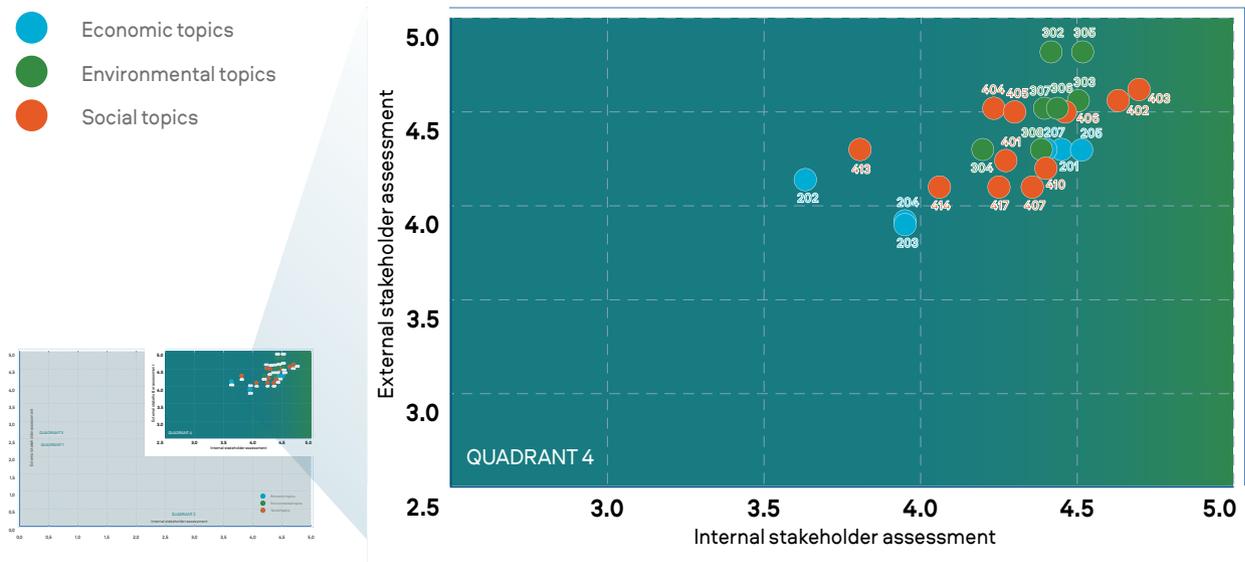
To assess and disclose the material topics, the Report analysed information on both external and internal stakeholders. Based on the performed procedures, a materiality matrix was built from 24 potential topics.

### Distribution of weights in the material topics assessment structure

The results of internal and external indicators on the horizontal and vertical axes of the matrix, respectively, were used to build the matrix. The rating scale used in the matrix ranges from 1 to 5 points.

Online stakeholder survey was prepared on the basis of Google Forms platform. The representatives of shareholders, KMG CC, SDEs, suppliers, associations, local state bodies, banks, partners and clients participated in the questionnaire survey. Each sustainable development topic was suggested to be rated on a scale from 1 to 5 according to the level of importance, where 1 means “unimportant”, 2 – “slightly important”, 3 – “moderately important”, 4 – “relatively high importance”, 5 – “highest or critical importance”.

The materiality matrix of 24 topics is given below.



This matrix is divided into 4 conditional zones (quadrants) according to the level of importance of the topics as presented below.

- **Quadrant 4** – most important topics (external and internal stockholders’ score > 2.5);
- **Quadrant 3** – topics important for external stakeholders, but less important for internal stakeholders (external stakeholders’ score > 2.5, and internal stakeholders’ score < 2.5);
- **Quadrant 2** – topics important for internal stakeholders, but less important for external stakeholders (external stakeholders’ score < 2.5, and internal stakeholders’ score > 2.5);
- **Quadrant 1** – least important topics (external and internal stockholders’ score < 2.5).

## LIST OF MATERIAL TOPICS

### ECONOMIC TOPICS

1	<b>GRI-201</b>	Economic Performance
2	<b>GRI-202</b>	Market Presence
3	<b>GRI-203</b>	Indirect Economic Impacts
4	<b>GRI-204</b>	Procurement Practices
5	<b>GRI-205</b>	Anti-Corruption
6	<b>GRI-207</b>	Taxes

### ENVIRONMENTAL TOPICS

1	<b>GRI-302</b>	Energy
2	<b>GRI-303</b>	Water and Effluents
3	<b>GRI-304</b>	Biodiversity
4	<b>GRI-305</b>	Emissions
5	<b>GRI-306</b>	Waste
6	<b>GRI-307</b>	Environmental Compliance
7	<b>GRI-308</b>	Environmental Assessment of Suppliers

### SOCIAL TOPICS

1	<b>GRI-401</b>	Employment
2	<b>GRI-402</b>	Labour Relations
3	<b>GRI-403</b>	Occupational Health and Safety
4	<b>GRI-404</b>	Employee Training
5	<b>GRI-405</b>	Diversity and Equal Opportunity
6	<b>GRI-406</b>	Non-Discrimination
7	<b>GRI-407</b>	Freedom of Association and Collective Bargaining
8	<b>GRI-410</b>	Safety Practices
9	<b>GRI-413</b>	Local Communities
10	<b>GRI-414</b>	Social Assessment of Suppliers
11	<b>GRI-417</b>	Marketing and Informing about Products and Services

# STAKEHOLDER ENGAGEMENT

102-40, 102-42, 102-43

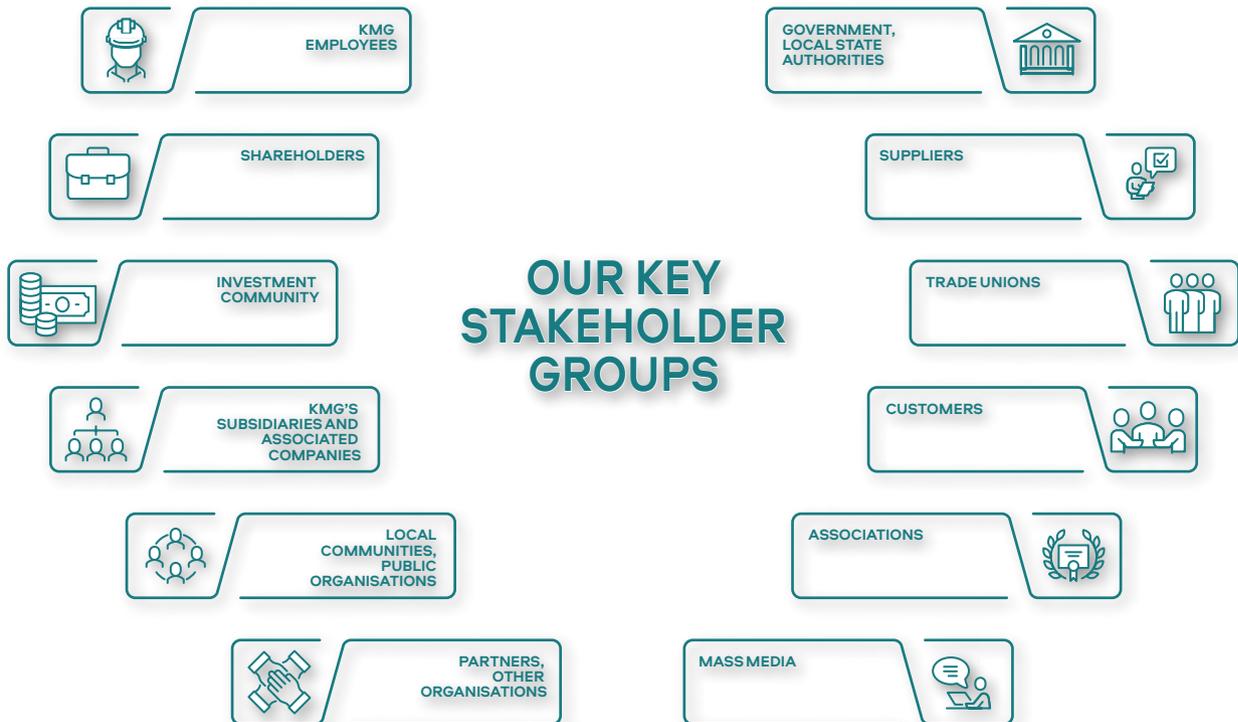
We seek to ensure high openness and transparency of our activities by implementing the principle of active dialogue with stakeholders. We annually disclose information about all existing aspects of the Company’s performance. This helps us to maintain the balance between economic, social and ecological aspects of our activities.

KMG implements the full operating cycle from exploration and production of hydrocarbons, their transportation and refining to sale of oil and oil products both in Kazakhstan and abroad, and represents the state interests in the oil and gas sector. Having a complicated structure and various activities, KMG is interacting with a wide range of stakeholders.

## Definition of Stakeholders

KMG is constantly making efforts to build up a dialogue and long-term cooperation, and manage relations with its stakeholders.

KMG has an approved Stakeholder Map, which takes into account the risks and rankings based on dependence (direct or indirect), obligations, the situation (with a particular focus on high-risk areas), influence, and various prospects. To ensure effective achievement of the goals, Stakeholder Engagement Plans are developed.



## STAKEHOLDER ENGAGEMENT METHODS INCLUDE:

Engagement level	Engagement methods
<b>Consultations:</b> bilateral interaction; stakeholders answer questions of the organisations	Questionnaires; focus groups; meetings with stakeholders; public meetings; workshops; feedback using communication means; advisory boards
<b>Negotiations</b>	collective negotiations based on social partnership principles
<b>Involvement</b> Bilateral or multilateral interaction; build-up of expertise and knowledge on all sides; the stakeholders and organisations act independently	Multilateral forums; advisory panels; consensus achievement procedure; joint decision-making procedure; focus groups; feedback mechanisms
<b>Cooperation</b> Bilateral or multilateral interaction; joint build-up of expertise and knowledge, making decisions and taking measures	Joint projects; joint ventures; partnership; joint stakeholders' initiatives
<b>Authorisation</b> stakeholders (if applicable) participate in management	Integration of stakeholder engagement in management, strategy and operations

2021

When defining stakeholders and stakeholder engagement, KMG applies the best stakeholder engagement practices, including international standards, such as AA1000SES Stakeholder Engagement Standard.

## INITIATIVES AND MEMBERSHIPS

102-12, 102-13

### Initiatives



#### The World Bank Initiative “Complete cessation of regular flaring of APG by 2030”

KMG supported this initiative in 2015. It unites governments, oil companies and development organisations that are ready to cooperate to stop the practice of regular associated petroleum gas (APG) flaring by 2030. Our goal is to increase the beneficial use and

disposal level of APG, to minimise flaring. We submit annual progress reports to the World Bank.



#### Global Methane Initiative

KMG supports the Global Methane Initiative (GMI) and regularly discloses its environmental activities to all stakeholders in the Sustainability Report. In 2017, as part of its methane emission reduction activities, KMG joined the GMI Project Network, which is a growing community of private sector entities, financial institutions, and other governmental and non-governmental organisations interested in methane emission reduction projects, and in methane recovery and use.



### CDP Climate Programme

In 2021, KMG published a 2020 Greenhouse Gas Emissions Report as part of the CDP (Carbon Disclosure Project) Climate Programme. The Report contains data on direct and indirect greenhouse gas emissions for all KMG assets, including subsidiaries in Romania and Georgia. For the first time, the CDP Water Security Questionnaire for 2019 was published.



### Environmental Responsibility Rating of Oil and Gas Companies in Kazakhstan



As a result of its efforts to improve environmental performance, and to achieve openness and transparency in this area, for the fifth consecutive year, KMG has been ranked first in the Environmental Data Transparency Rating among oil and gas companies in the Republic of Kazakhstan based on the assessment of independent experts of the World Wildlife Fund (WWF), Creon Group and ACRA rating agency.

The Company continues to pursue the path of environmentally responsible business, developing its environmental management system and engaging in dialogue with all stakeholders on this issue, thereby fulfilling its obligations reflected in the Company's Environmental Policy.

### Caspian Environmental Protection Initiative (CEPI)

In September 2020, the Memorandum of Understanding was signed in Baku between JSC NC "KazMunayGas", the state oil company of the Azerbaijan Republic, BP

Exploration (Caspian Sea) Limited, Equinor Apsheron AS and TOTAL E&P Absheron B.V. The Memorandum involves creation of Caspian Environmental Protection Initiative. The main goals of the Initiative will be creating the first platform for environmental protection and joint research of international oil companies operating in the region. Activities of the participating companies will be aimed at active joint efforts in order to resolve climate change problems threatening the Caspian Region's ecological stability and prevent environmental emissions of greenhouse gases and harmful substances. KMG participated in a number of CEPI meetings in 2021.



### Oil Spill Preparedness Regional Initiative (OSPRI)

The Initiative is aimed at assistance and support of oil industry and the regional government in joint work contributing to making the accepted, reliable, integrated and sustainable national, regional and international decisions regarding oil spill response. The initiative is implemented through IPIECA, the global oil and gas industry association for ecological and social issues ([www.ipieca.org](http://www.ipieca.org)). For IPIECA, OSPRI is the regional means of implementing the international efforts on assistance to Oil Spill Preparedness, in close cooperation with International Marine Organisation (IMO – [www.imo.org](http://www.imo.org)) and other international organisations.



### Initiative of Engagement with Republican Public Association "Oil & Gas Industry Veterans" (VNGK)

The mission of RPA "Oil & Gas Industry Veterans" is creating the conditions for interactive communication of industry veterans, meeting their professional and amateur interests aimed at development of the oil and gas industry, using their potential and experience in operations, active participation in the life of society, transferring their life and professional experience to the younger generation of oil workers.

In 2021, a Memorandum of Understanding and Cooperation was signed between JSC NC "KazMunayGas" and RPA "Oil & Gas Industry Veterans". It was agreed in the Memorandum to utilise the practical experience, scientific, technical and intellectual potential of oil & gas

industry veterans. The Expert Council of oil & gas industry veterans of JSC NC “KazMunayGas” has been established. The key objectives of the Council are developing the recommendations for implementation of KMG’s strategic programmes in the field of technological and digital development of the oil and gas industry, discussing public initiatives related to oil and gas industry development, participating in developing expert recommendations for the regulatory framework of the oil and gas industry, preparing expert opinions on issues significantly affecting the operations of KMG, providing analytical, expert, informational and advisory support in the operations of KMG.

## Membership



### National Chamber of Entrepreneurs of the RoK “Atameken”

KMG and the National Chamber of Entrepreneurs of the RoK “Atameken” entered into an agreement on cooperation in legal matters.

The agreement provides for interaction of the parties in such important legal areas as improvement of legislation,

development of joint programmes and projects aimed at raising legal culture, expanding the role of arbitration in resolution of commercial disputes, etc.



### Kazakhstan Association of Oil, Gas and Energy Sector Organisations “KAZENERGY”

The KMG management is involved in the activities of several committees and working groups of the Association.

The chairmanship in the Coordination Council of KAZENERGY for ecology, social responsibility and transparency is an opportunity for KMG to promote sustainable development in the oil and gas sector of Kazakhstan.

KMG and Kazakhstan Association of Oil, Gas and Energy Sector Organisations “KAZENERGY” have entered into a Memorandum of Cooperation.

The Memorandum provides for joint activities in such key legal areas as improvement of the RoK legislation; development of joint programmes and projects aimed at raising legal culture; cooperation in holding round tables, seminars, conferences on topical issues in the legal field, etc.





### The UN Global Compact

Our membership in the UN Global Compact and the annual posting of the Sustainability Report on the UNGC website to show KMG's progress in promoting the principles of the Global Compact and 17 Global Sustainable Development Goals clearly demonstrate our commitment to the principles of sustainable development.



### International Association of Oil and Gas Producers IOGP

Since 2018, KMG has been a full member of the International Association of Oil and Gas Producers. Our HSE statistics will be publicly available, and our performance indicators will be compared to those of more than 75 oil and gas companies worldwide. Our goal is to be among Top 20 companies on this list.



### Kazakhstan Association of Regional Environmental Initiatives "Ecojer"

A number of KMG subsidiaries and associated companies joined the Kazakhstan Association of Regional Environmental Initiatives "Ecojer" at the end of 2021. The goal of the Association is to consolidate the business community and civil society to represent and defend common interests and promote environmental protection activities based on a balanced approach between public policy areas, the concerned public and the need to develop economic potential.



### International association for emergency oil spill response, Oil Spill Response Limited (OSRL)

Oil Spill Response Limited (OSRL) is a British company established in 1985 and specializing in oil spill response and offering its services worldwide. More than a hundred world companies are members of the OSRL. The Company pays primary attention to prevention and removal of oil contaminations not only offshore but also in coastal areas.

## CASE STUDY

### KMG RANKS FIRST IN TOP 50 OF PWC KAZAKHSTAN'S ESG DISCLOSURE RATING

For the second consecutive year, JSC NC "KazMunayGas" ranks first among the top 50 companies in disclosure of non-financial information in corporate reports. The rating was prepared by PwC Kazakhstan and included 96 companies. The survey assessed the quality and availability of ESG information in annual reports and sustainability reports of Kazakh companies published in 2021. The purpose of the rating is to assess how Kazakh companies disclose ESG information, identify best practices and provide recommendations for further development. The rating methodology includes 76 criteria. A score is given for each criterion (from 1 to 10). The assessment criteria included such disclosures units as sustainable development management, social policy, environmental impacts and corporate governance. Additional points were awarded for the clarity and quality of presented information. "The quality of ESG disclosure in the reports of Kazakh companies continues to improve. The most notable quality improvement of disclosures is in Sustainable Development Management unit, where the description of ESG policies and approaches and sustainable development strategy disclosures were rated. The Companies more often follow the international initiatives. More companies said they support the UN Sustainable Development Goals (46% in 2020 versus 30% in 2019)," PwC Kazakhstan said in its report.

To see the rating, please visit  
<https://www.pwc.com/kz/en/assets/pdf/top-50.pdf>



## CASE STUDY

### KASE AWARDED THE ORGANISATIONS FOLLOWING THE 2020 ANNUAL REPORT COMPETITION

The Kazakhstan Stock Exchange (KASE) held an awards ceremony on 15 March 2022 for companies following the 2020 annual report competition. Joint-Stock Company "National Company "KazMunayGas" won in the Best 2020 Sustainability Report category

<https://kase.kz/ru/news/show/1478877/>

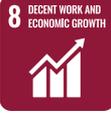
## ABOUT THE COMPANY'S CONTRIBUTION TO ACHIEVING SDGS

Based on KMG's strategic goals, the Company has identified 6 UN Sustainable Development Goals and 14 objectives as priorities. The goals and objectives align with strategic and business initiatives implemented in KMG.

Their implementation determines the Company's contribution to achievement of the UN's global Sustainable Development Goals [https://www.kmg.kz/eng/ustoichivoe\\_razvitie/nash\\_podhod/](https://www.kmg.kz/eng/ustoichivoe_razvitie/nash_podhod/)

### IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT GOALS IN KMG

SUSTAINABLE DEVELOPMENT GOALS	PRIORITY OBJECTIVES	KMG'S CONTRIBUTION
 <p><b>ENSURE HEALTHY LIFESTYLE AND PROMOTE WELL-BEING FOR ALL AT ALL AGES</b></p>	<p>3.6. Halve the global number of deaths and injuries from road traffic accidents by 2020</p>	<p><b>Travel Management Project</b></p> <p>In order to improve transport safety, create a culture of safe driving and a unified centralised digital platform, a Travel Management Project was piloted at Embamunaygas JSC, which is to be replicated at other subsidiaries and associated companies of KMG in 2022.</p> <p><b>Result</b></p> <p>418 vehicles of Embamunaygas JSC are monitored via GPS terminals for speeding, driver seatbelt use, headlight use, sudden acceleration and braking.</p>
	<p>3.8. Ensure universal healthcare coverage, including financial risk protection, access to high-quality essential health services and access to safe, effective, high-quality and affordable essential medicines and vaccines for all</p>	<p><b>Personnel health management</b></p> <p>KMG will establish a Personnel Health Management Programme to take care of the health and quality of life of employees, focusing on three main areas:</p> <ul style="list-style-type: none"> <li>Dealing with the pandemic and its aftermath.</li> <li>Preventing occupational diseases.</li> <li>Raising employee awareness and motivation for a healthy lifestyle</li> </ul> <p><b>10 Steps to Rehabilitation Initiative</b></p> <p>The programme is primarily aimed at increasing the physical activity and eliminating the unhealthy eating habits.</p> <p><b>Result</b></p> <p>100% of KMG's employees are covered by the Health Insurance Programme and vaccination opportunities.</p>
	<p>3.9. Significantly reduce the number of deaths and illnesses caused by exposure to hazardous chemicals and air, water and soil pollution and poisoning by 2030</p>	<p>A Code of Leadership and Employee Commitment to Health, Safety and Environment (HSE) Compliance is implemented and enforced.</p> <p>The Korgau Map aims to identify and report unsafe condition/unsafe behaviour/unsafe action/hazard.</p> <p><b>Result</b></p> <p>No deaths or illnesses due to exposure to hazardous chemicals and air, water and soil pollution and poisoning were reported in 2021.</p> <p>For more information, see the <a href="#">Occupational Health and Safety section</a>.</p>

SUSTAINABLE DEVELOPMENT GOALS	PRIORITY OBJECTIVES	KMG'S CONTRIBUTION
 <p><b>7</b> AFFORDABLE AND CLEAN ENERGY</p> <p><b>PROVIDE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL</b></p>	<p>7.1. Provide access to affordable, reliable and modern energy supply for all by 2030</p> <p>7.b. By 2030, expand the infrastructure and upgrade the technologies for modern and sustainable energy supply to all in developing countries, particularly in the least developed countries, small island developing states and landlocked developing countries, taking into account their respective support programmes</p>	<p>The main strategic areas of energy saving and energy efficiency development in the Group are upgrading of process equipment, introducing energy saving technologies, optimising heating energy generation and consumption as well as developing own generation sources, including those using RES.</p> <p>A Low Carbon Development Programme until 2031 has been approved</p> <p><b>Development of RES projects:</b>            MW-class RES projects;            RES projects for use in the public utility sector;            RES projects integrated into the process cycle;            Purchase of green energy.</p> <p><b>Result</b>            2031:            100% coverage of SDEs by energy management services            Reduction of energy intensity by 10% versus 2019            15% share of RES in KMG's electricity mix</p> <p>For more information, see the <a href="#">Low Carbon Development Programme section</a>.</p>
 <p><b>8</b> DECENT WORK AND ECONOMIC GROWTH</p> <p><b>PROMOTE STEADY, COMPREHENSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL</b></p>	<p>8.5. By 2030, ensure full and productive employment and decent work for all women and men, including young people and persons with disabilities, and equal pay for work of equal value</p> <p>8.6. By 2020, substantially reduce the share of young people who are not working, studying or acquiring vocational skills</p> <p>8.8. Protect labour rights and promote safe and secure working conditions for all workers, including migrant workers, especially migrant women, and those without secure employment</p>	<p><b>Project of a Multifunctional Shared Service Centre for JSC NC "KazMunayGas" Group</b></p> <p>Aims to improve productivity (cost reduction, customer satisfaction (quality, time), transparency, manageability, reliable data analytics) across KMG Group by moving common support processes out of individual KMG Group companies and into a single service centre for execution.</p> <p>KMG's business disposes of routine and duplicate functions and focuses on core processes with high added value.</p> <p><b>Result</b>            2024: functions of 26 KMG companies transferred to SSC</p> <p><b>Zhas Orken</b></p> <p>KMG Group has a Zhas Orken young specialists rotation programme in place. The aim of Zhas Orken Programme is developing talented young people in Kazakhstan.</p> <p><b>Result</b>            During the programme implementation, 61 young specialists were rotated under the Zhas Orken Programme in KMG Group, 15 of whom were employed; 18 young specialists, including current students, passed the Digital Summer Programme; 3 programme graduates were employed.</p> <p><b>Standard Social Assistance Regulations</b></p> <p>Standard Social Assistance Regulations</p> <p>Social assistance to employees of KMG's SDEs is defined in their collective agreements and social assistance regulations. Standard Social Assistance Regulations for Employees of KMG SDEs were adopted in order to unify the types and standards of social assistance across all KMG companies.</p> <p>For more information, see the <a href="#">Personnel Development section</a>.</p>

SUSTAINABLE DEVELOPMENT GOALS	PRIORITY OBJECTIVES	KMG'S CONTRIBUTION
 <p><b>BUILDING RESILIENT INFRASTRUCTURE, PROMOTE COMPREHENSIVE AND SUSTAINABLE INDUSTRIALISATION AND INNOVATION</b></p>	<p>9.1. Develop high-quality, reliable, sustainable and resilient infrastructure, including regional and cross-border infrastructure, to support economic development and human wellbeing, with a focus on affordable and equal access for all</p> <p>9.4. By 2030, upgrade infrastructure and revamp industrial facilities to make them sustainable through improved resource use efficiency and increased use of clean and environmentally safe technologies and industrial processes, involving all countries according to their individual capacities</p>	<p>KMG's Digital Transformation Programme enhances scientific research and improves the technological capabilities of industrial sectors. KMG invests heavily in scientific research and build-up of local potential in this area. The development of domestic technological capacities for industrial diversification will also have a positive impact on the country's climate.</p> <p><b>ABAI Information System Development Project</b></p> <p>It involves centralising all KMG Group production information in a single database on a Big Data platform, as well as processing and analysing it using artificial intelligence and machine learning. ABAI Information System is 20 autonomous modules, each aimed at solving specific industrial problems.</p> <p><b>Result</b></p> <p>Five pilot ABAI modules have been developed and tested:</p> <ul style="list-style-type: none"> <li>ABAI Database;</li> <li>Visualisation Centre;</li> <li>Complication Monitoring;</li> <li>Process Mode;</li> <li>Downhole Pumping Equipment Selection.</li> </ul> <p>For more information, see the <a href="#">Digitalisation and Transformation section</a>.</p> <p>A Low Carbon Development Programme until 2031 has been approved</p> <p><b>Result</b></p> <p>2031:</p> <ul style="list-style-type: none"> <li>100% coverage of SDEs by energy management services;</li> <li>Reduction of energy intensity by 10% versus 2019</li> </ul> <p>For more information, see the <a href="#">Low Carbon Development Programme section</a>.</p>

SUSTAINABLE DEVELOPMENT GOALS	PRIORITY OBJECTIVES	KMG'S CONTRIBUTION
 <p><b>TAKING URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS</b></p>	<p>13.2. Integrate responses to climate change into policies, strategies and planning at national level</p>	<p><b>Low-Carbon Development</b></p> <p>A Low-Carbon Development Project office has been established. A Centre of Competence for hydrogen energy and CO<sup>2</sup> capture, storage and recycling is being considered.</p> <p><b>Green Office</b></p> <p>The corporate green initiative is actively pursued and green office principles, such as the introduction of separate waste collection, water and energy saving in office premises, etc., are being implemented in stages.</p> <p><b>Result</b></p> <p>By 2031:</p> <p>GHG emissions down by 15 % versus 2019; Carbon intensity down by 10% versus 2019; Zero routine flaring of raw gas.</p>
	<p>13.3. Improve awareness, information dissemination and the capacity of people and institutions to mitigate, adapt to and prevent climate change</p>	<p><b>Emission Management Policy</b></p> <p>The Company has approved an Emission Management Policy consisting of eight key principles, of which six directly concern climate change, and aimed at complete cessation of routine flaring.</p> <p><b>CDP</b></p> <p>The Company calculates its carbon footprint and posts the Climate Questionnaire on the CDP platform (formerly the Carbon Disclosure Project).</p> <p>Task Force on Climate-related Financial Disclosures (TCFD)</p> <p>Climate-related risk disclosure in accordance with recommendations of Task Force on Climate-Related Financial Disclosures (TCFD).</p> <p><b>Result</b></p> <p>The Company's Environmental Policy has been approved KMG is assigned a CDP climate rating of 'C'. For more information see <a href="#">Occupational Health and Safety and Environment</a>.</p>

SUSTAINABLE DEVELOPMENT GOALS	PRIORITY OBJECTIVES	KMG'S CONTRIBUTION
 <p><b>PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS</b></p>	<p>15.3. By 2030, combat desertification, restore degraded lands and soils, including those affected by desertification, drought and floods, and strive to ensure that land conditions do not deteriorate globally</p>	<p>KMG implements projects and actions aimed at reducing pollutant discharges and water withdrawal from natural sources:</p> <p><b>CDP</b></p> <p>The Company calculates the water footprint and posts a water security questionnaire on the CDP platform.</p> <p><b>TAZALYQ</b></p> <p>Atyrau Refinery is actively implementing TAZALYQ, a large-scale environmental project, to improve the environment of Atyrau.</p> <p><b>Desalination Plants Construction</b></p> <p>The desalination plant is a unique project in addressing the issue of water supply in Mangystau Region. The plant will release at least 6.2 mln m<sup>3</sup> of Volga water per year for development of the region.</p> <p>A desalination plant near the Kenderli recreation area in Mangystau Region. The expected capacity will be 50 thous. m<sup>3</sup> of water per day.</p> <p><b>Land Restoration</b></p> <p>The Company is working on recovery of historic oil waste and clean-up of oil-contaminated lands.</p> <p><b>Result</b></p> <p>TAZALYQ: water withdrawal from the Ural River down by 10%, 15% reuse of treated refinery effluents</p> <p>2024: Complete disposal of historic oil waste, clean-up and remediation of oil-contaminated territories of the Company</p>
	<p>15.5. Take immediate and meaningful actions to halt the degradation of natural habitats, halt biodiversity loss and ensure conservation and prevention of loss of endangered species by 2020</p>	<p><b>Forest Climate Projects</b></p> <p>KMG's Low Carbon Development Programme until 2031 includes forest climate projects that will have a beneficial effect on conservation of terrestrial ecosystems.</p> <p>Embamunaygas JSC and Atyrau Refinery LLP started landscaping.</p> <p><b>Hierarchy of biodiversity impact mitigation measures</b></p> <p>The Company applies a hierarchy of biodiversity impact mitigation measures when planning and implementing its operations based on four key actions: prevention, minimisation, restoration and compensation of potential significant direct impacts.</p> <p><b>Result</b></p> <p>2031: implementation of forest climate projects on an area of 2,000 ha.</p>

## NEW ESG RATING

103-1, 103-2

We continued to integrate the ESG criteria into our operations, which are a prerequisite for improving our sustainability performance management and understanding of key ESG risks and opportunities.

International agency Sustainalytics has improved the risk rating of JSC NC “KazMunayGas” in sustainable development from 34.5 to 28.4 points, which highlights KMG’s strong positions in managing the material ESG risks in the international oil and gas market.

### KMG’s ESG Risk Rating

(as of 31.12.2021)

# 28.4

Medium risk



KMG’s ESG rating was raised from 69 to 72 out of possible 100. In terms of ESG rating components, KMG received the following scores: environmental component has been raised from 69 to 74, social from 70 to 72, and corporate governance from 67 to 72. This indicates the Company’s rather high performance in sustainable development globally among oil and gas companies.

Sustainalytics gives ESG rating to the companies by assessing their environmental, social responsibility and governance risks, and their capability to manage such risks as compared to competitors. More detailed information about Sustainalytics rating is available at: <https://www.sustainalytics.com/esg-rating/kazmunaygas-nc-jsc/1028382256>



#### Sustainalytics International Rating Agency (Amsterdam, Netherlands)

Sustainalytics is a leading independent company engaged in environmental, social and corporate governance research, ratings and analysis, supporting investors around the world in development and implementation of responsible investment strategies.

We are happy that such a reputable agency as Sustainalytics has assessed KazMunayGas as a leader in sustainable development. We pursue an integrated and consistent approach to integrating the ESG principles in our operations: we have adopted the Company’s Environmental Policy, organised the Low-Carbon Development Project office to develop in-house decarbonisation policies to be further integrated into the

Company’s Development Strategy, and have developed the Company’s Low-Carbon Development Programme.

We are faced with a great challenge of keeping the high sustainable development standards. By choosing a responsible approach to business, KMG once again demonstrates its commitment to global ESG goals.

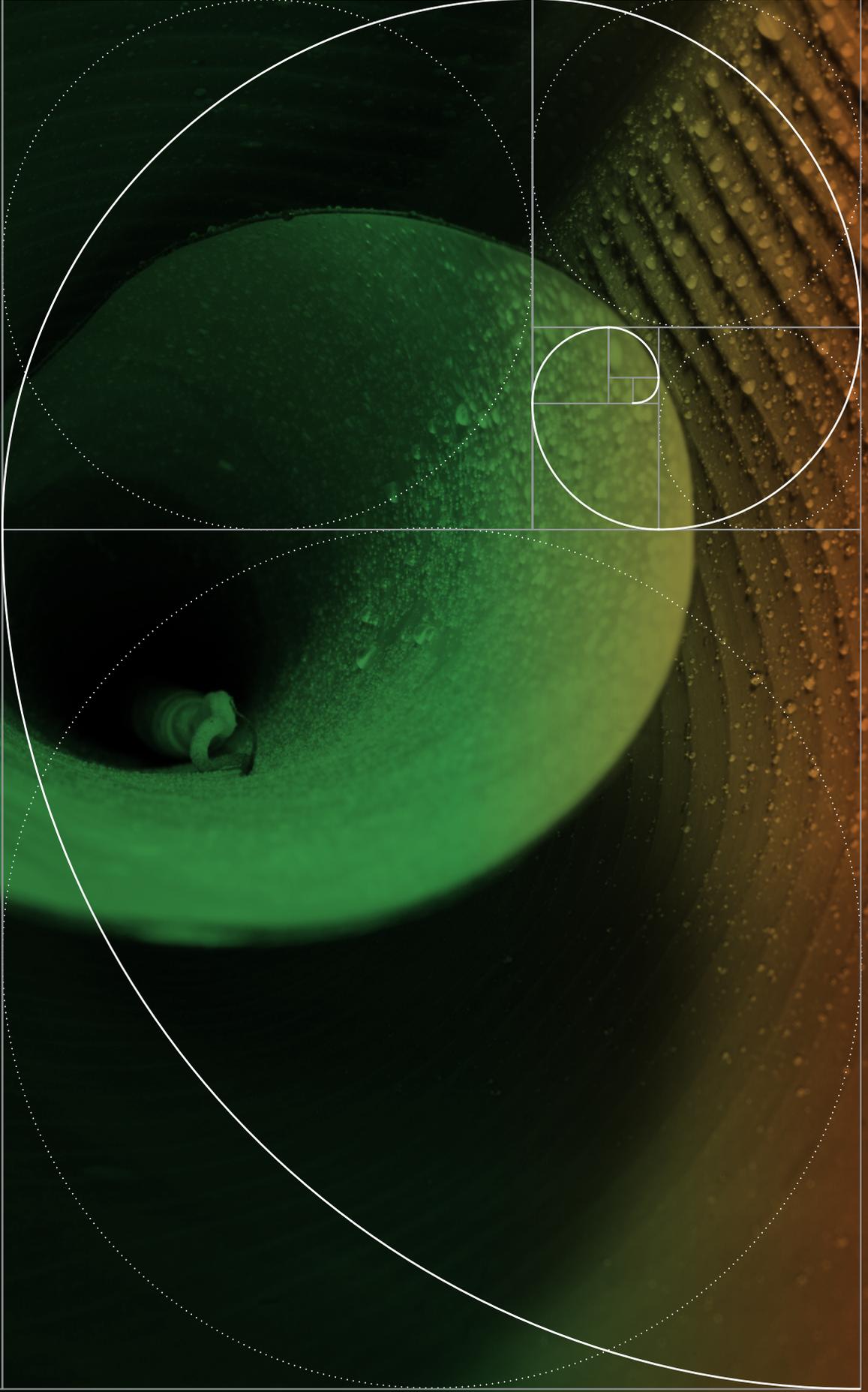
#### FOR REFERENCE

ESG Rating (Environmental, Social and Governance) is an the ecological and social business risk assessment as well as corporate governance risk assessment in a company.

When making investment decisions, the investors use the ESG Rating as a strategic tool that helps to identify risks and opportunities of a company to define its long-term sustainability.

2021

# ENVIRONMENTAL RESPONSIBILITY





- 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.



# OUR MANAGEMENT APPROACH

103-1, 103-2, 103-3

## ENVIRONMENTAL MANAGEMENT SYSTEM

In order to take action to meet new environmental requirements and global trends, the Company has declared 2021 the Year of Environment. KMG recognises its commitment to sustainable development principles and its responsibility towards environmental and social stability in the regions of its operations.

Health, Safety and Environment (hereinafter, HSE) management objectives are directly linked to KMG Group’s Development Strategy until 2031 (hereinafter, the Strategy). The Strategy includes the strategic initiatives to improve environmental responsibility. Environmental priorities of KMG Group include management of atmospheric emissions and reduction of raw gas flaring, water management, production waste management, land reclamation and biodiversity conservation.

Management of KMG and its subsidiaries and dependent entities exercises zero tolerance to losses and damage related to environmental pollution. In accordance with requirements of the new Environmental Code, KMG’s Environmental Policy was updated in 2021 to ensure collection, storage, analysis and dissemination of environmental information. The Company’s commitments to sustainable use of natural resources and compliance with biodiversity conservation measures have been additionally strengthened.

The Company has approved an Emission Management Policy consisting of eight key principles, of which six directly concern climate change, and aimed at complete cessation of routine flaring.

In an effort to minimise routine flaring of raw gas, in 2015 the Company supported the World Bank’s initiative of Zero Routine Flaring by 2030. One of our most important objectives in reducing the atmospheric emissions is increasing the effective use and utilisation of associated petroleum gas, minimising gas flaring. Raw gas flaring under this initiative is reported on an annual basis to the representative office of World Bank in the RoK.

The Corporate Water Management Standard was adopted in 2018, which states the KMG’s core principles in terms of water use – 8 Water Principles – and systematises the approach to water management. We adhere to strict water use principles. We have now embarked on several large-scale projects to treat wastewater and saline water for production purposes in order to free up freshwater for the benefit of the population.

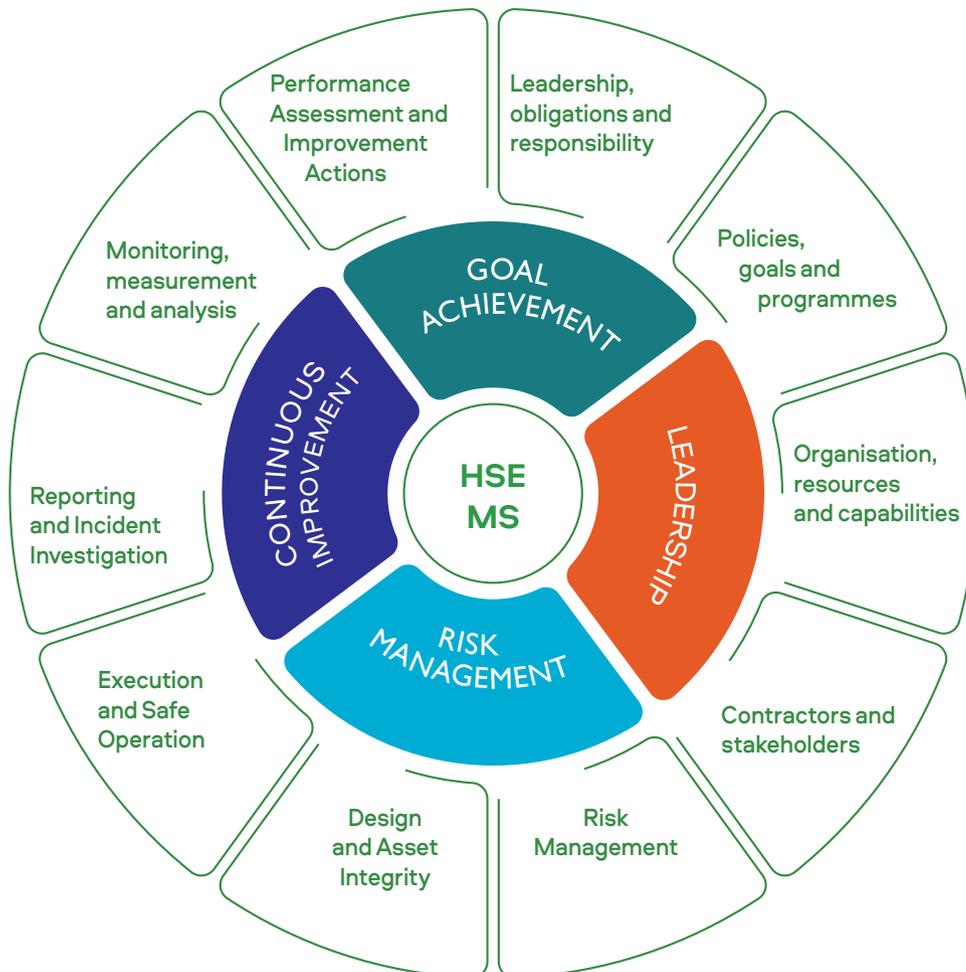


## Health, Safety and Environment (HSE) Management System

The Health, Safety and Environment Management System (HSE MS) was developed in accordance with the laws of the Republic of Kazakhstan, industry and international standards ISO 14001 and ISO 45001, using best international practices and approaches, recommendations of the International Association of Oil & Gas Producers (IOGP), and includes 10 key elements based on such fundamental principles as leadership, achievement of goals, risk management and continuous improvement.

Since 2006, KMG has implemented an integrated quality, environment, health and safety management system (IMS) in accordance with the requirements of ISO 9001, ISO 14001 and ISO 45001. SDEs with substantial energy consumption levels are certified to ISO 50001. IMS performance is regularly verified by independent auditors.

In order to improve its management system, KMG health and safety management system is certified for compliance with the international standard ISO 45001.



Considering the leading and best practices in health, safety and environment (HSE) management, a three-tier committee system has been introduced and implemented to increase the commitment and involvement of managers at all levels and employees in HSE management processes:

- Tier 1 – Health, Safety, Environment and Sustainability Committee of KMG’s Board of Directors (HSESC);
- Tier 2 – HSE Committee at KMG level;
- Tier 3 – HSE Committees of SDEs.

Since 2019, there is a Health, Safety and Environment Committee at the level of Samruk-Kazyna JSC. In 2021, KMG took an active part in work of this Committee and the Committee’s Expert Group. Within the Committee and the Expert Group, Samruk-Kazyna JSC’s portfolio companies actively share experiences and develop common approaches in the field of HSE, including in relation to pandemic response. Many of KMG’s approaches to HSE and pandemic response have been adopted by other portfolio companies as best practices.

<b>Internal control and improvement</b>	<ul style="list-style-type: none"> <li>• HSE Assessment Management System</li> <li>• HSE Committee System</li> </ul>	<ul style="list-style-type: none"> <li>• HSE Compliance and RT Audits</li> <li>• Set of HSE Culture Improvement Measures</li> </ul>
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>• HSE Reporting Rules</li> <li>• HSE Traffic Safety Automation</li> <li>• HSE KPI System</li> </ul>	<ul style="list-style-type: none"> <li>• Incident Investigation Procedure</li> <li>• Automated Accident Investigation Module</li> <li>• Benchmarking</li> </ul>
<b>Implementation</b>	<ul style="list-style-type: none"> <li>• Healthcare Management System</li> <li>• Transport Safety Programme</li> <li>• Crisis Management Standard</li> <li>• Methane Leak Detection Programme</li> </ul>	<ul style="list-style-type: none"> <li>• Waste Management Standard</li> <li>• Water Supply Management Standard</li> <li>• Energy Efficiency Roadmap</li> </ul>
<b>Production Integrity</b>	<ul style="list-style-type: none"> <li>• Ensuring Fire Safety Preparedness</li> <li>• LOTO</li> </ul>	<ul style="list-style-type: none"> <li>• Production Process Safety System</li> </ul>
<b>Risk Management</b>	<ul style="list-style-type: none"> <li>• Risk Management System</li> <li>• Behaviour-Based Safety Observation Programme</li> </ul>	<ul style="list-style-type: none"> <li>• EIA Risk Assessment Standard</li> </ul>
<b>Stakeholders</b>	<ul style="list-style-type: none"> <li>• Contractor Management Standard</li> <li>• Contractor Reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Public Hearings</li> </ul>
<b>Standards</b>	<ul style="list-style-type: none"> <li>• Development and implementation of HSE standards based on best global practices</li> </ul>	
<b>Course</b>	<ul style="list-style-type: none"> <li>• HSE Policy</li> <li>• Transport Policy</li> </ul>	<ul style="list-style-type: none"> <li>• Alcohol Policy</li> <li>• Atmospheric Emission Management Policy</li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• Ensuring Occupational Safety</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Responsibility</li> </ul>
<b>Goals</b>	Zero: <ul style="list-style-type: none"> <li>• incidents</li> <li>• spills</li> </ul>	<ul style="list-style-type: none"> <li>• discharges</li> <li>• routine flaring</li> </ul>
<b>Leadership</b>	<ul style="list-style-type: none"> <li>• Management commitment: Forum of managers, SPE</li> </ul>	<ul style="list-style-type: none"> <li>• Three-Tier HSE Committee System</li> </ul>

Health, safety and environment reports are reviewed by KMG's Board of Directors on a monthly basis, with detailed informative reports reviewed by KMG's Board of Directors' HSESC. In 2021 meetings, the HSESC discussed the following key topics:

- waste management and implementation of the Historic Waste Disposal Memorandum;
- occupational health and safety management system
- management of KMG's contractors;
- atmospheric emission management.

HSE risks are monitored on a quarterly basis, including environmental, climate change and water scarcity risks. KMG regularly reviews environmental performance and benchmarks against leading international oil and gas associations (IOGP, CDP). The Company pays particular attention to environmental aspects and environmental risk assessment.

## Engagement with Contractors


 403-9

The Company is committed to improving its contractor HSE management processes, which are based on identifying, assessing and mitigating risks at all stages of work and service delivery by contractors/subcontractors at KMG Group's production facilities.

Critical requirements when engaging with contractors are:

1. Leadership, commitment and accountability of managers at all levels of the Company in the area of HSE;
2. Pre-qualification of contractors (questionnaires, audit of machinery and equipment compliance, qualification of specialists, documentation for compliance with HSE requirements);

3. Contractors' commitment to and strict compliance with KMG's policies and standards;
4. Ensuring the HSE expertise of KMG and contractor employees at all levels is in proportion to the existing risks and its continuous enhancing through training;
5. Development of an HSE plan by contractors, which includes risk management at all stages of work or service delivery;
6. Pre-mobilization audit of machinery and equipment compliance, qualification of specialists, documentation for compliance with HSE requirements;
7. Improving communication and awareness of HSE risks among KMG employees, contractors (subcontractors) and stakeholders;
8. Assessment of contractors' HSE performance and measures for improvement.

In addition, the Company regularly holds forums, meetings with contractors to discuss issues of concern and improve HSE communication.

LTIR (Lost Time Injury Rate) per 1 mln man-hours involving contractors in 2021 was 0.27. FAR (Fatality Accident Rate) per 100 mln man-hours involving contractors in 2021 was 0.00. Contractors data gathering process is at early stage. The system will be continuously improved.

GAP analysis of contractor HSE management system performance for 2021 conducted independently by SDEs showed a positive level of system development.

In order to confirm and verify GAP analysis data, it is planned to conduct audits of the contractor management systems in SDEs, based on which the submitted data will be compared with the audit data and main constraints (system causes) in development of contractor HSE management system will be identified.

## ACCIDENT AND FATALITY RATE INVOLVING CONTRACTORS

Indicator	2020 <sup>4</sup>	2021 <sup>5</sup>	IOGP <sup>6</sup>
Lost Time Injury Rate per 1 mln man-hours	0.00	<b>0.27</b>	<b>0.22</b>
Fatal Accident Rate per 100 mln man-hours	0.00	<b>0.00</b>	<b>0.54</b>

<sup>4</sup> No data

<sup>5</sup> Data excluding KTG and its business units

<sup>6</sup> Available IOGP figures for 2020 (<https://www.iogp.org/>).

## ENVIRONMENTAL PERFORMANCE

102-11, 103-1, 103-2, 103-3

KMG Group's operations are focused on minimising its environmental impact, using natural resources sustainably and preserving biodiversity.

We recognise our responsibility to society for sustainable use of natural resources and preservation of a favourable environmental situation in the regions where we operate, and are committed to ensuring sustainable use of natural resources, consistently reducing our impact on the environment through introduction of energy and resource saving, low-waste, environmentally friendly technologies, equipment, materials, climate change adaptation measures and compensation for possible environmental damage.

A number of measures has been implemented in recent years to increase the effective utilisation of raw gas, resulting in this indicator improving and reaching 98%. We also managed to reduce atmospheric pollutant emissions across KMG Group. There are ongoing oil

waste disposal measures, including historic waste, and reclamation of polluted lands. The programme activities being implemented and planned will ensure reduction in water consumption from surface water sources and improvement of the waste water's qualitative composition. Desalination plants are under construction in Mangystau Region.

### Key Figures of 2021

1. SOx emission rate – 0.22 (IOGP – 0.19)
2. NOx emission rate – 0.24 (IOGP – 0.29)  
(<https://www.iogp.org/>)
3. associated petroleum gas flaring intensity (APG) – 2.1 (IOGP – 8.0)
4. APG utilization rate – 98%
5. Restoration of historical waste and oil-contaminated land: 540,500 tonnes (2020 – 558,400 tonnes, 2019 – 324,700 tonnes)
6. CDP Climate Rating: "C"
7. CDP water security rating: "B"

### ENVIRONMENTAL PERFORMANCE, TONNES PER 1,000 TOE OF HCS PRODUCTION

Year	SOx emission rate	NOx emission rate	Raw gas flaring rate	Raw gas flaring rate
2019	0,20	0,21	2,95	97
2020	0,23	0,22	2,20	98
<b>2021</b>	<b>0,22</b>	<b>0,24</b>	<b>2,09</b>	<b>98</b>

## Year of Environment at KMG Group

A number of environmental safety measures have been implemented during the Year of Environment, such as disposal of historic oil waste and clean-up of oil-contaminated lands. KMG's Corporate Centre has held a drawing competition among the children of KMG Group employees.



2021

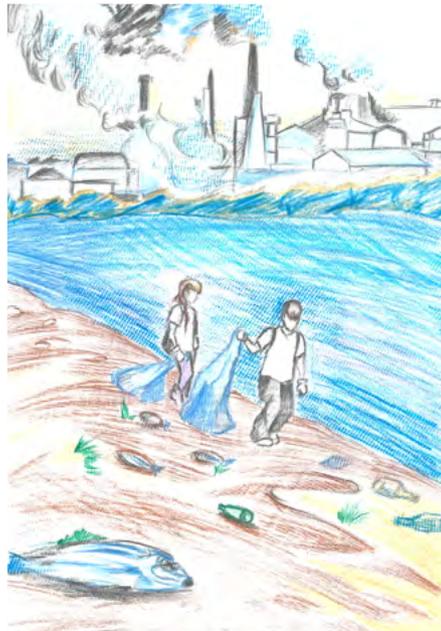


The first stage involved in-house children's drawing competitions in all SDEs. KMG's Health, Safety and Environment Department held an Environment through Children's Eyes drawing competition among employees of the corporate centre.



The second stage of the competition involved all the winners among KMG Group, the finalists were determined through online voting. The winner was Nurasyly Berdalý.







KMG SDEs actively supported all organised activities of the Year of Environment, and environmental awareness raising among employees was strengthened, with periodic clean-up days, drawing competitions for employees' children, participation in tree planting campaigns, development of action plans to reduce air emissions, implementation of environmental protection programmes and other events, such as:

- Earth Hour international environmental campaign;
- Month's clean-up and landscaping campaign in the regions where we operate;
- Birge Taza Kazakhstan republican campaign;
- Oz Agashindi Otirgiz environmental campaign;
- Plastic Monster regional environmental competition;
- Employees regularly cleaned and tidied up the territory and took part in city-wide clean-up days;
- Trees were planted within sanitary protection zones.

World Cleanup Day 2021 took place on 18 September in 191 countries. As part of this global movement and republican eco-initiative Birge-Taza-Kazakhstan! and KMG's Year of Environment, a tree-planting event was held jointly with the Almaty District Akimat of Nur-Sultan. About 100 pine trees were planted by the Company's employees in the capital during a city-wide clean-up day on 18 September.



The commitment to environmental responsibility is also reflected in landscaping work at KMG SDEs. It is planned to carry out Landscaping by Major Oil Companies for 2021-2024 in KMG SDEs located in Atyrau Region as instructed by the President of the Republic of Kazakhstan K. Tokayev announced in the Message to the people of Kazakhstan, and also under the Complex Plan to plant more than 2 billion trees in forests and 15 million in the settlements.



All KMG SDEs have planted green vegetation in the sanitary protection zones and in the regions where they operate. For example, Karazhanbasmunay JSC employees cleaned up and planted 3,000 saplings in the territory of Karazhanbas field and a number of socially important facilities in Mangystau Region. Pavlodar Refinery LLP has planted 6,680 trees on an area of 21.5 hectares within the sanitary protection zone. The company employees have planted 84 trees on the industrial site.



A Memorandum of Understanding was signed between the Atyrau Region Akimat (Mayor's Office) and Embamunaygas JSC in April 2021 on Landscaping in Atyrau Region with a total scope of 243.2 hectares. Soil Surveys on the Allocated Land Plot have been conducted under the landscaping programme. Landscaping is planned in the territory based on the soil surveys and identification of land plots suitable for planting.

Under the Memorandum on Landscaping in Atyrau signed in April 2021 with the Atyrau Region Akimat, Atyrau Refinery LLP has been allocated the land plots in Atyrau with a total area of 1,420.9 ha, including 860.9 ha of Tukhlaya Balka evaporation field. In order to fulfil the Memorandum conditions on an area of 560 hectares, a

research company with experience and scientific expertise in afforestation has been engaged by the refinery. Based on the survey, the allotment is not suitable for landscaping and work is underway to identify a new land plot. Once the additional land plot for landscaping is identified, the refinery will develop a landscaping and greening project, determine an estimated cost and scope of work, and a schedule of work. Atyrau Refinery LLP has carried out additional landscaping and greening on a 5 ha area within the Sanitary Protection Zone (SPZ) to the west of the refinery (not included in the approved SPZ feasibility study in terms of landscaping).

Employees also regularly cleaned and tidied up the territory.



## Priority Environmental Projects

### TAZALYQ Project

TAZALYQ project includes upgrading the waste water treatment facilities of Atyrau Refinery LLP and remediation of Tukhlaya Balka evaporation ponds.

### Project to Build a Formation Water Treatment Plant at Karazhanbas Field

Construction of a formation water treatment plant at Karazhanbas field will solve the problem of water scarcity at the field.

### Automated Environmental Monitoring Information System Project

It is used in the preparation and submission of various environmental reports and the planning of environmental protection measures. The goal is to obtain accurate and reliable data, generate the comprehensive and up-to-date environmental information that is needed for effective environmental policy as well as for development programmes.

## Recovery of Historic Oil Waste and Oil-Contaminated Land Clean-up

Complete disposal of historic oil waste and clean-up of oil-contaminated lands up to and including 2024.

### Green Office Principles in KMG

Green Office principles are concerned with conserving all resources and taking care of the environment. KMG takes steps to implement Green Office requirements, which include measures to continuously improve working conditions, comfort, productivity, design and architecture, greenery and recreational opportunities.

The following steps have been taken to date:

- installation of eco-bins in offices, hallways, lobby, parking area for separate waste collection: paper, plastic, glass and metal;
- video clip on separate waste collection at the end of each month will be shown on displays in the lifts and lobby of the Emerald Business Centre;
- pop-up window to switch off computers and equipment on employees' screens at the end of the working day;
- sticker with slogans to save trees, minimise printing, use double-sided and black-and-white printing, print unofficial documents on the "backs" of drafts not containing confidential information;
- in order to protect employees from the harmful effects of personal computers, a pop-up window option has been installed telling them to take five minutes off their PC and exercise at 11.00 and 16.30;
- Environment Calendar 2021 was issued for KMG employees;
- awareness raising campaign is conducted through internal mailing of posters, brochures, videos and presentations on the Green Office concept;
- slides about eco-bins for separate waste collection in the office have been added to the onboarding programme for newly hired employees.

To implement the Green Office concept in KMG's Corporate Centre, a target has been set to reduce consumption of writing paper by 3% versus 2019. In 2021, 3,059 packs of paper were used, which is 23.5% below the planned 4,000 packs and 75% below the target (12,228 packs were used in 2019).

## Environmental Assessment of Planned Economic Activities

The Company conducts environmental assessment of proposed economic activities at all stages of the project life cycle from the declaration of intent to construction and operation projects in line with legal requirements and



best international practices. We are in regular contact with representatives of the local community and take their views into account when planning and implementing projects. Public hearings are held at each design stage with stakeholder representatives to enable access to draft EIAs for all stakeholders and record comments and suggestions. All KMG Group's draft EIAs are subject to state environmental expert review and are available to the public concerned. In 2021, 24 meetings with local communities and public organisations and 34 public hearings were held, and media tours to production facilities were conducted. The number of offline public hearings has been reduced due to restrictions imposed because of the coronavirus emergency.

In 2021, the Company's Board of Directors approved the **Corporate Standard for Environmental Impact Assessment**. The Standard defines corporate principles of the process of assessing the environmental impact of planned activities, regulates the activities of KMG Group, employees and contractors of KMG Group, including design organisations which activities are related to development of technical documentation and materials for environmental impact assessment, ensuring consideration of the public opinion on the environmental impact assessment related materials as well as obtaining the emission permit.

## Engagement with Public Organisations

In 2021, an environmental ombudsman started working at one of our refineries to:

- represent the regional public, local environmental NGOs at the refinery;
- monitor the environmental impact of the refinery's operations and inform the residents about it;
- respond to questions from residents to the refinery management;
- establish a meaningful dialogue between Atyrau Refinery and the public.

In December 2021, the environmental ombudsman held a report meeting with the public on the progress of Atyrau Refinery LLP's environmental action plan with the involvement of refinery managers, regional environmental department, regional maslikhat (local representative body) deputies, representatives of regional environmental NGOs, bloggers, activists and the Regional Consumer Rights Protection Society, etc.

There was a meaningful and open dialogue between the refinery management and the public, who received competent answers to all their questions.

## AIR PROTECTION

305-5, 305-7

In support of the strategic initiative “Sustainable Development of All Business Areas”, the Company follows the principle of zero tolerance towards pollution-related losses and damages and operates in accordance with national environmental legislation and best international practices. The Environmental Policy has been revised to implement the objectives of the new environmental law of the RoK. SDEs are guided by KMG Group’s Atmospheric Emission Management Policy in their operations.

One of the key areas for minimising the environmental impact is reduction of air pollutant emissions from the Company’s operations. Measures to reduce air pollutant emissions include the following activities:

- Obsolete burners on oil heaters are being gradually replaced;
- Integrated gas treatment and processing facilities are under construction;
- Work is underway to install pontoons for vertical oil tanks to prevent evaporation of hydrocarbons.

- Catalytic converters for pollutant emissions are installed on oil heaters, etc.

The regions pay special attention to monitoring the emissions from their production facilities, primarily those located near or within the boundaries of populated areas. To ensure air quality in populated areas, KMG Group is implementing projects to reduce pollutant levels and is also taking measures to set up air quality control systems and install stationary air quality monitoring stations at the boundaries of sanitary protection zones.

We conduct operational environmental monitoring and take measures to reduce air pollutant emissions generated by the operations and processes. As part of the operational environmental monitoring programmes, monitoring of air emissions is done in the designated sampling points and measurements are taken to assess the potential impact. The bulk of pollutant emissions is generated by heating gas burned in boilers, process furnaces and compressors, gas turbine plants, compressor stations, gas flaring, etc.

The permitted volume of all pollutant emissions across KMG amounted to 110.2 thous. tonnes in 2021 (247.2 thous. tonnes in 2020). There has been a reduction in emissions over the last 3 years.

### GROSS ATMOSPHERIC POLLUTANT EMISSIONS WITHIN KMG GROUP, THOUS. TONNES

	2019	2020	2021*
Total atmospheric pollutant emissions, including:	264.8	247.2	110.2
NOx emissions	18.5	17.6	12.7
SOx emissions	12.3	12.7	12.2
other pollutant emissions	234.0	216.9	85.3

*\*Note: Gross atmospheric pollutant emissions across KTG for 10 months of 2021: atmospheric pollutant emissions amounted to 122.0 thous. tonnes, NOx emissions – 6.4 thous. tonnes, SOx emissions – 0.1 thous. tonnes, other pollutant emissions – 115.5 thous. tonnes.*

The completed projects for upgrade of oil refineries enabled better environmental performance of fuel produced by the refineries through production of K4-K5 oil

products to the European quality standards in compliance with the Customs Union Technical Regulations.

## SPECIFIC POLLUTANT EMISSIONS WITHIN KMG GROUP

	2019	2020	2021
HCs production, t / 1000 toe of produced raw hydrocarbons	1.7	1.9	1.9
Oil refining, t / 1000 t of refined oil	2.9*	2.9	2.8
Oil transportation, t / 1000 of transported oil	0.5	0.5	0.5
Gas transportation, t / 1000 toe of transported gas	1.5	1.6	1.6

\*Data for 2019 have been updated to reflect the expansion of SDEs scope in calculation of this indicator.

We do not yet make direct, real-time measurements using, for example, gas analysers, however, in accordance with the new Environmental Code, the authorised environmental body plans a general switch to automated monitoring of pollutant emissions by installing sensors/ gas analysers at emission sources of Category 1 natural resources use facilities. SDEs are adjusting projects to implement an automated emission monitoring system directly at emission sources, and a number of projects are undergoing state environmental expert review.

In 2021, the average ratio of NO<sub>x</sub> emissions to the total produced raw hydrocarbons in oil equivalent for KMG Group amounted to 0.24 tonnes per thousand tonnes of produced HCs, while average IOGP value is 0.29. Specific NO<sub>x</sub> emissions have increased by 9% versus 2020 due to addition of new emission sources. The average ratio of SO<sub>x</sub> emissions to the total produced raw hydrocarbons in oil equivalent for KMG Group amounted to 0.22 tonnes per thousand tonnes of produced HCs, while average IOGP value is 0.19. Compared to 2020, there is a 4% reduction in the specific emissions of SO<sub>x</sub>.

305-7

In its operations, the Company does not emit persistent organic pollutants.

## SUSTAINABLE UTILIZATION OF RAW GAS

OG6, 103-1, 305-5

This section reflects data on companies in production sector where processes related to production and beneficial use of raw gas are present.

Managing the greenhouse gas emissions and reducing the gas flaring are among the top priorities for KMG Group. According to the approved Environmental Policy, the Company aims to achieve zero routine gas flaring and to reduce atmospheric emissions from flares. One of the most important tasks in reducing the greenhouse gas emissions is increasing the beneficial use and utilisation of raw gas, minimising gas flaring. The in-house use of gas for heat and electricity generation has increased due to the implemented measures of the raw gas development and processing programmes.

Targeted actions across KMG Group have resulted in an 83% reduction in APG flaring between 2017 and 2021. This has reduced emissions of pollutants and greenhouse gases from the flaring and dispersal of raw gas.

In 2021, the Company's sustainable utilization of raw gas achieved 98%. The gas flaring rate is at 2.1 tonnes per 1000 tonnes of produced HCs (2.2 in 2020, 2.95 in 2019), 5% below the 2020 figure and 74% below the industry average IOGP value.

## RAW GAS FLARING VOLUME

Показатель	2017	2018	2019	2020	2021
Total raw gas flaring, mln m <sup>3</sup>	315.8	148.9	80.2	57.6	52.5
Rate of beneficial use of raw gas, %	85	93	97	98	98
Raw gas flaring rate, tonnes per 1000 thous. of produced HCs	11	6	2.95	2.2	2.1

In 2015, KMG supported the World Bank's initiative of Zero Routine Flaring by 2030. The Company aims to minimise the flaring of raw gas. Raw gas flaring under this initiative is reported on an annual basis to the representative office of World Bank in the RoK.

The standard states the main water use principles of KMG – eight water principles, systematizes the approach to water management in KMG's SDEs, as well as helps to enhance the commitment of managers and employees of the Company to fresh water conservation.

Projects aimed at reducing discharges and reducing water withdrawal from natural sources are being implemented.

## WATER CONSERVATION AND SUSTAINABLE WATER USE

103-1, 103-2, 103-3

### Atyrau Refinery LLP

Due to the fact that the Company conducts its core business in the Central Asian region, where water is a valuable and scarce natural resource, KMG is aware of its responsibility to society and the environment and is committed to sustainable use of water resources.

One of the main environmental measures is the implementation of TAZALYQ project, which will include the upgrade and reconstruction of mechanical treatment facilities at the AR, reconstruction of biological treatment facilities and construction of a post-treatment unit, and reconstruction of evaporation ponds and the channel for wastewater treated to standard quality.

KMG has officially declared its intention to contribute to conservation of water resources in the Republic of Kazakhstan. During the HSE Forum for KMG CEOs, the Chairman of the Management Board A.S. Aidarbayev signed a personal Statement of Commitment to Sustainable Water Management (KMG's Eight Water Principles). This initiative was supported by the chief executive officers of KMG's SDEs, who signed similar statements of commitment on behalf of their companies. The signed statements of commitment are posted on the official websites of KMG Group.

Reclamation of evaporation ponds involves complete cessation of the plant's wastewater discharge to ponds (860 ha owned by AR), which will be drained, eliminating adverse impacts on groundwater, flora and fauna of Atyrau Region.

Also, thanks to TAZALYQ project, closed-type mechanical treatment plants will be built at the refinery, and introduction of modern processes will bring wastewater treatment quality to regulatory standards.

## Construction of Desalination Plants near the Kenderli recreation area in Mangystau Region

Ozenmunaygaz JSC and KMG Engineering LLP signed a Memorandum of Understanding and Cooperation with the Akimat of Zhanaozen. The signed document involves reclassification of the desalination plant construction feasibility study developed by KMG Engineering LLP as a social project according to the protocol order of the Prime Minister of the Republic of Kazakhstan A.U. Mamin dated 18 September 2019. The desalination plant is planned to be built at the expense of KMG near Kenderli recreation area of Mangystau Region. The expected capacity will be 50 thous. m<sup>3</sup> of water per day.

Karazhanbasmunay JSC faced the problem of water shortage due to lack of fresh water sources in the area of Karazhanbas field and large volumes of water required for steam generation to be used as a thermal method of oil reservoir treatment by reinjection. As a consequence, there was a threat of drop in oil production and associated losses.

Since September 2019, construction and installation of the desalination plant have been underway at Karazhanbasmunay JSC in Mangystau Region of Kazakhstan. It is at the stage of completion. The desalination plant is designed to treat and utilise the formation water and supply technical water in order to increase the reservoir recovery at Karazhanbas field by steam injection into the reservoir.

The plant is important to the company because in addition to desalination of water for steam generation, it will resolve the issues of sustainable utilisation of produced water. This will improve the field's reservoir pressure maintenance capabilities.

CDP reporting expanded in 2020, and in 2021 water management data was published for the second time on the CDP website in 2020 Water Security Questionnaire.

More detailed information can be found in KMG's published reports, which are publicly available at:

[CDP 2020 Water Security Questionnaire](#)



# KMG BLUE PRINCIPLES

Water is the basis of life, the source of all things existing.

The stability and security of the state is determined by the abundance of clean fresh water, and the success and sustainability of business – by responsible, caring attitude to it. These principles express the Company's commitment and demonstrate its intention to conserve water resources for people, nature and well-being of current and future generations of our country.

We constantly use water - from daily needs to the extraction and processing of oil. And at the same time, within the daily routine, we must not forget how much water is priceless. Every employee of the Company can and should contribute to its preservation.

KazMunayGas NC JSC CEO



UNCONDITIONALLY ACCEPT AND UNDERSTAND THE VALUE OF WATER RESOURCES



COMPLY WITH LEGAL REQUIREMENTS AND INTERNATIONAL BEST PRACTICES



CONSIDER FRESHWATER CONSERVATION ISSUES WHEN MAKING MANAGEMENT DECISIONS



TRACK THE INITIAL SOURCES OF WATER INTAKE



STRIVE NOT TO USE DRINKING WATER FOR INDUSTRIAL PURPOSES



100% INSTRUMENT METERING OF WATER INTAKE AND DISCHARGE



IMPLEMENT WATER CIRCULATION AND WATER SAVING TECHNOLOGIES



CONTINUOUSLY IMPROVE WATER MANAGEMENT

## Water Footprint

303-1, 303-2, 303-3, 303-4, 303-5, 306-1, OG5

Water intake by KMG Group in 2021 amounted to 84.34 mln m<sup>3</sup>, including surface sources – 36.85 mln m<sup>3</sup>, groundwater sources – 25.99 mln m<sup>3</sup>, urban water supply systems – 3.30 mln m<sup>3</sup>, sea – 18.11 mln m<sup>3</sup>, waste water from other facilities – 0.08 mln m<sup>3</sup>.

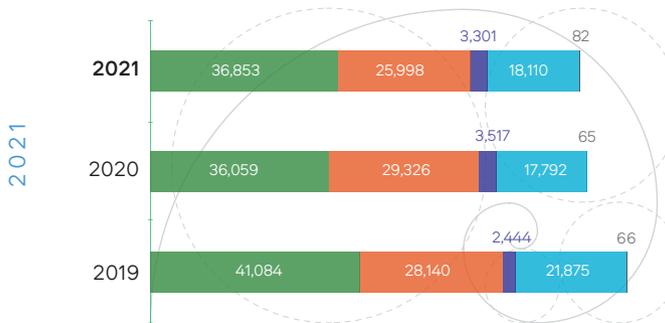
In 2021, 13.59 mln m<sup>3</sup> of wastewater was removed by KMG Group. After wastewater treatment at treatment facilities, the standard-quality treated water is discharged to dedicated collectors: gathering ponds, evaporation and

filtration fields. Facilities that have no own collectors have their wastewater treated and discharged by dedicated companies under contracts.

Treated wastewater is reused to wash vehicles, suppress dust and make up firefighting systems. Considerable portion of treated wastewater is only reused by refineries, which reused 3.97 mln m<sup>3</sup> of treated wastewater in 2021. The water was mainly used to make up recycling water supply units. KMG plants reused 24% of water (of water intake for oil refining).

In 2021, recycling water supply systems of KMG refineries used (recycled) a total of 389.99 mln m<sup>3</sup> of water.

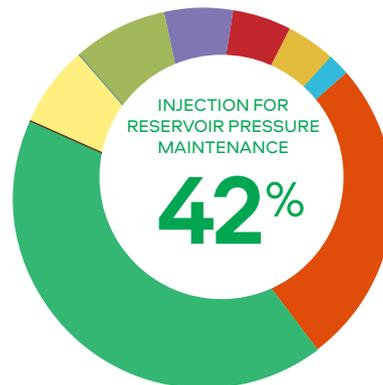
### WATER INTAKE FOR KMG GROUP BY SOURCE, 84,344 THOUSAND M<sup>3</sup>



- Surface sources
- Underground sources
- Municipal water supply systems
- Sea
- Wastewater from other companies

Note: Water intake by KTG for 10 months of 2021 amounted to 0.86 mln m<sup>3</sup>, including surface sources – 0.003 mln m<sup>3</sup>, groundwater sources – 0.65 mln m<sup>3</sup>, urban water supply systems – 0.21 mln m<sup>3</sup>, sea and waste water from other facilities – not used.

### WATER USE BY TYPE OF OPERATIONS WITHIN KMG GROUP IN 2021



- Injection for reservoir pressure maintenance 42%
- Refinery recycling water make-up 6%
- Drilling, injection, well workover and fracturing 0%
- Steam production at the refinery 5%
- Steam generation at refineries 5%
- Lost 4%
- Recharge of fire extinguishing systems 0%
- Domestic and potable 3%
- Transferred without use 26%
- Other production needs 8%

Note: Water use by type of operations by KTG for 10 months of 2021: 55% is used for domestic and drinking purposes, 30% is transferred without use, 12% is used for other production needs and 3% is lost.

### CIRCULATING WATER SUPPLY SYSTEMS OF KMG REFINERIES CONTAINED

	2019	2020	2021
Recycling water, mln m <sup>3</sup>	424.18	430.62	389.99

Oil production generates large volumes of so-called associated formation water: water-oil emulsion is brought to surface, which is then separated into water and oil by gravity. After settling in this manner, water is injected into the reservoir.

Out of **131.05 mln m<sup>3</sup>** of produced associated formation water in 2021, **99%** was reinjected to maintain reservoir pressure.

### REINJECTED TO MAINTAIN RESERVOIR PRESSURE

	2019	2020	2021
Produced associated formation water, mln m <sup>3</sup>	129.19	125.37	131.05

The Company has a considerable impact on water bodies in the West Kazakhstan (Ural River, Kigach River, Kokzhide Sands), which have special environmental, economical, historical and cultural, and recreational value. Regular

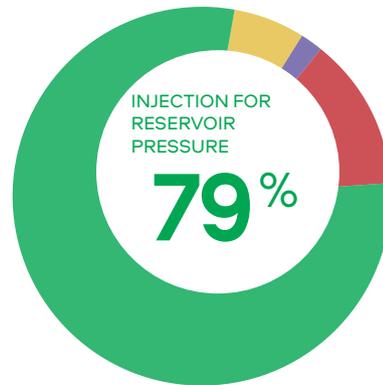
environmental monitoring is conducted by regulatory authorities to prevent adverse impact on susceptible ecosystems.

### WATER USE BY TYPE OF DOWNSTREAM OPERATIONS IN 2021, 16.14 MLN M<sup>3</sup>



- Recycling water make-up 32%
- Domestic and potable 5%
- Firefighting system make-up 0%
- Transferred without use 3%
- Steam generation 28%
- Other 7%
- TPP water consumption 25%

### WATER USE BY TYPE OF UPSTREAM OPERATIONS IN 2021, 45.06 MLN M<sup>3</sup>



- Injection for reservoir pressure maintenance 79%
- Domestic and potable 2%
- Drilling, completion, well workover and hydraulic fracturing 0%
- Other production needs 6%
- Steam generation 13%



**Before clean-up of oil-contaminated land of EMG**



**After clean-up**

## WASTE MANAGEMENT AND LAND RECLAMATION

103-1, 103-2, 103-3, 306-2, 306-3, 306-4

Production and consumption waste is generated during KMG's operations. KMG Group develops and implements a set of measures aimed at improving the waste management system, keeps records of generated and accumulated waste, including waste of contracting companies, ensures safe accumulation of waste until recovery or disposal, in 2021 KMG spent **12.9 bln tenge** on recovery of generated and accumulated waste.

All KMG facilities keep records of production and consumption waste by type, quantity and properties, develop hazardous waste certificates, and keep records of production and consumption waste in a relevant waste register as the waste is generated and transferred for recycling or disposal. The results of waste accounting are submitted to the environmental authority in the form of the

following documents: production environmental control reports (quarterly), waste inventory reports (annually), hazardous waste certificates.

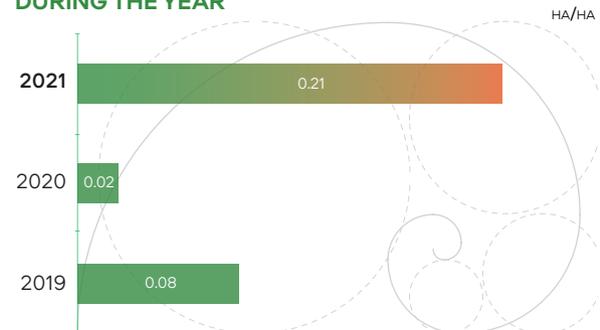
On 6 August 2019, a Memorandum of Cooperation was signed between the Ministry of Environment, Geology and Natural Resources of the Republic of Kazakhstan and KMG with commitments to dispose of historic oil waste and clean-up the oil-contaminated land up to and including 2024, with MMG, OMG and KBM included in the memorandum.

To implement the Memorandum, inventory of MMG, OMG and KBM's contract areas have been taken since September 2019 to identify waste properties, oil product content in the waste and volumes of waste. Based on the completed inventory, relevant reclamation projects for oil-contaminated land were developed and agreed with the Government Authorities, safe and efficient techniques for oily waste disposal were selected and recommended in the projects, and oil-contaminated land reclamation schedules until the end of 2024 were developed.

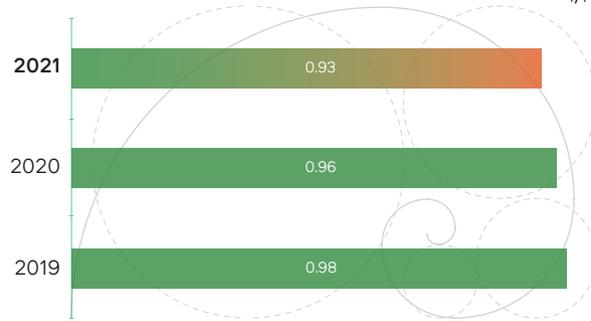
### RATIO OF CONTAMINATED LAND AREA AT THE END AND BEGINNING OF YEAR



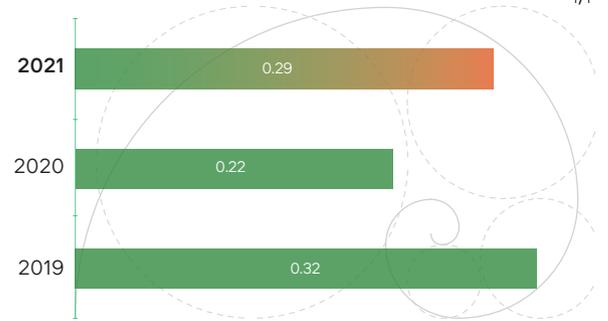
### RATIO OF RECLAIMED LAND AREA DURING THE YEAR TO CONTAMINATED LAND AREA DURING THE YEAR



**RATIO OF DISPOSED WASTE AMOUNT TO NEWLY GENERATED WASTE AMOUNT**



**RATIO OF DISPOSED WASTE AMOUNT TO ACCUMULATED AND NEWLY GENERATED WASTE AMOUNT**



In addition, although EMG and KTM are not part of the Memorandum, elimination of historic contamination is also being carried out here.

For all the companies listed above, long-term contracts have been concluded with dedicated companies for disposal of historic oily waste and clean-up of oil-contaminated land, oil waste disposal facilities have been built, and appropriate positive conclusions, permits and licences have been obtained.



**An oil waste disposal facility built on MMG site**

In 2021, **540.48 thous. tonnes of historic waste** was disposed at the facilities of KMG SDEs, and their disposal sites were reclaimed.

MMG, OMG and KBM plan to complete all disposal of historic contamination by the end of 2024, EMG and KTM plan to complete clean-up of historic oil-contaminated land within the contract areas by the end of 2022.

KTO has fully reclaimed the historically contaminated lands in 984-985 km sections of the Uzen – Atyrau – Samara trunk oil pipeline.

The total mass of waste handled in KMG Group in 2021 was 1,032.0 thous. tonnes, including waste classified as “hazardous” – 964.2 thous. tonnes, and “non-hazardous” – 67.8 thous. tonnes.

Newly generated waste was 413.1 tonnes, of which 93% was disposed or recycled.

KTG Group generated 3.7 thous. tonnes in 2021, of which 2.3 thous. tonnes were “hazardous” and 1.4 thous. tonnes were “non-hazardous”.

KTG Group generated 3.0 thous. tonnes for 10 months of 2021, of which 2.0 thous. tonnes were “hazardous” and 1.0 thous. tonnes were “non-hazardous”.

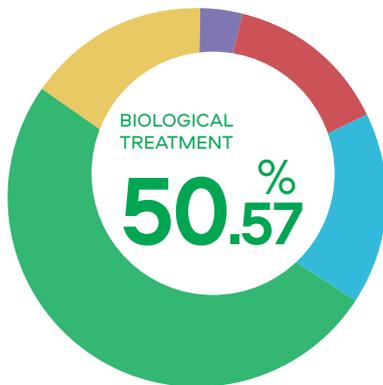
It is important to note when selecting waste recovery methods, the priority is given to modern waste recovery techniques, including those without secondary contamination of the environment.

50.57% of waste was biologically recovered, 16.2% of waste was thermally disposed, other significant waste management options are recycling, recovery, burial and reuse.

Dedicated contractors engaged to carry out waste management or disposal are monitored at SDE facilities; engaged contractors have the necessary permits in accordance with RoK laws; contractors’ waste management activities are monitored for compliance, contractors’ facilities are visited, documents confirming the work completion are checked, and control is exercised during the work on requests or under work schedule.

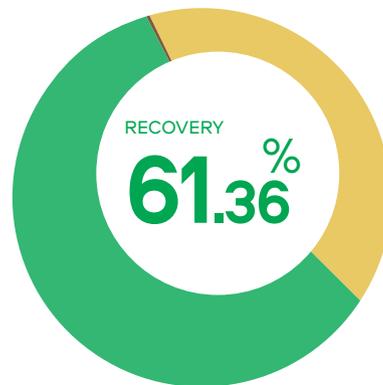
2021

**HAZARDOUS WASTE FOR 2021 BY HANDLING TYPE**



- Biological treatment 50.57%
- Reuse 0.03%
- Recycling 15.53%
- Landfilling 3.83%
- Recovery 13.84%
- Incineration (including thermal disposal methods) 16.20%

**NON-HAZARDOUS WASTE FOR 2021 BY HANDLING TYPE**



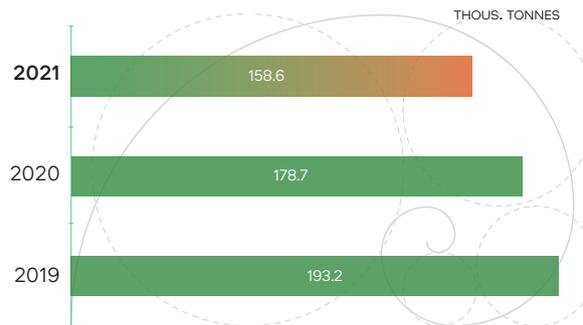
- Recovery 61.36%
- Reuse 0.15%
- Landfilling 38.49%

## Generation of Drilling Waste

OG7

KMG's production companies generated 158.6 thous. tonnes of drilling waste in 2021, of which: 33.7 thous. tonnes are waste drilling mud, 124.9 thous. tonnes are drilling cuttings (onshore drilling). For disposal purposes, all drilling waste from KMG Group's production companies is handed over to dedicated companies. The companies further dispose of waste by thermal and chemical methods, inertisation and biological treatment.

### OVERALL GENERATION OF DRILLING WASTE ACROSS KMG



Note:

Drilling waste generated by KTG Group in 2021 amounted to **1.8 thous. tonnes**, of which: **0.5 thous. tonnes** – waste drilling mud, **1.3 thous. tonnes** – drilling cuttings;

Drilling waste generated by KTG Group in 10 months of 2021 amounted to **1.5 thous. tonnes**, of which: **0.5 thous. tonnes** – waste drilling mud, **1.0 thous. tonnes** – drilling cuttings.

## DECOMMISSIONING AND RECLAMATION OF WORK SITES

In accordance with laws and regulations, KMG has legal obligations under certain contracts to dismantle and dispose of fixed assets and restore the land at each of the fields. In particular, KMG's obligations include the gradual shut-in of all unproductive wells and final shutting down of operations, such as the removal of pipelines, buildings and reclamation of the contract area, as well as decommissioning and environmental liabilities at the production site.

The Company calculates asset disposal liabilities separately for each contract. As of 31 December 2021, oil and gas asset disposal liabilities amounted to 67 bln tenge (as of 31 December 2020: 66 bln tenge). Reclamation and disposal processes for contract areas are governed by Subsoil and Subsoil Use Code of the Republic of Kazakhstan No. 125-VI ZRK dated 27 December 2017.

According to the Subsoil and Subsoil Use Code of the Republic of Kazakhstan:

- Subsoil use remediation shall be performed in accordance with the subsoil use remediation project approved by the subsoil user and having positive expert review opinions as stipulated by this Code and other laws of the Republic of Kazakhstan.
- Subsoil area preservation shall be performed in accordance with the subsoil area preservation project approved by the subsoil user and having positive expert review opinions as stipulated by this Code and other laws of the Republic of Kazakhstan.
- Process facilities shall be decommissioned or preserved in accordance with the process facility decommissioning or preservation project approved by the subsoil user and having positive expert review opinions as stipulated by this Code and other laws of the Republic of Kazakhstan, except for certain categories of wells specified in the rules for preservation and decommissioning during exploration and production of hydrocarbons, approved by the hydrocarbons authority, with respect to which the preservation and decommissioning is performed in accordance with the preservation and decommissioning plan.

Well abandonment requirements are specified in the Rules for Sealing and Abandonment during exploration and production of hydrocarbons and uranium mining approved by Order No. 200 of the Minister of Energy of the Republic of Kazakhstan dated 22 May 2018. Registered with the RoK Ministry of Justice under No. 17094 on 19 June 2018 (Chapter 4. Abandonment of oil, gas and injection wells for various purposes in hydrocarbon exploration and production).

## Trunk Oil and Gas Pipelines

In accordance with the Law of the Republic of Kazakhstan on Trunk Pipeline, which came into force on 4 July 2012, JSC “KazTransOil” has a legal obligation to decommission the trunk pipeline upon termination of operation and then carry out environment remediation measures, including land reclamation. The reserve for pipeline decommissioning and land reclamation obligation is estimated on the basis of the cost of dismantling and reclamation calculated by KMG. As of 31 December 2021, the carrying value of KMG Group’s reserve for pipeline decommissioning and land reclamation obligation amounted to 35 bln tenge (as of 31 December 2020: 114 bln tenge).

## OFFSHORE WELL CONTROL

KMG is engaged in geologic exploration works in Abai, Isatai, Zhenis and Al-Farabi areas in the Kazakhstan Sector of the Caspian Sea. Geologic exploration works under these projects is carried out by specially established joint ventures in order to share KMG’s risks and under Subsoil Use Contracts and Joint Operating Agreements signed by the Parties (ENI, Lukoil, etc.). Management decisions on offshore drilling and seismic acquisition in the joint ventures are made by KMG and Partners within the Operating Committees and their subcommittees (financial, technical, HSE, procurement) in full compliance with international standards and RoK laws. All responsibilities relating to offshore well control are set out in the Operating Committee Regulations and Joint Operating Agreement.

### CASE STUDY:

In 2021, preparatory works were performed together with LUKOIL PJSC to drill an exploration well in Zhenis area. Zhenis Block is located in the Kazakhstan Sector of the Caspian Sea at depths of 75-100 m. The distance from the block to the port of Aktau is 180 km and the license area is 6,848 sq. km. The main minimum obligations under the signed contract are to drill one exploration well and conduct 3D seismic acquisition. The operator of this project is Zhenis Operating Joint Venture. The new project in the Caspian Sea is an important step in expanding resource base in a region that is strategic for the Company and has significant accumulated expertise. The first exploration well is scheduled to be drilled in Zhenis area in 2022.

## OIL SPILL PREVENTION AND RESPONSE

Continuous preparedness for emergency oil spill response (hereinafter, EOSR) is an absolute priority for us.

The Caspian Sea is a unique natural water body which fragile ecosystem is particularly sensitive to oil pollution due to its enclosed nature. We have high requirements for environmental safety of offshore oil operations: before commencing any work, we conduct baseline environmental surveys in contract areas and assess our potential social and environmental impacts, as well as impact monitoring, emission monitoring and emergency monitoring – during and after operations.

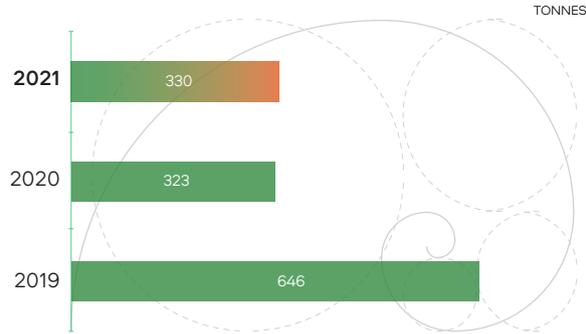
Prior to offshore drilling operations, we ensure that we are always prepared to respond to all possible emergency oil spills. Once the work is completed, we conduct continuous environmental monitoring of abandoned wells. Monitoring of abandoned wells in the contract areas includes observation of air quality, sea water and bottom sediment pollution, biodiversity status, as well as laboratory testing, photo and video recording of the wellheads of abandoned wells.

In our offshore operations, we strictly adhere to the following principles:

- Strict compliance with design solutions
- Zero discharges principle – all waste and waste water are removed to the shore
- Provision of fish protection devices for all floating crafts, no bilge water
- Operations are prohibited during spawning season from 1 April to 15 July
- Fishing from industrial vessels is prohibited
- Well testing and raw hydrocarbon flaring are prohibited at night
- Observing of special use conditions.

To provide EOSR services, Zhambyl Petroleum LLP entered into a contract with a consortium represented by KMG Systems & Services LLP, Kazmortransflot LLP and the Republican State Enterprise based on the Right of Economic Management “Professional Paramilitary Emergency Rescue Service”. During the appraisal well construction, EOSR vessels stay within 500 metres of the Caspian Explorer SEFDR.

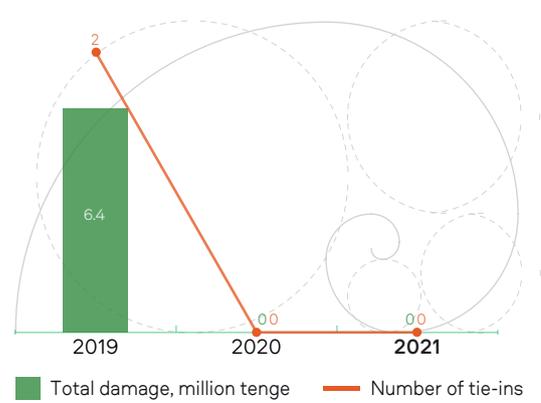
**OIL SPILL VOLUME**



The main cause of oil spills in the Company is oilfield pipeline ruptures caused by corrosion processes. The Company continues work to reduce the number of oilfield pipeline failures and ruptures by performing timely and high-quality pipeline inspection, reconstruction, replacement, inhibition and cleaning to improve pipeline integrity and reliability.

In close cooperation with law enforcement agencies, JSC “KazTransOil” has overcome the situation with criminal illegal tie-ins into the Company’s pipelines. Over the last 2.5 years, criminal tie-ins into trunk pipelines have been reduced to zero (in 2019, two tie-ins were identified, the damage amounted to 3.7 mln tenge; in 2020 and 2021, no criminal tie-ins were detected).

**UNAUTHORISED TIE-INS**



This has been achieved largely as a result of the following measures:

- Strengthening the monitoring of mobile teams using GPS systems and timely rounds and inspections of oil pipelines by mobile teams;
- Oil pipeline protection by means of Optosense monitoring system.

Continuous preparedness for emergency oil spill response (EOSR) is an absolute priority for us.



## Initiative to Develop Volunteering in Emergency Oil Spill Response

Considering how serious and important the volunteering is for EOSR, KMG Systems&Services LLP initiated development and implementation of EOSR Volunteering Development Programme in Atyrau and Mangystau Regions (hereinafter, the Programme). The Programme includes all volunteering aspects such as legal aspects of volunteering in the Republic of Kazakhstan and other countries, how to engage volunteers, how to register and manage volunteers before and during EOSR, it also classifies volunteers and tasks suitable for volunteers, rights and obligations of volunteers and basic personal safety for volunteers. The Programme shows the tasks to be addressed before the spill (preparation stage) and tasks in case of oil spill (operation stage).



The main goal of the project is to transfer the knowledge and train volunteers in the basics of EOSR and wildlife rescue.

As part of the project, a training video course was prepared about Transferring of Basic Knowledge on Wild Animals Rescue during Emergency Oil Spill Response Operations (<https://youtu.be/P1ru9py2vVs>). The target audience for the training video course is both potential volunteers for EOSR and other stakeholders, including government representatives, specialists from offshore oil companies, etc.

The video course will teach you about volunteer's personal safety, volunteer's rights and responsibilities, the impact of oil spills on wildlife, and what kind of work volunteers can do in wildlife rescue operations. It is important to understand that volunteers may not be involved in all wildlife rescue operations, as special training and experience in such operations is required for safe and effective work. The course shows which types of work a volunteer can do independently and which only under guidance of experts.

Anyone interested can fill in an application form on the corporate website of KMG Systems&Services LLP for a further 2-day training in Atyrau and Aktau in the basics of oil spill response and impacts.



## BIODIVERSITY CONSERVATION AND SUPPORT OF SPECIALLY PROTECTED NATURAL AREAS

### Protected Natural Areas within Our Footprint and Affected Species of Flora and Fauna

103-1, 103-2, 103-3, 304-1, 304-4, 306-5, OG4

North Caspian is the most productive part of the Caspian Sea. This part of the sea is rich with biological resources. The main commercial fish fauna includes 25 species, of which the most valued are sturgeons with 70-80% of their global reserve living in the basin.

Eastern water area of the North Caspian with deltas of Volga (within the RoK) and Ural is a part of the State Conservation Area in the North Caspian Sea. Wetlands of the North Caspian, particularly deltas of Volga, Ural and Emba, and the adjacent coast and the sea area itself are essential for Eurasia and support millions of water birds and semiaquatic birds during nesting, moulting, seasonal migrations and wintering. One of the largest Eurasian flyways, the Siberia – Black Sea – Mediterranean Sea flyway, crosses the North Caspian.

According to the baseline studies, more than 70 bird species (including 5 rare species from the Red Book of Kazakhstan) migrate through open areas of the North-East Caspian 20-60 km away from the shore. Little egret, spoonbills, pelicans, whooper swan, ferruginous duck and great black-headed gull are nesting near the shore. Swampen, white-tailed eagle and osprey are also observed flying.

Land cenoses are nesting grounds for 5 species from the RoK Red Book. Steppe eagle is the most common one. As for rare birds, avocets, oystercatcher, little egret may be observed in these areas.

The only large marine mammal (pinniped) of the Caspian Sea is Caspian seal (*Phoca caspica*). It is an endemic mammal species. Seals are spread throughout the Caspian Sea, although they vary in number in the North part depending on season. Seasonal distribution of animals across the sea area is based on three main phases of the annual cycle: reproduction, moulting and

feeding. Reproduction grounds are in the North Caspian that freezes in winter. During feeding period from April to September, seals mainly stay in the Middle and South Caspian. In summer, only a few animals (about 30,000) remain in the North Caspian, the majority of population moves to the deeper and colder South Caspian waters. They migrate to the North shallow waters in the late autumn, where water starts to freeze. The majority of population gathers in the North Caspian in October – November.

This area is essential to conserve biodiversity of Kazakhstan and the entire Eurasian continent and it needs to be continuously monitored and timely protected. From the very beginning of its operations in the North Caspian, KMG has focused on protection of environment of the region.

**Novinsky State Natural (Faunal) Reserve** of republican status was established to create optimal conditions for reproduction of flora and fauna, including species listed in the RoK Red Book. Protection status – reserve.

**Zhambyl area** is in the northern part of the Caspian Sea. The contract territory is within the Caspian Sea conservation area, and partially within Novinsky Reserve, although industrial sites do not touch the environmentally sensitive areas. This area has restrictions on production operations during the most environmentally sensitive period. During the studies in the water areas, there were no recorded abnormalities in natural conditions, environmental situation or unnatural factors that would cause concerns or increased attention.

**Isatai area** is in the northern part of the Caspian Sea, 45 km north of the coast of Bozashy Peninsula, in Mangystau Region.

**Dead Kultuk (Ustyurt)** is the habitat of the most characteristic Caspian species – flamingo, which was common in the north-east in the past, and is still using this part of the sea, moulting and non-breeding locally occurring birds near Komsomolets bay and Dead Kultuk and Kaidak sor. Flamingo (*Phoenicopterus roseus*) is a locally nesting, decreasing species. It is the only specimen of its species in Kazakhstan fauna. Until now, the main nesting grounds in Kazakhstan included Tengiz lake, Chelkarteniz lake and north-eastern coast of the Caspian Sea.

Komsomolets bay, Dead Kultuk and Kaidak sors are still regularly used by thousands of birds to spend summer and moult. Birds from Central Kazakhstan fly through these areas and enlarge the local non-nesting population in April and August-September. Up to 35 thousand birds migrate through Komsomolets bay each year.

**Mangystau Region.** Mangystau Region has a vast system of specially protected natural areas including Ustyurt State Nature Reserve and Kenderli-Kayasan Conservation Area of republican status, as well as 8 reserves and 1 natural park of regional subordination. Blotched snake (*Elaphe sauromates*) is a reptile listed in the Red Book of the Republic of Kazakhstan (2010) and inhabiting Mangystau Region. Afghan tortoise is a common, well spread species that is quite numerous in certain areas of Mangystau Region, nevertheless, according to criteria of the Red List of International Union for Conservation of Nature (IUCN) it is a vulnerable species.

**Kenderli-Kayasan Conservation Area** of republican status was established to preserve habitat and natural reproduction grounds of houbara bustard and saker falcon. Established status: conservation area, reserve, controlled status.

**Ustyurt State Nature Reserve** belongs to the highest category of specially protected areas of republican status. Ustyurt State Nature Reserve (USNR) was founded with the main goal of preserving the natural state of unique natural complexes, historical monuments, flora and fauna of Kazakhstan deserts. The Reserve is the main habitat of several species listed in the RoK Red Book and/or International IUCN Red List: goitered gazelle, Ustyurt mountain sheep – ural, caracal, honey badger, golden eagle, Eurasian eagle-owl, white scavenger vulture, houbara bustard, etc. According to the leading experts, the USNR meets the criteria of a UNESCO World Heritage Site and may receive this honorary status in the future, proving the highest international level of its value recognition.

For the first time in the history of observations of Ustyurt GPP, a live fore leopard was discovered in 2018, which was included in the Red Book in 2021. Formerly, the leopard was only known in Kazakhstan because it was killed by human on 3 occasions, including twice in Mangystau Region in 2007 and 2015. Leopards sometimes get to Mangystau from the neighbouring Turkmenistan, and considering the adequate food reserves (mountain sheep and goitered gazelle), they might possibly form here a local population if they were not hunted by human and if the habitats were

properly protected. There is at least 600 km between the Ustyurt Reserve to Kopetdag in Turkmenistan, where the leopard is positively known to live.

Over the last decades, certain species of mammals that are new for the region were found: desert long-eared bat in West Ustyurt, lesser mouse-eared bat and common noctule in North Ustyurt, honey badger in South-Western Ustyurt, golden jackal in Mangyshlak plains and Karagiye Depression, raccoon dog. Striped hyena was encountered in West Ustyurt and signs of Indian crested porcupine were observed, which has not been recorded in the area for more than 40 years.

**Kokzhide-Kumzhargan State Integrated Nature Reserve of local status.** This reserve accommodates two sites of nature reserve fund of republican status: Kokzhide Sands and Kokzhide Groundwater, which are included in the List of Geological Sites of the State Nature Reserve Fund of republican and international status.

**Urikhtau, Alibekmola and Kozhasay fields** are located in Mugalzhar District of Aktobe Region of the RoK. North-western part of the contract territory of Urikhtau field lays on the Kokzhide Sands, the fields also border the Kozhide-Kumzhargan State Integrated Nature Reserve of local status. To avoid groundwater pollution, environment is being regularly monitored both within the Group operations footprint and near the Kokzhide Sands adjoining the contract territory.

**Karazhambas field** is in the north-western part of Buzachi Peninsula, within Caspian Depression, in the territory bordering the Caspian Sea on the west. In the west, the field borders the State Nature Conservation Area of the North Caspian Sea. Industrial environmental monitoring includes biannual flora and fauna monitoring.



## PRODUCTION SITES WITHIN AND NEAR THE SPECIALLY PROTECTED NATURAL AREAS

Type of SPNA	Within borders	Adjacent borders (includes a part of territory)	Outside borders (located within 1-10 km)
Category IUCN I-IV	0	0	Kansu Samtyr
Category IUCN V-VI	Zhambyl Satpayev Isatay Dead Kultuk (Ustyurt)	Zhambyl Urikhtau	Alibekmola Kozhasai Karazhambas Rozhkovskoye
World heritage sites	–	–	–
Ramsar lands	–	–	–

## Our Contribution to Biodiversity Conservation in 2021:

304-2, OG4

As part of the Environmental Policy, we are committed to:

- not operate in specially protected natural areas of special value as habitats for rare, endangered and valuable animal species, carry out risk assessments when operating in environmentally sensitive areas.
- applying a hierarchy of biodiversity impact mitigation measures when planning and implementing its operations based on four key actions: prevention, minimisation, restoration and compensation of potential significant direct impacts.
- participating in research programmes and industry partnerships to further accumulate knowledge and develop innovative solutions for environmental and biodiversity protection.
- preventing illegal hunting, fishing and other use of flora and fauna by own employees and the employees of contractors and subcontractors in contract areas.

Baseline environmental studies, well drilling and testing took place on the sites within the North Caspian state nature conservation area. There are currently no significant man-caused effects in these regions, which would restrict free movement of wild animals and birds within their habitats. During drilling operations, the following activities have environmental impacts: drilling rig installation, well drilling and testing, navigation. The impact factors are increased concentrations of suspended solids in water during offshore construction, disturbance of natural structure of bottom deposits due to intensive navigation among other things, physical effects of noise.

Industrial environmental monitoring of the environment, abandoned wells and research and development (R&D) in the areas of hydrology, hydrochemistry, hydrobiology and ichthyology are conducted to compensate for unavoidable damage to fish resources caused by operations.

### CASE STUDIES

In order to preserve and replenish the biodiversity of the Caspian Sea, Zhenis Operating LLP, together with the Atyrau Sturgeon Hatchery, released 166,210 young sturgeons into the Ural River. The place, time and method of stocking were in line with the scientific recommendations of the Scientific Production Centre of Fisheries of the Republic of Kazakhstan. Seagoing vessels are designed and built under the supervision of the Classification Society "Russian Maritime Register of Shipping" in accordance with International Convention MARPOL-73/78 (International Convention for Prevention of Pollution from Ships). Vessels are fuelled using systems that prevent spills and fuel leaks. Vessels are provided with equipment preventing the vessel deck against contamination by oil products, discharge of contaminated waste waters into water bodies. Vessels have sea valve grating to prevent entry of fish.

Water is supplied to the refinery facilities for industrial and firefighting purposes from the Ural River by the Water Intake Facility, which is equipped with a new fish protection structure and meets modern environmental requirements. A water jet louvered screen type device is designed to prevent juvenile fish from entering the water intake ports. The device operates throughout the navigation period. During the inter-navigation period, the water intake ports are covered with the available mesh.

Construction of an appraisal well in East Urikhtau field and an appraisal directional well in South Urikhtau field has started in Urikhtau, which borders with specially protected lands. Groundwater impact factor is the well drilling that may contaminate groundwater. Contaminants may also enter groundwater with infiltrating precipitation from the surface of industrial and domestic waste accumulations, oil-contaminated areas, oil and formation water storage areas. In this respect, KMG implements a set of measures to protect groundwater and prevent its contamination, clogging or depletion. Well design isolates groundwater reservoirs by running the casing down to 80-85 meters, and regular observations are performed with regard to occurrence conditions, level and quality of groundwater in areas of current and potential pollution.

Another impact factor of industrial development of the territory on biodiversity is power transmission lines that pose major danger for bird fauna. The network of overhead power lines constantly expands and invades the natural bird habitats, often causing their mass death. This concern is particularly relevant for predatory birds living in forest-free steppes and semi-deserts where overhead line pylons are the most attractive for these birds to sit on.

Areas of high danger for birds on electrical installations are identified and investigated during special investigations

or industrial environmental control. Special polymeric bird protection devices (BPD) are installed on overhead power lines (6-10 kV) to prevent bird deaths from electrocution. This type of BPD, although widely used abroad, is only beginning to be used in Kazakhstan. Its advantages lie in the fact that all BPD elements are made of dielectric materials. BPD installation does not require complex preparatory work (welding, drilling of beams, etc.). And the insulation of the current carrying wire eliminates dangerous short-circuits involving birds.

For example, during overhauls of 6-10 kV overhead lines in KTO, the AS-50/8 steel-aluminium wire that has exhausted its standard service life is replaced with SIP-3 self-supporting protected wire. 223 km of SIP-3 wire were installed during overhauls. Use of self-supporting protected wires insulates the bird from exposed live parts, thus protecting the birds from electrocution and death.

In October 2021, KMG experts took part in an online discussion on the topic of “Current Problems of Rare Birds of Prey in the RoK” held by the Association of Environmental Organisations of Kazakhstan. Current topics of biodiversity conservation, bird deaths on power lines, migration of birds, population of rare species, the problem of Lake Small Taldykol were discussed.

	Onshore Operations		Offshore Operations	
	2020	2021	2020	2021
Areas for which biodiversity is covered by an EIA or similar document (%)	100	100	100	100
Areas subject to regular environmental monitoring (%)	100	100	100	100
Areas with abandoned wells subject to regular monitoring (%)	100	100	100	100

Each of us can contribute to conservation of biodiversity in our country by following the simple rules:

- Do not litter in the street and natural areas;
- Care for the environment;
- Do not engage in illegal hunting and fishing;
- Focus on conservation of biodiversity when planning environmental activities;
- Report violations of environmental law by legal entities and individuals to authorized officers and to [hse@kmg.kz](mailto:hse@kmg.kz);
- Record the presence of red-book listed animals and plants in an area by taking photos and tagging locations, and send to [hse@kmg.kz](mailto:hse@kmg.kz);
- Participate in campaigns and programmes to preserve biodiversity in Kazakhstan;
- Send your initiatives, ideas and projects to [hse@kmg.kz](mailto:hse@kmg.kz).

## Offshore Spill Prevention

Continuous preparedness for emergency oil spill response (EOSR) is an absolute priority for us. The Caspian Sea is a unique natural water body which fragile ecosystem is particularly sensitive to oil pollution due to its enclosed nature. We have high requirements for environmental safety of offshore oil operations: before commencing any work, we conduct baseline environmental surveys in contract areas and assess our potential social and environmental impacts, as well as impact monitoring, emission monitoring and emergency monitoring – during and after operations. Prior to offshore drilling operations, we ensure that we are always prepared to respond to all possible emergency oil spills. Once the work is completed, we conduct continuous environmental monitoring of abandoned wells. Monitoring of abandoned wells in the contract areas includes observation of air quality, sea water and bottom sediment pollution, biodiversity status, as well as laboratory testing, photo and video recording of the wellheads of abandoned wells.

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### INITIATIVE TO DEVELOP VOLUNTEERING IN EMERGENCY OIL SPILL RESPONSE

On 08 October 2021, KMG Systems & Services LLP (hereinafter, KMGSS), a SDE of KMG, held training for volunteers for potential emergency oil spill response (EOSR) at the Bautino Offshore Operations Support Base (OOSB) in Mangystau Region as part of Kaspiige Qamqorlyq (Caring for the Caspian Sea) Volunteer Campaign initiated by the Company. The training course was attended by 18 volunteers, as well as five staff members of the Mangystau Region Department of Emergency Situations (DES). The training programme includes a theoretical and practical part on the basics of environmental oil contamination response. During training, the volunteers were introduced to EOSR equipment and how it works, learned about spill response techniques, and had the opportunity to handle the equipment themselves, including participating in deploying special booms.

The **Kaspiige Qamqorlyq (Caring for the Caspian Sea)** volunteer campaign was initiated by the Head of State in 2020 and includes volunteers from among the residents of Atyrau and Mangystau Regions – like-minded people united by the desire to provide voluntary and selfless assistance to preserve the

environment and biological resources of their native land.

To this end, KMG SS intends to conduct regular training and recruitment of local university students and local communities as EOSR volunteers, share information, guidance and other literature, arrange venues (rooms/conference halls, etc.) for training, media and PR support for the volunteering, and facilitate the integration of volunteering with stakeholders to enhance and strengthen EOSR cooperation.



## ENVIRONMENTAL PAYMENTS AND COSTS

To effectively manage environmental risks, the Company is continuously improving its approaches to environmental management and allocates necessary resources for environmental protection.

Environmental costs include taxes on permitted emissions, cost of environmental activities, insurance, compensatory environmental measures, investments to prevent environmental impact, etc. We increased the budget for historic waste recycling and contaminated land remediation. Investments in waste recycling tripled since 2015 and make up over a third of all environmental costs. Tax payments for emissions increased in 2021 due to flaring by one of producing SDEs during the test production. Environmental costs in 2021 amounted to 33.4 bln tenge, which is 12 bln tenge more than in 2020. The bulk of costs are from recycling of oil waste, introduction of more environmentally friendly technologies and upgrade of treatment facilities.

## Environmental Law Compliance

103-1, 103-2, 103-3, 307-1

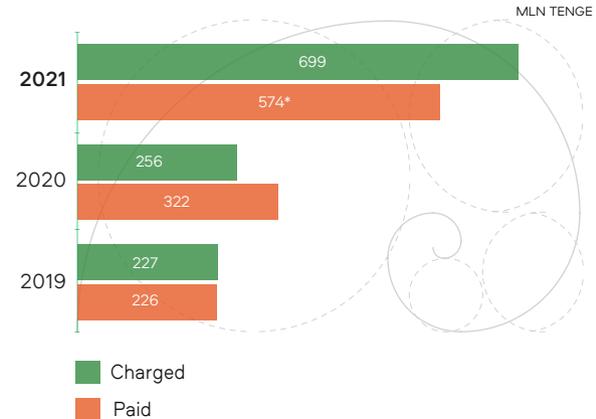
We are committed to conducting our operations under the laws of the Republic of Kazakhstan and take appropriate measures to prevent any damage to the environment.

The Company will keep on identifying non-compliances with the environmental law of the Republic of Kazakhstan at its production facilities, identifying problems and managing risks in order to take measures for preventing any non-compliances with legislative requirements.

## PENALTIES CHARGED AND PAID, MLN TENGE.

This chart shows the amounts of penalties charged and paid.

### ENVIRONMENTAL PENALTIES

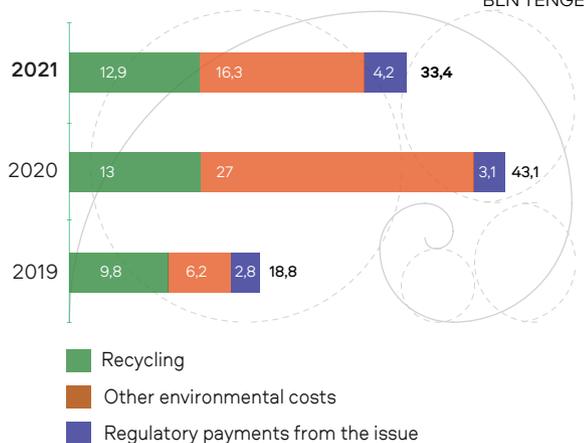


\*In December 2021, Kazakhoil Aktobe LLP was charged for damages amounting to 5.9 bln tenge, which KOA declines. An appeal has been initiated.

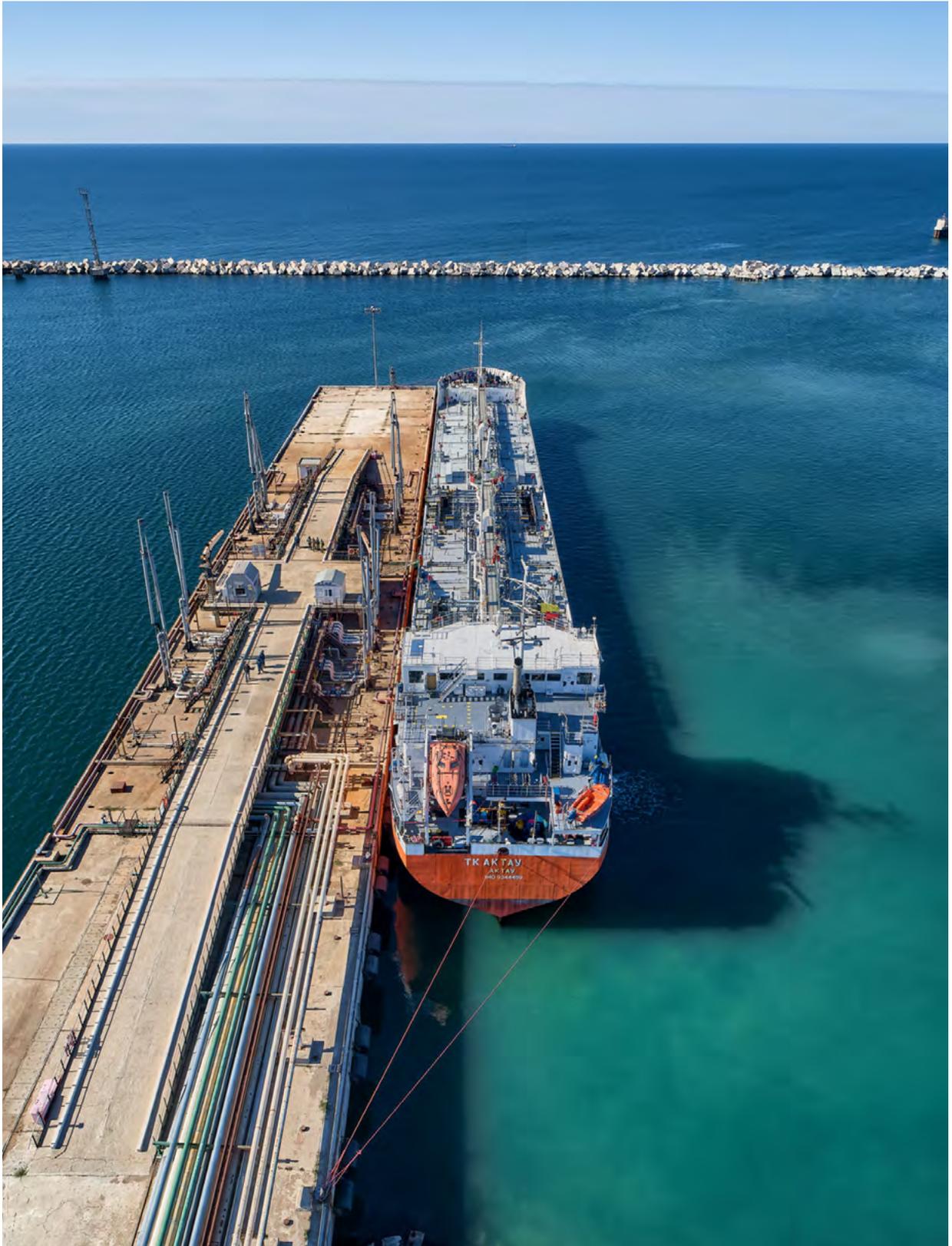
Note: Environmental penalties to KTG for 10 months of 2021 amounted to 29 mln tenge, of which 29 mln tenge have been paid.

2021

### DYNAMICS OF ENVIRONMENTAL PAYMENTS AND COSTS AT KMG GROUP OF COMPANIES



Note: Environmental payments and costs for KTG for 10 months in 2021 amounted to 6.6 bln tenge, including 0.0803 bln tenge for recycling, 0.27 bln tenge for other environmental costs and 6.3 bln tenge are regulatory emission fees.



2021

# SOCIAL RESPONSIBILITY





- Principle 1 Businesses should support and respect the protection of 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



## OUR MANAGEMENT APPROACH

102-7, 102-8, 103-1, 103-2, 103-3, 401-1, 401-2, 401-3, 404-3

The concept of our HR policy is aimed at creating conditions for adding value to the human capital within KMG Group.

To achieve this goal, the following HR objectives are to be implemented:

- **Develop the corporate culture and improve managers' skills** – development of corporate culture based on the meritocracy and 'commercial' reasoning with a focus on succession, commitment to results, and readiness to assume responsibility. Development of leadership competencies;
- **Unify and improve HR efficiency** – building a customer-oriented HR function that would render a comprehensive support for KMG strategy implementation. Unification of the HR processes and standards that incorporate the best international and internal practices of KMG subsidiaries. Creation of the common information space via the unified automation solutions. Transfer of routine operations that do not bring the added value to the Shared Services Centre;
- **Improve the personnel quality with due regard to business needs** – identification of the relevant job qualification requirements, ensuring that the employees meet these requirements through the system processes (selection, development, evaluation, etc.) and individual projects (such as assessment of fitness for the job). Enhancement of the key personnel competencies required to achieve the strategic goals (e.g., Development of Human Capital in Upstream

programme, programmes for the development of project and investment management competencies, competencies for successful IPO of the company, etc.);

- **Achieve a positive engagement rate and social stability** – more emphasis on the systematic approach to management of engagement and social stability via regular measurements, development and implementation of plans. Achievement and maintenance of positive values for engagement (60% or more) and social stability (61% or more);
- **Implement a comprehensive talent management system from talent acquisition to succession and management of remuneration** – implementation of the talent management system ensuring transparency, conditions and motivation of personnel for the purpose of retention, promotion and appointment to key positions of the effective and potential employees of KMG Group. The key elements of the comprehensive talent management system will include:
  - employment transparency and neutrality;
  - dependence of the remuneration levels on the performance and market appraisal results;
  - succession in the key positions;
  - identification of talents and development of the talent pool;
  - employees having development plans based on the evaluation of performance and business needs;
  - priority to internal candidates when selecting for the key positions in the KMG Group.

- **Effective headcount management to improve performance** – effective planning and forecasting of human resources with due regard to the current and target needs of KMG. Development of the uniform norms and standards of the staff size, implementation of staff size optimisation programmes (e.g., withdrawal of non-specialised functions) via economically feasible tools, and redistribution of personnel between manpower-surplus and manpower-deficit entities.

The HR policy concept relies on the following key principles:

1. **Balance between the interests of employees and KMG** – formation of KMG’s HR Policy and other documents regulating personnel management should consider the interests of employees and KMG in equal measure.
2. **Uniform HR policy for the entire KMG Group** – the areas of activities and development associated with personnel management shall be uniform for all companies of the KMG Group.
3. **Shifting the role of HR from administrative supporting to a strategic one for the business** – the HR function should become a strategic partner for the business, rather than merely perform an administrative supporting function.
4. **Creating added value for the business** – in their daily activities, the employees of the HR function should take into account how the results of their activities create an added value for an in-house customer, and prioritise their activities accordingly.
5. **Optimal organisational structure and headcount** – the HR function should build the most optimal organisational structure in the Company based on the best industry practices, and promote continuous improvement of KMG to increase labour productivity.
6. **Manpower planning based on business needs and labour market conditions** – manpower and personnel cost planning should be based on the plans and needs of the business areas, taking into account the labour market conditions.
7. **Continuous improvement of learning and advanced training programmes** – the HR function should create all necessary conditions for the continuous improvement of knowledge, skills and competencies of employees and managers by studying modern learning programmes and incorporating them in the learning and development process.
8. **Building a self-learning organisation based on a 70-20-10 model** – the employees should bear personal responsibility for their continuous development by way of: (1) on-the-job learning by solving difficult tasks, participating in projects, distance learning (70% of the whole learning), (2) interaction with colleagues and managers by way of feedback, coaching and mentoring (20% of the whole learning), (3) participation in seminars, trainings, conferences, lectures and other employee development activities (10% of the whole learning).
9. **Responsibility of managers for personnel management** – managers of all levels shall bear responsibility for personnel management, and the HR function shall render necessary support and provide the required tools.
10. **Creating the culture of employees engagement in the joint achievement of strategic goals** – the HR function promotes formation of the culture of understanding, interest, and support of strategic, operational and production goals by employees at all KMG levels.
11. **Creating conditions for the employee motivation** – the HR function should form processes, systems, and provide the required tools to ensure the effective employee motivation using various forms and methods.
12. **Preventing violations of laws** – the HR function should ensure compliance with the laws during the documentation, alternation and termination of employment, development and use of internal documents, rules and procedures used by KMG.

## EMPLOYMENT

In 2021, KMG prevented shutdown of operations in the regions where it operates and was able to ensure employment of over 55,000 people in the country.

The actual headcount at the end of 2021 across KMG Group was 44,650, and 2,787 were outstaffed.

Considering that the Company's operations are fraught with hard, hazardous and harmful working conditions, the share of male employees is 82%, female employees – 18%.

Production personnel make up 92% of the total workforce, while administrative and management personnel make up 8%.

### EMPLOYEES BY GENDER FOR 2019-2021, %

годы	2019	2020	2021
men	82	81	82
women	18	19	18

Note: Men at KTG for 10 months – 11,141 people. Women at KTG for 10 months – 2,318 people

### EMPLOYEES BY GENDER AND CATEGORY FOR THE REPORTING PERIOD, %

Categories of employees	Men	Women	Share of employees of each category in the total headcount, %
<b>Managers</b>	82	18	11
<b>Specialists</b>	60	40	20
<b>Workers</b>	88	12	69

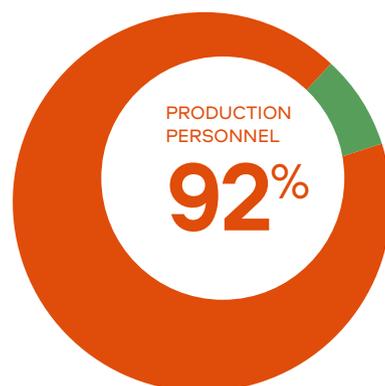
Note:

Managers at KTG for 10 months – 1,501 people, men – 1,297 people, women – 230 people.

Specialists at KTG for 10 months – 3,836 people, men – 2,543 people, women – 1,355 people

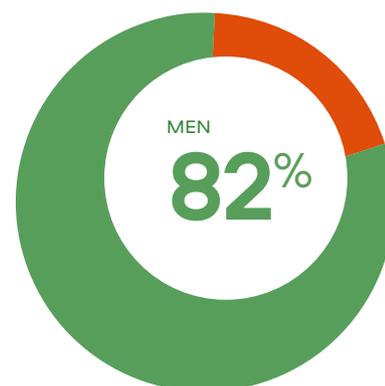
Workers at KTG for 10 months – 7,323 people, men – 7,159 people, women – 330 people.

### EMPLOYEES BY CATEGORY FOR THE REPORTING PERIOD



■ Production Personnel 92%  
■ Administration and Management 8%

### EMPLOYEES BY GENDER FOR THE REPORTING PERIOD



■ Men 82%  
■ Women 18%

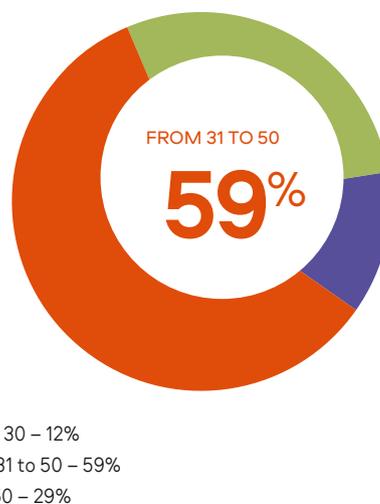
In 2021, the share of female managers in KMG Group was 18% of the total number of managers in KMG Group, female specialists – 40% of the total number of specialists, female workers – 12% of women of the total number of working professions. The percentage of women has not changed compared to last year.

In terms of age categories, the major share of employees is in the group aged 31 to 50 – 59%, where men account for 81% and women for 19%.

The number of employees aged above 50 is 29% of the total headcount, where men account for 81% and women for 19%.

The share of youth aged under 30 is 12% of the total headcount, where men account for 86% and women for 14%.

### EMPLOYEES BY AGE GROUPS FOR THE REPORTING PERIOD



### KMG EMPLOYEES BY AGE GROUPS FOR 2019-2021, %

age	2019	2020	2021
under 30	14	12	12
from 31 to 50	59	60	59
over 50	27	28	29

Note: KTG for 10 months of 2021: under 30 – 2,373 people, from 31 to 50 – 7,890 people, over 50 – 3,198 people.

### NEWLY HIRED EMPLOYEES IN 2019-2021, %

years	2019	2020	2021
% of hired employees	7	8	9

Note: KTG for 10 months – 2%

The number of newly hired employees in 2021 is 4,266<sup>7</sup> people or 9% of the average staff number.

Number of employees whose employment was terminated during the reporting period was 2,936<sup>8</sup> or 6%

of the average staff number, including by age groups: under 30 – 29% (24% in 2020, 22% in 2019), from 31 to 50 – 44% (48% in 2020, 49% in 2019), over 50 – 27% (28% in 2020, 29% in 2019).

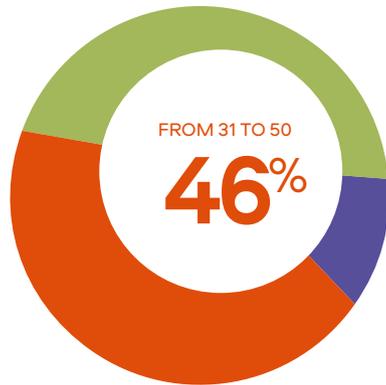
years	2019	2020	2021
Staff turnover rate for KMG Group	7%	6%	6%

\*Staff turnover rate =  $A/B \times 100$ , where A is the number of employees who left voluntarily, on agreement of the parties or through the employee's fault, at the end of the reporting period; B is the average staff number for the reporting period.

<sup>7</sup> KTG for 10 months – 1,649 people

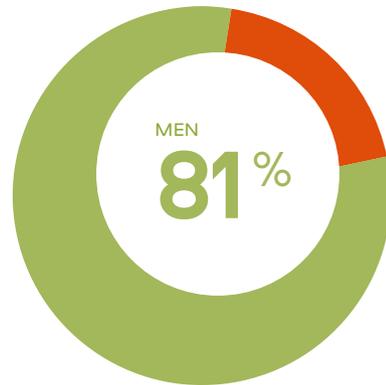
<sup>8</sup> KTG for 10 months – 496 people

**NEWLY HIRED EMPLOYEES BY AGE GROUPS FOR THE REPORTING PERIOD**



- under 30 – 43%
- from 31 to 50 – 46%
- over 50 – 11%

**NEWLY HIRED EMPLOYEES BY GENDER FOR THE REPORTING PERIOD**



- men – 81%
- women – 19%

The number of employees on unpaid childcare leave at the end of the reporting period was 768<sup>9</sup>, with the share of female employees being 95%, male – 5%.

The performance of 43% of all Company’s employees was assessed during the reporting period (54% in 2020, 48%

in 2019). Including: 20% women, 80% men. By category of employees: managers – 11%, specialists – 25%, workers – 64%.

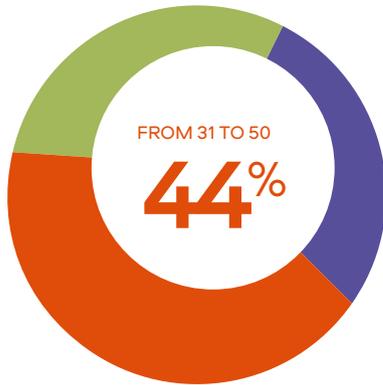
Women on maternity leave in the reporting period totalled 231<sup>10</sup> people.



<sup>9</sup> KTG for 10 months – 332 people

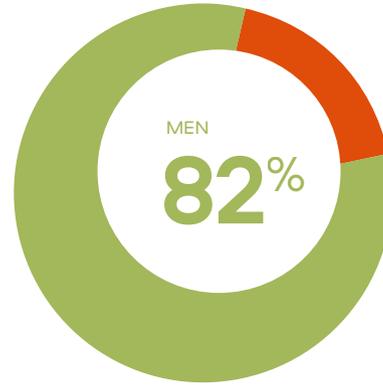
<sup>10</sup> KTG for 10 months – 42 people

**EMPLOYEES WITH WHOM THE LABOUR RELATIONS WERE TERMINATED DURING THE REPORTING PERIOD BY AGE CATEGORY**



- under 30 – 29%
- from 31 to 50 – 44%
- over 50 – 27%

**EMPLOYEES WITH WHOM THE LABOUR RELATIONS WERE TERMINATED DURING THE REPORTING PERIOD BY GENDER**

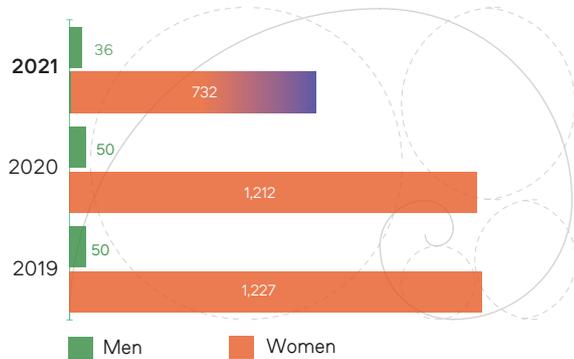


- men 82%
- women 18%

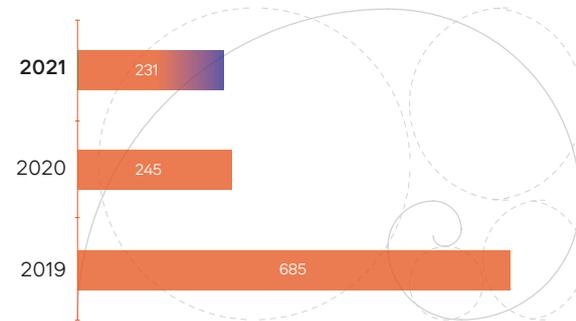
**EMPLOYEES ON CHILDCARE LEAVE**

PEOPLE

2021



**WOMEN ON MATERNITY LEAVE FOR 2019–2021**



## EQUAL OPPORTUNITY AND PERSONNEL MOTIVATION

103-1, 103-2, 103-3, 202-1, 202-2, 405-1, 405-2

There are no differences in the basic salary and bonus system depending on the gender in KMG Group. The level of remuneration in KMG Group companies is tied to a position, i.e. male and female employees occupying similar positions receive equal remuneration and other payments provided by the company's remuneration rules.

Our approach to personnel motivation is based on the principles of decent pay, transparency and respect for the rights of all employees. All changes in the remuneration system are made with due regard to opinions and suggestions of stakeholders.

The remuneration calculation system for the supreme management body and top managers is focused on performance, incentives, increase in labour productivity and efficiency, and includes the elements of short-term benefits based on the achievement of KPIs. In accordance with the best world practices, the top managers' performance reflects the economic, environmental and social objectives of the Group.

Upstream companies have a Uniform Remuneration System (UPS) in place, aimed to provide a uniform procedure for paying remuneration in all business units and boost employees' interest in labour results. This system specifies a number of conditions under which employees are provided compensations, benefits and rewards; one of such criteria is the Regional Coefficient – a ratio of relative

increase in remuneration in order to compensate for extra expenses and increased labour input due to working in regions with severe weather conditions. The highest coefficient is applicable to Mangystau and Atyrau Regions.

The ratio of entry-level remuneration in the Group to the national statutory minimum remuneration for 2021 is within 5:1 (6:1 in 2020 and 2019).

The proportion of top managers<sup>11</sup> in the regions of operation<sup>12</sup>, hired from the local population is 87%<sup>13</sup> (87% in 2020, 86% in 2019).

The proportion of management members is 11% of the total headcount. This includes 18% women (18% in 2020, 16.5% in 2019), 82% men (82% in 2020, 83.5% in 2019).

## HUMAN RIGHTS AND SOCIAL ASSISTANCE

102-41, 103-1, 103-2, 103-3, 406-1, 407-1, 408-1, 409-1

### Social Stability

The Company strictly complies with the requirements and does not violate the RoK labour law, which states that no one may be subjected to any discrimination in exercise of their labour rights on the grounds of origin, social, official status and material position, gender, race, nationality, language, religious beliefs, convictions, place of residence, age, physical disability or affiliation with public associations. No facts of discrimination were recorded during the reporting period.

We do not use child labour or forced labour, we acknowledge the equal rights of all employees, irrespective of their race, religion and gender.

Each employee of the Company has equal opportunities in exercising their labour rights and freedoms. Moreover,

the Company is actively engaged in negotiations with employees for signing or amending the collective bargaining agreement, strictly observes the time limits for negotiations and ensures functioning of appropriate commissions, provides information necessary to conduct negotiations, strictly fulfils the conditions of the collective bargaining agreement.

In accordance with the labour law, any employee has the right to participate through their representatives in collective negotiations and drafting of the collective bargaining agreement as well as to review the signed collective bargaining agreement.

<sup>11</sup> Top managers – Chief Executive Officer and their deputies

<sup>12</sup> Region of operation – region (area, district) of operations

<sup>13</sup> KTG 10 months – 100 %

The Company's activities impose no restrictions on the rights to freedom of association or collective bargaining by types of activities or on territorial basis. Being a socially responsible company, we fully support this right and create a favourable environment for exercise of employees' rights to freedom of association.

For the purpose of unification, we have developed a model collective bargaining agreement that establishes the uniform principles of remuneration, social assistance, working conditions, rest and work hours, etc. The model collective bargaining agreement sets forth a step-wise algorithm for solving collective labour disputes, if they arise. Model requirements for collective bargaining agreements within KMG Group enable building labour relations on the legal basis, preventing improper increase or decrease in employee benefits, recommending consistent actions in case of labour disputes in order to prevent conflicts and relieve tension.

In order to maintain social stability in the workforce of KMG Group companies, the Company implements a set of measures aimed at preventing discontent and tension among employees of SDEs. The taken measures allow companies to control the situation and maintain business continuity.

For example, social assistance to employees contributes significantly to maintaining the social stability of workforce.

Currently, 24 production companies<sup>14</sup> of KMG Group have collective agreements in place. In 2021, the number of KMG Group employees covered by collective agreements was around 43,000<sup>15</sup> (56,066 in 2020, 58,710 in 2019) (excluding KTG and its SDEs).

All collective agreements of KMG's companies provide for more than 35 forms of social assistance for employees and their family members as well as retirees.

## Benefits Package

KMG provides its employees with guaranteed social package that includes various types of social allowances, securities and compensations: material assistance for health improvement to annual leave, maternity benefits, monthly payments to employees on leave for childcare until children reach the age of 1.5, compensation for termination of employment in case of impossibility to transfer to another job, due to full loss of capacity, disability, one-time payment in case of death of the employee for funeral, one-time payment to the family of the employee who died as a result of a job-related accident. The Company also provides social securities for voluntary medical insurance in case of illness and organisation of rest for employees' children in children's health camps in Kazakhstan.

In addition, the employees may be provided with additional types of social assistance. These forms of social assistance are set forth in collective bargaining agreements or internal regulatory documents of the enterprise. Such payments include payments for the anniversary date, retirement age, marriage, short-term leave in case of marriage, childbirth, death of relatives, for medical care and surgeries in case the costs exceed the insurance limit, benefits for disabled children of employees, benefits for employees in desperate need, school supplies for the first of September, assistance to employees in desperate need, etc.

In 2021, KMG Group retained all social benefits and securities and paid in accordance with collective agreements. Overall, in 2021, the social assistance to the employees and retirees was provided for the amount of over 22 bln tenge. There are no plans to reduce the amount of social assistance to employees this year.

In case of any change in the working conditions, the Company notifies the employee in writing at least fifteen calendar days in advance. The minimum period of notification about considerable changes in the Company's operations is 4 weeks.

KMG places special emphasis on implementation of internal socially-oriented programmes. In promoting them, the emphasis is primarily placed on creating a favourable environment for the Company's employees. These are measures of material inducement, retention and professional development, and ensuring workplace safety.

<sup>14</sup> KTG for 10 months – 7 agreements

<sup>15</sup> KTG for 10 months – 13,110 people

The prevention of social tensions, labour disputes and conflicts is a particular area of focus.

## Internal Communications

There is constant and constructive communication with employees and their representatives. A unified internal communication system is designed to improve efficiency of feedback. All facilities hold mandatory scheduled meetings between management and employees to discuss social, domestic, work issues.

The key objective of the internal communication system is to inform employees in a timely manner about the goals and objectives of operations, to communicate the current situation in the company to employees, and to “hear” the issues raised by employees.

Main internal communication tools are the performance assessment meeting of the CEO with employees, meetings of the management with trade unions, personal meetings of employees with the CEO, etc.

One important factor in the social wellbeing of employees, in addition to remuneration and social assistance, is working environment, including social and welfare conditions. Field workers, especially those working on a rotational basis, are offered decent living conditions, sanitary facilities, canteens, recreation, leisure, and sports areas.

In addition, the Social Engagement and Communications Centre of Samruk-Kazyna JSC conducted its annual Social Stability Index (SSI) measurement in 2021. According to ongoing social stability surveys, the Company’s integral social stability index for 2021 was 79 percent.

Based on the survey, the Action Plans will be developed for each company to minimise and eliminate all areas of concern identified in the Social Stability Index measurement, which cover the identified problems in the company that affect the social wellbeing of employees (internal communications, food quality, living conditions, provision of personal protective equipment, training, career development, etc.).



An engagement and satisfaction survey was also conducted in 2021 among the administrative and managerial personnel of KMG Corporate Centre, which amounted to 83% for the reporting period (2020 – 81%, 2019 – 62%).

All KMG's production companies allow each employee to address questions to the company's management and receive a timely response by introducing internal communication tools, according to which the systematic biannual performance assessment meeting are held between CEOs and employees and meetings between managers and the trade union.

In 2021, performance assessment meetings of CEOs with employees were held online due to the epidemiological situation in the country.

In addition, in order to create and maintain effective channels of direct communication between employers and employees in SDEs, to inform employees in a timely

manner about goals and objectives of operations in SDEs, to communicate the current situation in the company to employees, to create a positive image of the company among employees, to monitor the social and psychological climate among the workforce, the SDE CEOs receive employees on personal matters, each SDE has a CEO blog and a corporate information board, corporate information website, displays for video announcements are installed to communicate internal corporate information to employees. Information stands are used to bring prompt announcements and messages to the notice of employees.

Meetings are held between the management and SDE trade union on a quarterly basis to address the most pressing issues concerning the implementation of the collective agreement, labour discipline, handling of employees' appeals, health and safety issues, social benefits and compensation and other socially important issues in the company.



## Trade Unions

The Company interacts with trade unions as part of the social partnership established by the labour law at the industrial and regional levels. At the industrial level, the main interaction parameters (social securities, labour organisation, principles of remuneration, employment, gender and youth policy, occupational health and safety, prevention and resolution of labour conflicts, etc.) are set forth in the Sectoral Agreement in Oil & Gas, Oil Refining and Petrochemical Industries of Kazakhstan for 2020-2022, which was developed with active involvement of representatives of KMG and its companies.

KMG Group has 28 trade union committees including local trade unions that protect the interests of over 35 thousand employees (**excluding KTG and its SDEs**).

At the regional level, the regional committees for social partnership operate, which, apart from regional employment and occupational health issues, deal with specific collective labour disputes. All KMG companies have conciliatory committees in place.

## KMG's Health Management Programme

The Personnel Health Management Strategic Initiative is part of the strategic goal of Sustainable Development and Gradual Reduction in Carbon Intensity of Operations of 2022-2031 Development Strategy of JSC NC "KazMunayGas".

In 2021-2022, nine SDEs of JSC NC "KazMunayGas" (KGM, EMG, AR, KTO, KTM, KOA, OMG, MMG, KBM) diagnosed the health management processes for voluntary health insurance/service and industrial medicine.

As a result, a draft concept of KMG's Health Management Programme was developed with initiatives focusing on three main areas:

- dealing with the pandemic and its aftermath;
- preventing occupational diseases;
- raising employee awareness and motivation for a healthy lifestyle through the use of digital tools.

The purpose of the Concept is to create a transparent health management process in KMG Group and to improve the medical and preventive care system (preservation, promotion and improvement of health).

Key objectives of KMG Health Management Programme to be developed by the Company in 2022-2023 as part of Health and Industrial Medicine Standards:

- Optimize pandemic control and pandemic response measures in accordance with existing regulations and work specifics of the Company's group;
- Reduce the risk of occupational diseases by introducing an effective healthcare system for employees of the Group with an integrated approach and using all the possibilities of the healthcare services provided by the RoK;
- Develop mechanisms to strengthen the involvement and motivation of the Company's employees to lead healthy lifestyles.

# OCCUPATIONAL HEALTH AND SAFETY

103-1, 103-2, 103-3, 306-3, 403-2

JSC NC "KazMunayGas" and its subsidiaries and dependent entities prioritise the lives and health of employees over the production performance, prevention of occupational health and safety hazards. KMG Group's Health and Safety Policy is based on the commitment of top management to health and safety, aiming to involve every employee in development of safety culture. Management of the Company and its SDEs exercise zero tolerance to losses and damage due to accidents and incidents, abuse of alcohol, drugs, psychotropic substances and their equivalents, road traffic accidents. The Company's commits to follow the national law alongside requirements of international and national standards.

## Key Figures of 2021

Protecting the lives and health of employees and safe working conditions are the top priorities for the company. One of KMG's strategic initiatives is Sustainable Development of All Business Areas, so the company pays particular attention to maintaining a high level of occupational safety in line with global standards and best practices.

At the end of 2021, the number of work-related accidents in KMG has decreased by 7% compared to last year (from 30 in 2020 to 28 in 2021), the number of injured workers is at the same level as in 2020.

In 2021, there was one work-related fatal accident where 3 employees died (due to fire at Petromidia Refinery, Romania).

## ACCIDENT AND FATALITY RATE IN KMG

Indicator*	2019	2020	2021	IOGP
Lost Time Accident Rate <i>per mln man-hours</i>	0.31	0.25	0.31	0.20
Fatal Accident Rate <i>per 100 mln man-hours</i>	1.28	0	2.93	0.56

\*Including the lost time accident rate for KTG for 2021: 0.18, fatality rate is 4.51.

Key OHS indicators*	UoM	2019	2020	2021	D2021/2020	%
Accidents	Case	41	30	28	-2	-7
Injured in accidents	Person	48	32	32	0	-
Road traffic accidents	Incident	44	15	22	+7	47
Fires	Incident	10	6	6	-	-

\* During the 10 months of 2021, 3 accidents were reported at KTG where 4 people were injured.

The number of road traffic accidents increased by 47% (from 15 accidents in 2020 to 22 in 2021). However, of the 22

accidents that occurred in 2021, 10 were caused by a third party. Number of fires in 2021 – 6 incidents.

### About the Fire at Petromidia Refinery, Romania

On 2 July 2021, at 12:15, 122V8 feed tank exploded and a fire broke out at Petromidia Refinery. The fire was extinguished at 15:10. Five people were injured in the incident, of whom: 3 workers died; 2 workers fully recovered. Affected workers and their families received financial, medical and psychological support from the Company.

### Resumption of Petromidia Refinery Operation

The refinery was restarted on 24 September 2021 – the crude oil refining process started at the oil unit after being shut down for 83 days (from 2 July 2021 to 24 September 2021) and also after the proper approvals for restart were obtained. Between 24 and 28 September 2021, the main refining units (soft hydrocracker, naphtha hydrotreater, catalytic cracker (FCC), delayed coker) were successfully started up. The only non-functional unit is DHT, which was most affected by the 2 July 2021 incident and, according to the updated plan, will be restarted after the planned shutdown of the refinery in April 2022.

### Actions

More than 20 companies were involved in the work and the total number of people who restarted the units was around 1000 (employees of Rompetrol Rafinare, Rominserv and specialists from contracting companies). Inspections, repairs and significant replacement of pipes have been carried out, and necessary equipment has been restored. Instrumentation and electrical cables were also replaced, all elements and equipment related to operational safety were checked at each unit, and refinery personnel were retrained and recertified.

### HSE Measures

KMGI and Petromidia Refinery management has taken additional training measures with amendments to HSE-ES convention, risk analysis for operational personnel and subcontractors, additional training on HSE plan, waste management plan, environmental protection for operational personnel and subcontractors, a centralised safety meeting was held with HSE representatives and management of KMGI, contractor and subcontractors. KMGI is cooperating with the official authorities to investigate the accident under Romanian law.

### Expert Review

- The Romanian authorised body INSEMEX and KMGI are investigating the cause of the fire at the request of the Romanian Prosecutor's Office: the report is due in the first half of this year.
- A report has been received from Omniais Vienna Insurance on status of damage and cause of fire;
- As instructed by NC KMG's Board of Directors, KMGI received an Independent Investigation Report from GEXCON on the causes of the fire and recommendations for safety measures.

### Preventive Actions

Based on the recommendation of GEXCON, KMGI has developed a corrective action plan. Actions are currently taken in the following areas:

- Safety enhancement measures at Petromidia Refinery hydrotreaters (implementation of additional protection for high-pressure systems);
- Fire-fighting system restoration programme (improvement of reliability and integrity of the firefighting system and off-site utility networks);
- Centralised warning system actions (upgrade and automation of the emergency warning system as planned);
- Personal protective equipment (PPE) actions (stricter requirements for the standard of protective clothing for workers).

To prevent similar incidents in the future and improve process safety management, KMGI has developed information materials for hazard studies and personnel informing of past and potential incidents in the workplace.

KMGI's corrective action plan has been sent to KMG, AR and POCR occupational safety management departments.

Lessons learned from previous incidents were also sent to KMG, AR and POCR as part of the on-site process safety management.

## Production Process Safety Management

306-3

Since 2021, the Company has been gradually implementing a Process Safety Management System (PSM) at KMG's production facilities, which aims to prevent major catastrophic incidents (emergencies, incidents, fires and accidents), including:

- Maintaining integrity of assets and process equipment;
- Establishing safe operational rules, standards and procedures in accordance with Statutory Requirements of the Republic of Kazakhstan, industry standards, best international PSM practices and approaches (IOGP, OSHA);
- Identifying process risks and employing relevant measures to prevent or mitigate them;
- Avoiding damage to and loss of life and health of the Company's employees and population, environment, financial and legal implications, property and assets, reputation and image.

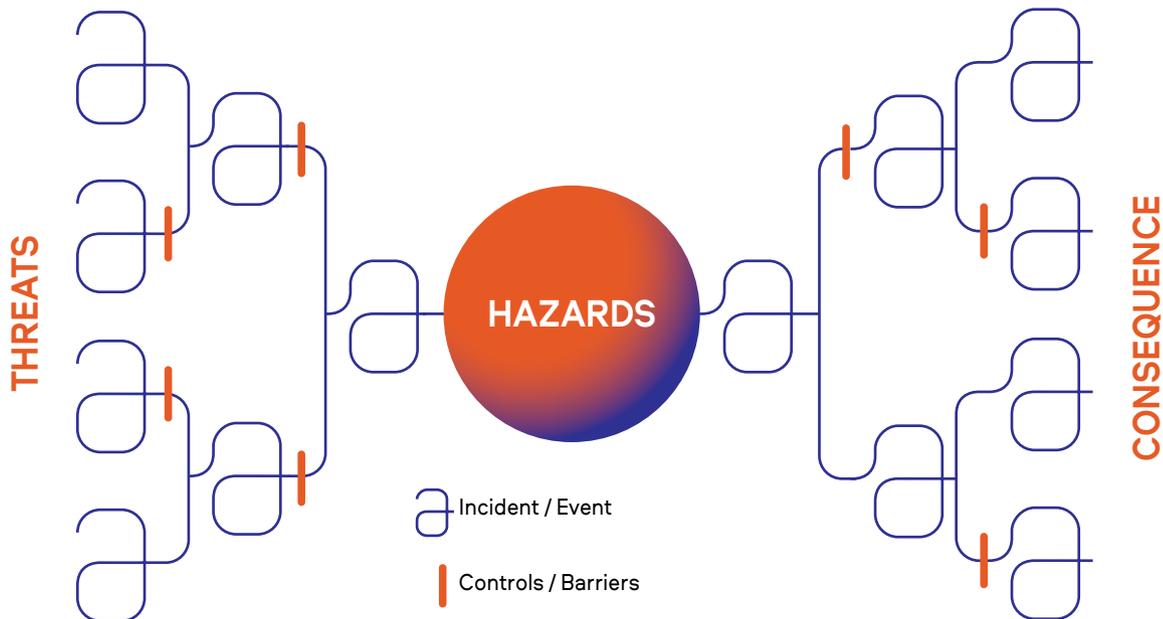
The Company believes that the combination of engineering and management elements is effective and aims to prevent major catastrophic incidents involving loss of containment of process equipment and resulting in structural collapse, explosions, fires, destructive releases and spills of hazardous substances (chemicals, oil and petroleum products). Such engineering and management elements surpass the workplace safety management requirements, as they affect people, property and environment.

The Company uses key performance indicators (KPIs) to monitor and review the Process Safety Management System:

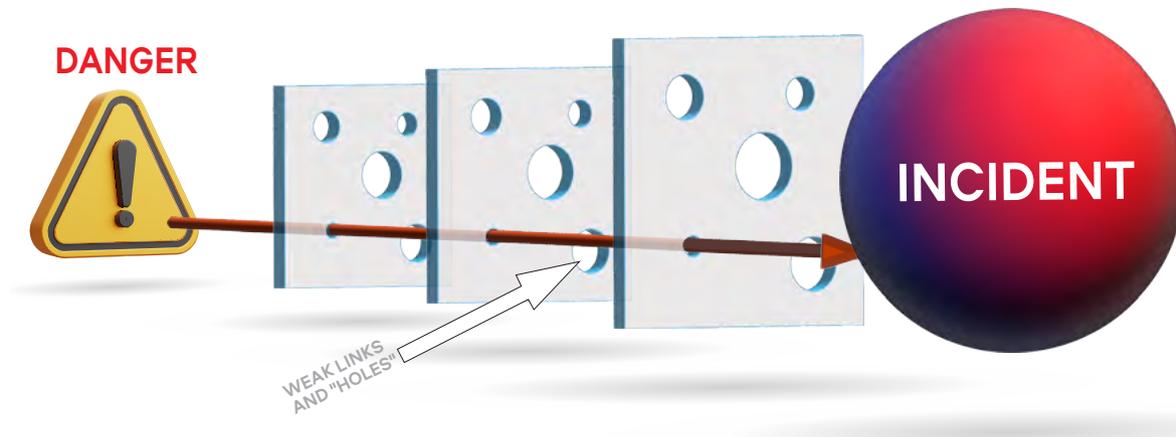
- Lagging indicators allowing to track, record the actual integrity, system failures, number of incidents;
- Leading indicators that systematically measure the indicators allowing to assess the performance of protective and control systems and mechanisms that make up barriers.

To further implement the Process Safety Management System, a scorecard is planned for 2022 to verify the operation of critical protective measures/barriers at the Company's production facilities.

2021



## PROTECTIVE BARRIERS



### Transportation Safety

In terms of RTA statistics, we would like to point out that there are accident risk factors that are beyond the control of the Company. One such factor is the large number of vehicles (more than 10,500) that are in daily use at our production facilities. The second factor is the geographical location of the Company's subsidiaries, scattered throughout the Republic of Kazakhstan, as well as their location in major cities and settlements where there is a high risk of RTA caused by a third party. Namely: out of the total of 22 accidents in 2021, 10 were caused by other road users.

In order to reduce the risk of road accidents, the Company has implemented the following set of transport safety measures:

- Recommendations for the Action Plan on the RTA Prevention List in Subsidiaries have been developed to operate vehicles safely and to preserve the life and health of the Company's employees.
- Training courses have been held for drivers as scheduled to test their knowledge of RoK Traffic Rules and updated corporate documents of the Company's Policy and Regulations on the Safe Operation of Land Vehicles.
- In order to improve transport safety, the Company and its contractors held a Seatbelt precaution event in March 2021.
- A Safe Vehicle Driving video was filmed in September 2021 in order to raise awareness among employees of

the Company and subsidiaries, and promote a culture of safe driving.

- Winter Traffic Safety preventive actions were taken in November 2021 due to the autumn-winter period and high risk associated with the seasonal increase in traffic accidents.
- Travel Management pilot project was initiated and implemented at Embamunaygas JSC through creation of a safe driving culture based on the best international practices, modern digital solutions and process automation. EMG facilities have completed stage I of this project – a unified vehicle monitoring system has been implemented. Stage II scheduled for Q1 2022 includes the route deviation monitoring and connection of contractors' vehicles to the unified vehicle monitoring system.

In 2022, it is planned to replicate the Travel Management project aimed at improving transport safety, reducing road accidents, smart planning and accounting, and monitoring the efficiency and targeted use of vehicles and fuel and lubricants.

It is also planned to train coaches from among the Company employees (transport/road safety engineers) in 2022 in Defensive Driving to international accreditations from OPITO, ROSPA, etc.

## Fire Safety

In 2021, there were 6 fires in KMG Group (the number of fires is same as in 2020), of which 2 incidents are major fires with loss of life (3 deaths and 1 injury) and significant material damage.

Investigations into the circumstances and causes of fires identified the following main systemic causes:

- poor commitment and leadership of top management and line managers;
- low safety culture and competence of managers/officers;
- insufficient funding for industrial and fire safety measures;
- inappropriate risk assessment and management of 'barriers';
- poor fire evacuation drills in dormitories and camps.

**In order to prevent and avoid fires and ignitions, the Company has taken the following preventive fire safety measures:**

- Following the occurred major fires, the measures to prevent and avoid fires in the Company were immediately put into effect with special emphasis placed on fire drills and exercises both at the production facilities and in the camps.
- Based on the analysis of reports submitted by the subsidiaries, in November and December 2021, random inspections of implementation of measures to prevent and avoid fires in dormitories and camps were conducted in all business areas of the Company.
- In order to strengthen control over compliance with fire safety requirements and improve the Company's preparedness for prompt fire response, 2022-2024 Comprehensive Plan was developed and approved to provide short, medium and long-term, as well as preventive measures to ensure fire safety at the Company's facilities.
- The rules for inspection and assessment of fire prevention and response preparedness of KMG Group companies have been updated and re-approved subject to requirements of RoK law in the field of fire safety, HSE Management System Guidelines in KMG Group, international standards and IOGP recommendations.
- In order to promote fire safety and raise personnel awareness, a fire safety leaflet for employees and visitors was developed and Fire Safety Month was held from 4 October to 4 November 2021 in the Company's office.
- In order to reduce the risk of fires and ignitions during New Year holidays and long weekends, in December 2021 a letter was sent to all business areas of the Company to take additional measures to comply with fire and electrical safety requirements at both production facilities and camps.

The following initiatives are planned for 2022 to improve industrial and fire safety in the Company:

- Introduction of new approaches to HAZOP study using a third-party specialist company in Rompetrol;
- Comprehensive risk assessment identifying potentially hazardous facilities and equipment using the Risk Based Inspection (RBI) method with the support of Samruk-Kazyna JSC;
- Implementation of short-term measures of 2022-2024 Comprehensive Fire Safety Plan approved by the Chairman of the Company's Management Board;
- Review and assessment of the preparedness of non-state firefighting services to prevent and extinguish fires at the Company's facilities as part of the Contractor Management Process.

# PRODUCTION SANITARY AND WORKPLACE HYGIENE

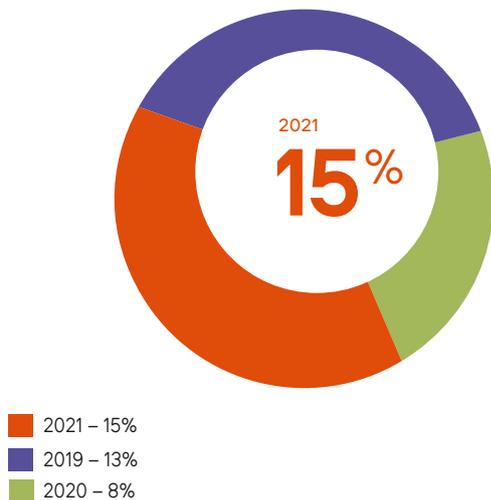
103-1, 103-2, 103-3, 403-1, 403-3, 403-4, 403-5, 403-6, 403-7, 403-8, 403-9, 403-10

The Company has implemented an occupational health and safety management system in accordance with RoK laws and international standards for occupational health and safety. The company has a proactive policy to protect its employees' health and wellness, irrespective of the production process.

The number of non-injury-related fatalities among employees of SDEs increased by 7 cases, or 87.5%, versus 2020. The increase was mainly due to the presence of cardiovascular diseases and complications from coronavirus infection among the employees.

The occupational health and safety management system has compliance assessment tools for provision of medical stations, risk management and medical emergency response arrangement.

## NUMBER OF NON-INJURY-RELATED FATALITIES



The key objectives of the Company's health and safety management system are:

- Establishing uniform requirements for the production process to maintain and improve the health of workers;
- Identifying and reducing the risks (dangerous and harmful occupational factors) through improvement of occupational health and ergonomics, industrial hygiene in the workplace;
- Applying preventive controls based on the health risk assessment and mitigation;
- Promoting and encouraging the healthy lifestyle for employees during and after working hours.

An assessment of the Company's occupational health and safety management system and the development of measures to improve it are carried out twice a year (every six months).

The Company regularly implements a range of measures to improve working conditions and prevent occupational diseases at its production facilities.

A working group was established in June 2021 involving two medical experts under the Roadmap to improve the efficiency of health management in KMG Group.

To implement the Roadmap, the health care of KMG Group employees was analysed with a field visit to SDEs: Kazgermunaigas; Embamunaygas; KazTransOil; AR; Kazakhoil Aktobe; KazakhTurkMunay. A Personnel Health Management Programme has been developed.

The strategic initiative to develop this Programme has been incorporated into KMG Strategy for 2022-2031. The Programme is focused on three main areas:

- dealing with the pandemic and its aftermath;
- preventing occupational diseases;
- raising employee awareness and motivation for a healthy lifestyle.

The following actions were taken in 2021:

1. Health and safety officers have been appointed in SDEs;
2. Measures for pre-shift health checks of workers and their clearance for work have been strengthened;
3. Case monitoring of workers with chronic cardiovascular disease (CVD) by a health care provider;
4. Medical station staff is fully equipped to conduct pre-shift medical examinations;

5. Work conditions and risks are assessed to determine the age group of workers at risk, and measures are taken to reduce the health and occupational hazards;
6. Measures for primary prevention of CVDs have been strengthened, including both therapeutic measures during exacerbations and therapeutic measures to prevent them.

The main efforts of KMG are aimed at improving the quality of medical services provided by specialised organisations under contracts, including mandatory preliminary (upon hiring) and periodic medical examinations (screening) for employees engaged in heavy work and work in harmful and hazardous working conditions.

No occupational diseases have been reported in KMG Group.

## RESPONDING TO COVID-19 PANDEMIC – OCCUPATIONAL SAFETY

2021

In order to prevent the incidence and minimise the spread of COVID-19 coronavirus infection (hereinafter, COVID) and to reduce the impact on production processes, all necessary organisational measures to counteract the epidemic and appropriate comprehensive measures are being taken across the group, including:

- At the level of KMG's Corporate Centre, the Crisis Management Team and response centres at KMG subsidiaries continuously monitor and control the situation and make the necessary managerial decisions to prevent proliferation of COVID, involving action algorithms when COVID is identified, and develop business continuity and business process recovery plans;
- Pre-shift testing for COVID of all shift workers together with contractors and mass testing of workers in SDEs are conducted and employees are educated about the pandemic with awareness of dangers of the disease and the need to take epidemiological precautions;
- Restrictions continue to be imposed on public events;
- Sufficient personal protective equipment and disinfectants are provided for protection of personnel and for disinfection;
- Measures have been put in place to deal with suspected or detected cases, with all workers warned to report immediately at the first sign of symptoms of COVID, positive test results, and liability for concealing or falsifying test results and violations of quarantine;
- Awareness-raising on preventive measures (use of antiseptics, masks, social distance and body temperature measurement), hygiene and disinfection is regularly carried out among workers for prevention of COVID and compliance with anti-epidemiological measures;
- In the event of focal diseases among the employee, quarantine is introduced with a reduction in the number of personnel involved in operations or use of standby teams and, where possible, personnel is transferred to remote work.

Overall, KMG Group continues to implement a set of preventive measures and strengthened sanitary and disinfection measures in accordance with the established regulations on controlling the epidemic.

Since the beginning of the state vaccination campaign, KMG has introduced action plans to manage and promote vaccination among employees, which include active awareness raising to explain how important it is to get a vaccine to achieve collective immunity and ensure steady and continuous work at the Group's production facilities.

The KMG Group's employees get vaccinated in local hospitals and private medical institutions. For this, the KMG's facilities have all necessary conditions: vaccination points set up in central offices, dedicated points at fields and in medical centres.

For the most part, the employees have a positive attitude towards the vaccination campaign and actively participate in it. When each of the two components is received, all employees are entitled to two paid days off.

At that, in accordance with current health authority regulations, workers who have received both components of the vaccine are free to enter the fields without undergoing PCR tests.



Business area	Number of employees	Number / share of vaccinated with the first component		Number / share of fully vaccinated (both components)	
KMG CC	606	432	71%	416	69%
Oil refining and petrochemistry	5,545	5,207	94%	5,151	93%
Transportation	7,894	7,176	91%	7,062	89%
Service	14,790	11,577	78%	10,884	74%
Exploration and production*	36,646	25,447	69%	24,234	66%
<b>Total for the group:</b>	<b>65,481</b>	<b>49,839</b>	<b>76%</b>	<b>47 747</b>	<b>73%</b>

\*Including employees of KNP operators (TCO, NCOC, KPO)

As of 31 December 2021, 50,000 employees (76% of the total headcount) had been vaccinated across the group, of whom 48,000 (73%) had been fully vaccinated (both components).

SDEs as well as KMG's administrative building use the Ashyq application to control access of employees. The

Corporate Centre has successfully integrated ACS (Access Control System) with the Ashyq information system (access with red or yellow status is automatically blocked by ACS, when the status changes to green or blue, the access is restored).

## PERSONNEL DEVELOPMENT

103-1, 103-2, 103-3, 404-1, 404-2

KMG Group has implemented a unified personnel training and development process in accordance with the approved Human Resources Policy. The need to train managerial, administrative and engineering personnel is based on Individual Development Plans following the results of regular comprehensive personnel performance assessments and needs stated by employees' direct supervisors based on the objectives of the business unit.

Production personnel training is based on assessment of professional knowledge, skills and business needs. Therefore, planning of employee training is strictly regulated, and depends on the specific business goals and objectives.

KMG provides personnel training and development, implements new approaches and programmes for development of employees of KMG Group on an annual basis.

Starting in 2021, compulsory training in occupational occupational health and safety, industrial safety and fire-technical minimum pass on the platform of KMG Engineering LLP.



**An Onboarding Course has been developed to cover information on the company's history and values, as well as sustainability issues. The Onboarding Course is intended for newly hired workers.**

Pursuant to item 2 of Resolution No. 23 of the Government of the Republic of Kazakhstan dated 27 January 2017 on Approval of 2017-2019 Action Plan to Implement the State Programme for Development and Functioning of Languages in the Republic of Kazakhstan for 2011-2020, the 2017-2019 Action Plan of JSC NC "KazMunayGas" to Implement the State Programme for Development and Functioning of Languages in the Republic of Kazakhstan for 2011-2020 was approved.



**As part of this Action Plan, there were continuous Kazakh language courses were organized for KMG employees, taking into account the results of testing.**

KMG has four management systems in accordance 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).

These management systems have been certified and KMG declares to its stakeholders that the quality of services, environmental protection, occupational health and safety, and information security are under manageable conditions and control of the company.



**Each of KMG's business units has designated employees in charge of management systems, and IMS and ISMS. 46 employees took part.**

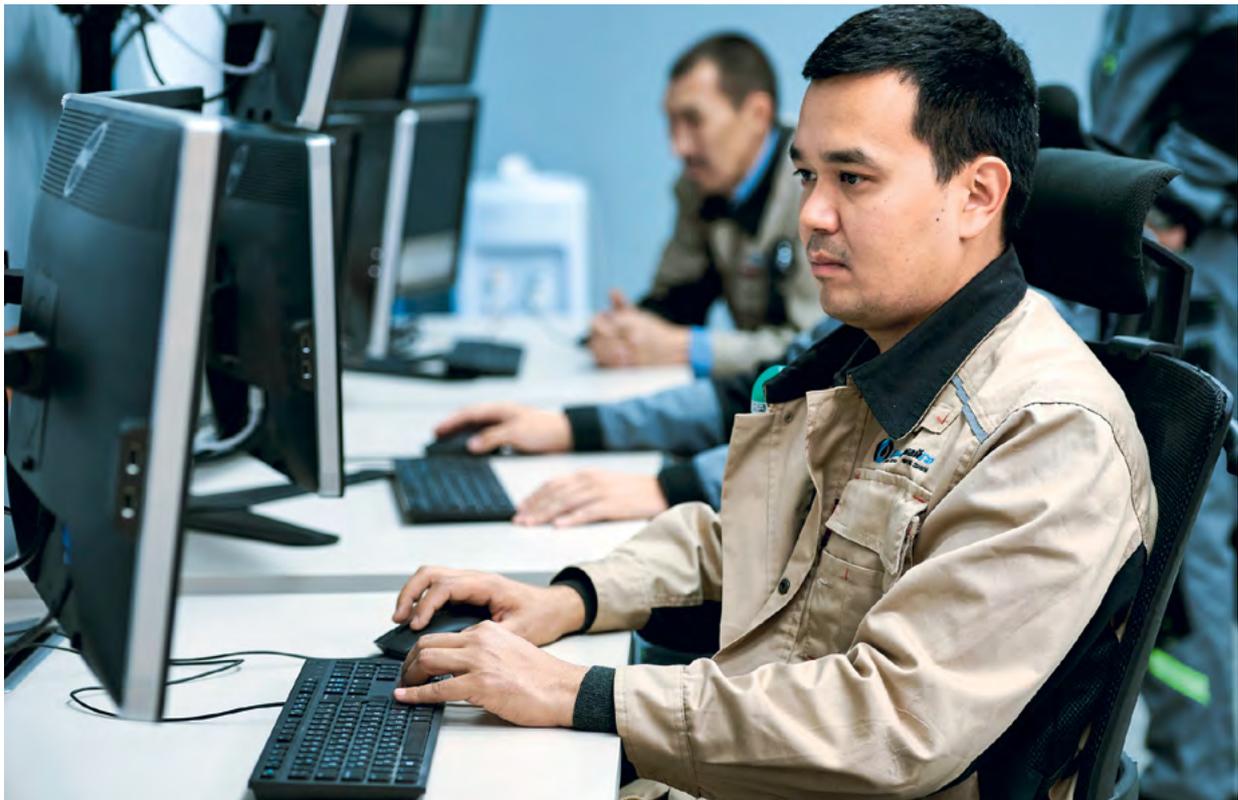
In order to implement the Compliance Risk Minimisation Action Plan and for systematic quality control of compliance by the Company and its employees with the legal and ethical standards in the field of compliance, **the Compliance Monitoring System Arrangement and Compliance Risk Management training was provided for all employees of the Corporate Centre.**

The training programme includes a brief introduction to compliance monitoring and anti-corruption law (RoK law, UKBA, FCPA, Sapin II); conflict of interest (declaration, settlement); dealing with government authorities and politically exposed persons; reputation risks; compliance risks and controls in business processes (procurement, HR, M&A, marketing, etc.); Company's Hotline and more.



**Effective thinking method training was launched for top and middle managers of SDEs and CC.**

The module discusses analytical tools, conceptual maps and, most importantly, practical tools of strategic management



Sub-topics of the programme:

- Critical thinking in management activities;
- Strategic management;
- Operational management;
- Intelligence maps.

Innovative technology integration is one of KMG's priorities.

A unified approach to integrating digital transformation into the production cycle at KMG's production facilities has been prepared and is being actively implemented.

**In order to immerse the top management in the subject of digital transformation, KMG and SKOLKOVO Moscow School of Management have jointly launched a Digital Transformation Management Training Programme involving speakers from among digitalisation managers at major Russian production companies such as Sibur, Severstal and Gazprom.**

The training allowed to achieve the following programme objectives:

- Immerse in the subject of digital transformation (understanding the need and value);
- Analyse the key challenges, opportunities and threats facing the industry in relation to digitalisation;
- Explore the practices of advanced benchmark companies and current digital transformation tools.

## Establishment of a Multifunctional Shared Service Centre for JSC NC "KazMunayGas" Group

Participation in international training conference about Shared Service Centres has been arranged under the project roadmap for Creation of Multifunctional Shared Service Centre of JSC NC "KazMunayGas".

The training allowed to achieved the following programme objectives:

- How Process Mining can improve your automation programme.
- Develop a holistic human capital development programme for the future workforce.
- Digital transformation of the Russian Railways Social and Personnel Centre. Case studies.
- Fast-track creation of a SSC.

- Change management in creation and development of SSC

Setting up a new financial centre in fully virtual mode. Trivium Packaging BSC case.

- Talent market. AI for HR, a successful personnel transformation programme, continuous feedback and performance management.
- SSC transformation: Why we don't like the term 'customer-oriented'.
- Panel discussion on: "Launching SSC on the outsourcing provider market: opportunities and risks, pros and cons"
- "Maintenance support – expert and technical functions in SSC".
- A single IT platform for SSC services
- SSC HR as a precursor to HR Zero.
- Introducing gamification to develop non-financial employee motivation and team building in remote working environments
- Panel discussion on: "Tips for beginners: what steps to take before creating a SSC".

The average annual number of academic hours per employee is 16.7 hours<sup>16</sup> (14.7 hours in 2020, 17.6 hours in 2019), including 16.4 hours per man (14.6 hours in 2020, 18.0 hours in 2019) and 18.6 hours per woman (16.0 hours in 2020, 15.1 hours in 2019).

At the same time, it should be noted that employees are trained and developed irrespective of their gender and position.

### ANNUAL AVERAGE NUMBER OF HOURS PER EMPLOYEE BY CATEGORY



- managers – 20.4 hours
- specialists – 22 hours
- officers – 14.8 hours

## MAIN TOPICS OF TRAINING AND ADVANCED TRAINING PROGRAMMES

- |   |  |
|---|--|
|  Personal and Business Training          |  Information Technologies           |
|  HR Management                           |  Language Learning                  |
|  Internal Control and Audit              |  Mediation and Negotiation Training |
|  Ecology, OHS, CD&E                      |  Training in Production Areas       |
|  Procurement                             |  Blue-Collar Job Training           |
|  Economics and Finance                   |  Master's Programmes, Mini-MBA      |
|  Corporate Governance Project Management |  On-the-job Training                |
|  Document Support                        |  |

### Information on the project for Succession Plan for Key Positions – MANSAP

In 2020, a Succession Plan creation procedure was developed by KMG's HR Department and reviewed by the Nomination and Remuneration Committee of KMG's Board of Directors as instructed by KMG's Board of Directors.

According to this Procedure, a project was launched to develop a Succession Plan for the key positions of KMG Group – MANSAP.



The project provides for formation of a succession pool for three position levels based on the results of appraisal procedures:

**Pool A** – Succession Plan for Members of KMG's Management Board and SDE CEOs;

**Pool B** – Succession Plan for Managerial Employees of KMG/SDEs;

**Pool C** – Succession Plan for KMG/SDE unit heads.



At the end of 2021, as part of this project:

- The Nomination and Remuneration Committee of KMG's Board of Directors (Minutes No. 1/2021 dated 9 February 2021) resolved to approve a succession pool for Pool A positions;
- The Leadership Educational Programme has been approved and launched together with the Moscow School of Management SKOLKOVO for the Pool A successors.
- KMG's Management Board (Minutes No. 31 dated 16 September 2021) resolved to approve a succession pool for Pool B positions;
- Selection procedures have been implemented to develop the Succession Plan for Pool C positions

The talent pool forming is aimed at improving the management efficiency through transparent selection and improvement of managers' competencies.

## Project Management Training in KMG Group

As part of the implementation of project management, since 2020 the systematic efforts has been made to improve the competence of project personnel.

Training in basics, project management subject areas, project review, and employee certification to international PMI and IPMA requirements is provided centrally by the company's corporate centre, with most training delivered by the company's own coaches.



**In total, more than 1,500 employees of KMG and its SDEs have been trained over the past two years, including more than 400 employees in 2021. Also in 2021, a**

**course on the role of top management in the successful project implementation was held for more than 70 executives of KMG and its SDEs.**

The Company believes that sustainability of the corporate project management system and performance in projects can be achieved primarily through training.



**In 2021, the corporate project management training was arranged for KMG's top and middle managers as part of Zhanaru Project. The aim of this training is to create a pool of KMG project specialists and to**

**optimise the cost and efficiency of training by selecting**

**and sending the employees only based on actual need (operational need). 17 employees of CC and 10 employees of SDEs were trained during the implementation period.**

## Work with Students and Young Specialists

KMG hosted 27 students from various universities in Kazakhstan for on-the-job training and pre-graduation internships, which were announced in Q1 2020. Student internships were suspended after the restrictions related to COVID-19 were imposed.

1. Qualification requirements for graduates are expanding on an ongoing basis due to increasing globalisation and continuous changes in industry. KMG Group is actively engaged with educational institutions to develop and promote a practice-oriented approach to training the next generation of specialists and unlocking the professional qualities of students.



**A dual learning programme is implemented to train skilled workers in close cooperation between companies and educational**

**institutions: the apprentices learn their trade on the job. Between 2018 and 2021, 244 students from educational institutions took part in the programme, 98 of whom were employed by KMG's production enterprises (Embamunaygas JSC, Pavlodar Oil Chemistry Refinery LLP, Atyrau Refinery LLP).**

2. Considering the Petrochemical Industry Development Programme of the Republic of Kazakhstan currently being implemented and two large-scale oil and gas chemical plants to be launched, there is an active work in Atyrau Region to create a modern petrochemical educational cluster at the Safi Utebayev Atyrau University of Oil and Gas (hereinafter, the University). Under the leadership of Atyrau Refinery LLP, the material and technical facilities of the former Department of Chemistry and Chemical Engineering at the University were completely upgraded, including a complete renovation of lecture halls and chemical laboratories, their furnishing and equipment, and fitting out and furnishing of support facilities. The Institute of Petrochemical Engineering and Ecology has opened at the University. The University has 12 new laboratories with state-of-the-art equipment for students to

acquire practical skills of applying instrumental physical and chemical methods of analysis to test oil, gas and refined products.

### 3. Zhas Orken and Digital Summer Projects



In 2017, Samruk-Kazyna Fund initiated the Zhas Orken Programme to develop a new generation of managers with a broad professional outlook, and the Digital Summer Programme to engage young specialists in the Fund's Digitalization Projects.

The main advantage of the programmes is accelerated development under the guidance of mentors from among experienced company employees. During the Zhas Orken Programme, young specialists rotate through 4 different companies of the Fund across Kazakhstan.



**During the programme implementation, 61 young specialists were rotated under the Zhas Orken Programme in KMG Group, 15 of whom were employed; 18 young specialists, including current students, passed the Digital Summer Programme; 3 programme graduates were employed.**

## Environmental Management Training

404-2

HSE training in KMG Group is still in demand. For this reason, compulsory education, training and advanced training in occupational health and safety, industrial and fire safety and environmental protection are a priority.



**From 2021, compulsory training in health and safety, industrial safety and fire safety basics for KMG CC employees take place on the KMG Engineering LLP's platform.**

Health, safety and environment training is based on a 70/20/10 on-the-job/internal/external training model at existing in-house training facilities/centres. Mentoring and internal coaching programmes with the involvement of experienced employees are implemented, master classes and trainings are conducted, various contests among leading employees are held, which enables to improve internal communications and encourage people to be the best in their professions.



Ozenmunaygas JSC (Zhanaozen), JSC “KazTransOil” (Aktau), Pavlodar Oil Chemistry Refinery LLP (Pavlodar) and Oil Services Company LLP (Aktau) have their own training facilities/centres.

Environmental training sessions, workshops for employees are held on a periodic basis. In addition, in September 2021,

a separate training session for members of KMG’s Board of Directors and Management Board on the requirements of the new RoK Environmental Code was held at HSE Forum of KMG SDE CEOs with involvement of the environmental authority and the developers of the Code.

## OUR COMMUNITIES

103-1, 103-2, 103-3, 413-1, 413-2, 203-1

The subsoil use contracts of KMG subsidiaries oblige substantial funds to be allocated for development of regions of operation and social assistance to vulnerable segments of the population, and on the basis of agreements and memoranda concluded with regional akimats, KMG SDEs transfer funds to local executive bodies, which distribute funds based on the needs of local communities. In addition, KMG fulfils its obligations under the Zhanaozen Integrated Development Plan (IDP) in a timely manner. KMG Group has allocated more than 5 bln tenge for these purposes in 2021, including:

Ozenmunaygas JSC allocated 900 mln tenge for development of social infrastructure in Zhanaozen and Karakiya District.

Embamunaygas JSC allocated 200 mln tenge for construction of a 300-seat cultural centre in Tasshagyl Village; over 132 mln tenge for construction of a 160-seat sports complex in Makhambet Village; over 83 mln tenge for construction of a health centre in Asan Village.

Mangistaumunaigas JSC provided assistance for social and economic development of the region and development of its infrastructure in the amount of 300 mln tenge under the Agreement signed with the Akimat of Mangystau Region. In addition, it has allocated about 60 mln tenge to provide the population of the region with affordable meat at below-market prices by purchasing fattened cattle from private subsidiary farms and peasant farms in the region, as well as to assist the agriculture of the region in connection with the drought to provide forage to cattle by allocating 100 tonnes of diesel fuel to cover transport costs.

Kazgermunai JV LLP has allocated about 145 mln tenge to the social and economic development of the region and its infrastructure in Kyzylorda Region.

Karazhanbasmunay JSC transferred 230 mln tenge to the social and economic development of the region and its infrastructure under the Agreement signed with the Mangystau Region Akimat.

Kazakhturkmunay LLP allocated 45 mln tenge and Kazakhoil Aktobe LLP allocated 100 mln tenge for the social and economic development of Aktobe Region and its infrastructure.

To fulfil its social commitments undertaken in the IDP, Ozenmunaygas JSC financed such measures as expanding the activities of Ozeninves SPE of Zhanaozen Akimat (up to 350 jobs) to maintain municipal facilities, financing rent for accommodation in hostels in Aktau for employed citizens from the youth of Zhanaozen, acquisition of housing in Aktau with subsequent transfer to the municipal housing fund for relocation of vulnerable social groups in Zhanaozen, financing of the construction of universal sports facilities in Zhanaozen, including the design of these facilities, totalling 3 bln tenge.

In 2016, the Board of Directors of Samruk-Kazyna JSC approved the Fund Charity Policy and the Fund Charity Programme, according to which KMG and its subsidiaries are not allowed to plan and provide sponsor and charity support on their own.

According to the Charity Policy, all charity activities of the Fund Group are conducted by Social Projects Development Fund “Samruk-Kazyna Trust”.

The priority areas of the Fund are:

- Assisting people, communities in the social and healthcare sector
- Developing media, cultural community, developing the human potential
- Strengthening labour relations, inter-ethnic relations, investments in sustainable development of the society
- Implementing a regional social investment programme in the regions where the Fund Group operates
- Strengthening the reputation and promoting the image of the Fund and/or the Fund Group.

In 2021, KMG allocated 2,079 mln tenge to charity to finance projects through Samruk-Kazyna Social Project Development Trust Fund.

The Fund implements charity projects and programmes aimed at solving issues of social importance for the population on behalf of the entire Samruk-Kazyna Group. The Fund's activities are conducted under the auspices of government authorities, the Kazakhstan Government and public and social policy experts. Administrators of the Corporate Fund's charity projects are selected on competitive basis from among the non-governmental organisations. For more details about the Fund's activities, please follow the link: <https://sk-trust.kz/en/about>.



2021

# GOVERNANCE





- Principle 1 Businesses should support and respect the protection of internationally proclaimed human rights
- Principle 2 Businesses should not be complicit in human rights abuses
- Principle 6 Businesses should uphold the elimination of discrimination in respect of employment and occupation
- Principle 10 Businesses should work against corruption in all its forms, including extortion and bribery



# CORPORATE GOVERNANCE

102-18

Pursuant to the laws of the Republic of Kazakhstan and KMG Charter, KMG’s corporate governance structure is as follows:

KMG bodies are:

1. **supreme body** is the General Shareholders Meeting;
2. **management body** is the Board of Directors;
3. **executive body** is the Management Board;
4. body supervising financial and economic activities of KMG and other entities of KMG Group belonging to Samruk-Kazyna JSC in line with the National Welfare Fund Law of the Republic of Kazakhstan, assessing internal control, risk management, implementation of provisions of documents on corporate governance and consulting for improvement of their operations is the **centralised Internal Audit Service**.

The Board of Directors is engaged in general management of KMG activities, prioritizes the business areas, defines the Company’s development strategy, assesses the efficiency of KMG corporate governance and is accountable to the General Shareholders Meeting for its management duties. The day-to-day activities are managed by the Management Board that, in its turn, is accountable to the Board of Directors.

In order to address the most critical issues and to develop recommendations to the Board of Directors, the dedicated committees are established at KMG under the Board of Directors. As of 31 December 2021, the Board of Directors had the following committees:

1. Nomination and Remuneration Committee was established to address the succession planning for the Board of Directors and the Management Board, performance evaluation of KMG bodies, ensuring the efficient HR policy, remuneration and remuneration system, as well as social assistance, professional development and training of KMG officers and employees.
2. Strategy and Portfolio Management Committee was established to address the development strategy and investment policy, KMG operation priorities, improvement of KMG’s investment attractiveness, KMG’s financial and economic planning and transformation monitoring.
3. Audit Committee was established to exercise effective control over financial and business operations, including the completeness and accuracy of financial statements, the effectiveness of internal control systems, risk management and corporate governance, as well as control over independence of external and internal audits.
4. Health, Safety, Environment, and Sustainability Committee was established to address the issues related to health, safety and environment, implementation of the sustainable development and social & economic development principles, social commitments and programs, ensuring business continuity and environmental efficiency. This committee is responsible for initiation, in-depth review and decision-making on economic, environmental and social aspects of the impact caused by the organisation.

## Economic, Environmental and Social Responsibility

102-20

Pursuant to the Corporate Governance Code, the Board of Directors and the Management Board establish and implement the appropriate sustainable development system within their competence, while every employee and officer at every level contribute to sustainable development.

As of 31 December 2021, the responsibilities for sustainable development were allocated as follows at the executive body level:

1. Deputy Chairman of the Management Board for Strategy, Investments and Business Development is responsible for development and implementation of the sustainable development management system to ensure compliance with the sustainable development principles and integration of sustainable development into the key processes, the Company's development strategy and decision-making processes.
2. Deputy Chairman of the Management Board for Finance and Economics is responsible for the economic component of sustainable development, including promotion of economic development in the regions of operation.
3. Director of Labour and Environment Protection Department is responsible for development and implementation of KMG's health, safety and environment strategy and policies, and in general for health, safety and environment issues.
4. Director of HR Department is responsible for implementation of processes and management of labour, human and social aspects of sustainable development.

The above persons are accountable to the Chairman of KMG's Management Board. Accountability of those responsible for economic, environmental and social issues is governed in detail by the Company's internal regulatory documents, internal control and business continuity procedures. In this regard, according to the development plans, the issues are regularly presented for review to the Management Board that, in its turn, is accountable to the Board of Directors. Before the relevant matters are considered at Board of Directors meetings, the Board

Committees make recommendations to the Board of Directors according to the following allocation:

- Comprehensive control over implementation of duties and actions aimed at improving the corporate governance is delegated to the Audit Committee under KMG's Board of Directors.
- Initiation, in-depth review and decision-making on the economic, environmental and social aspects of the Company's impacts, and monitoring of sustainable development in KMG are assigned to the Safety, Health, Environment and Sustainability Committee of KMG's Board of Directors.

## Consulting of Stakeholders in Economic, Environmental and Social Matters

102-21, 102-31, 102-32, 102-33, 102-34

Economic, environmental and social consultations between the stakeholders and the Company's supreme corporate governance body are implemented in various ways and on a continuous basis.

For instance, the Health, Safety, Environment, and Sustainability Committee of the Board of Directors (hereinafter, the Committee) is in charge of general management of the activities of the above-mentioned officers. Thus, five meetings of the Committee were held in 2021, where 52 issues were addressed, with 115 decisions and assignments developed following the meetings of the Committee.

The Committee develops and submits to the Board of Directors its recommendations in the following areas:

- Health, safety and environment.
- Integration of the sustainable development principles into KMG strategic planning and social & economic development.
- KMG's social commitments and programs under the existing subsoil use contracts.
- KMG business continuity.
- KMG's environmental efficiency.

In 2021, the Committee was mainly focused on health, safety and environment, strategic management of the

ESG (Environmental – Social – Governance) aspects, and implementation of a sustainable development system. The key issues on the Committee's agenda in 2021 are as follows:

- KMG's ESG (Environmental – Social – Governance) rating.
- Requirements of the new RoK Environmental Code.
- Atmospheric emission management.
- Waste management and implementation of the Historic Waste Disposal Memorandum.
- Implementation of a sustainable development system at KMG and its business units and incorporation of sustainable development principles into key business processes.
- KMG's contribution to the sustainable development goals.
- KMG's health, safety and environment reports.
- Management of KMG's contractors.
- Status of the incident at Petromidia Refinery.
- Investigation of a fire at the diesel and paraffin receiving and transshipment station of the Batumi Oil Terminal.
- Disruptions in the operations of KMG's subsidiaries and dependent entities due to a power cut by an external supplier, KEGOC JSC.
- The social policy pursued by KMG Group and ensuring social stability at KMG companies.
- Approval of 2022 motivational key performance indicator charts for executives related to the implementation of sustainable development.
- KMG COVID-19 reports.
- Occupational health and safety management system.

Moreover, the Committee reviewed and approved the following main documents in 2021:

- KMG's Low-Carbon Development Programme for 2022-2031.
- New revision of KMG's Environmental Policy.
- Corporate standard for environmental impact assessment of the planned activities in KMG Group.
- Action Plan to Improve KMG's ESG Rating.

KMG officers and employees were regularly invited to take part in the Committee's activities by attending the meetings of the Committee without the voting right. The KMG's Board of Directors has accepted every recommendation developed by the Committee.

Economic, environmental and social consultations are provided to a wide range of stakeholders via the Company's website, public relations service (media office), as well as by issuing the annual Sustainability Report that serves as the central communication channel between KMG and its internal and external stakeholders in terms of disclosing sustainable development information. At the same time, KMG has various communication methods in place, which enable a proper dialogue with the stakeholders and the Company. For example, information for the investment community is posted on a dedicated portal <https://kmg.kz/eng/investoram/reporting-and-financial-result/>, violations of laws and internal regulations of KMG can be addressed through the help line [doverie@kmg.kz](mailto:doverie@kmg.kz), a confidential reporting system is available through <http://www.sk-hotline.kz/>, and there is functional communication on work of the Ombudsman through [ombudsman@kmg.kz](mailto:ombudsman@kmg.kz), on health, safety and environment through [hse@kmg.kz](mailto:hse@kmg.kz) and on sustainability through [sustainability@kmg.kz](mailto:sustainability@kmg.kz).

## Composition of the Management Body and its Committees

102-22, 102-23

As of 31 December 2021, KMG's Board of Directors has the following members<sup>17</sup>:

- Christopher John Walton, Chairman of the Board of Directors, Independent Non-Executive Director;
- Alik Serikovich Aidarbayev, Chairman of KMG's Management Board;
- Miller Timothy Glen, Independent Non-Executive Director;
- Holland Philip Malcolm, Independent Non-Executive Director;
- Uzakbay Suleymenovich Karabalin, Non-Executive Director, Representative of Samruk-Kazyna JSC;
- Bolat Uralovich Akchulakov, Representative of Samruk-Kazyna JSC;
- Mukhtar Nauryzbaevich Mankeyev, Representative of Samruk-Kazyna JSC.

<sup>17</sup> On 11 January 2022, B. Akchulakov, member of the Board of Directors of KMG – representative of Samruk-Kazyna JSC, submitted an application to resign from KMG's Board of Directors and on 18 February 2022 the Management Board of Samruk-Kazyna JSC resolved to terminate the powers of members of KMG's Board of Directors B. Akchulakov and M. Mankoyev, and instead elected new members of KMG's Board of Directors G. Auganov and E. Zhanadil as representatives of Samruk-Kazyna JSC. In accordance with the decision of the Management Board of JSC "Samruk-Kazyna" from April 15, 2022 M.M. Mirzagaliyev was appointed as the Chairman of the Management Board of KMG and elected as a member of the Board of Directors of KMG instead of A.S. Aidarbayev.

At the time of the Sustainability report approval KMG's Board of Directors has the following members:

- Christopher John Walton, Chairman of the Board of Directors, Independent Non-Executive Director;
- Magzum Maratovich Mirzagaliyev, Chairman of KMG's Management Board;
- Miller Timothy Glen, Independent Non-Executive Director;
- Holland Philip Malcolm, Independent Non-Executive Director;
- Uzakbay Suleymenovich Karabalin, Non-Executive Director, Representative of Samruk-Kazyna JSC;
- Yernar Beisenuly Zhanadil, Representative of Samruk-Kazyna JSC;
- Gibrat Kairatovich Auganov, Representative of Samruk-Kazyna JSC;
- Khairova Asel Anuarovna, Independent Non-Executive Director.

At the time of this report, KMG's Board Committees are as follows (Resolution of KMG's Board of Directors dated 2 February 2022, Minutes No.1/2022):

#### **Audit Committee**

- Christopher John Walton, Chairman
- Miller Timothy Glen
- Holland Philip Malcolm

#### **Strategy and Portfolio Management Committee**

- Holland Philip Malcolm, Chairman of the Committee
- Christopher John Walton
- Miller Timothy Glen
- Uzakbay Suleymenovich Karabalin

#### **Nomination and Remuneration Committee**

- Holland Philip Malcolm, Chairman of the Committee
- Christopher John Walton
- Uzakbay Suleymenovich Karabalin

#### **Health, Safety, Environment, and Sustainability Committee**

- Miller Timothy Glen, Chairman of the Committee
- Christopher John Walton
- Uzakbay Suleymenovich Karabalin

The Company complies with requirements of the Corporate Governance Code regarding the number of independent directors on the Board of Directors, according to which the number of independent directors is up to 50% of the total number of members of the Board of Directors.

The Board of Directors is chaired by an independent director and all KMG's Board Committees are chaired by independent directors.

At the time of the report, the structure of KMG's Board of Directors is as follows:

- non-executive directors – 4,
- representatives of Samruk-Kazyna JSC – 3,
- head of the executive body (Chairman of the Management Board) – 1

Of eight members of the Board of Directors (at the time of report), five are citizens of the Republic of Kazakhstan, two are from the United Kingdom and one is from the United States.

The term of office of the Board of Directors is three years. Members of the Board of Directors may be re-elected for a period exceeding six consecutive years subject to special consideration of a need for qualitative renewal of the Board of Directors. An independent director cannot be elected to the Board of Directors for more than nine consecutive years. Election of an independent director to the Board of Directors should be carried out annually, with detailed explanation of the need for election of this member of the Board of Directors and influence of this factor on independence of the decision making. However, following an independent corporate governance audit carried out at KMG in 2021, the Company received a recommendation to consider discussing with the Shareholder an approach to retain shareholder representatives and independent directors on the Company's Board of Directors for a longer period of time. It was also recommended that consideration should be given to aligning the tenure of representatives with the period of the chosen Company Strategy. According to the independent consultant, this can have the following advantages: the term of office of individual directors of five to six years and their rotation in different years will ensure continuity of knowledge of the Company's operations and its corporate governance processes. A longer term on the Board of Directors contributes to the quality of performed work and accountability for successful implementation of the Company's strategy.

The Board of Directors and its Committees maintain the balance of skills, experience and knowledge to ensure the independent, unbiased and efficient decision-making process in the interests of KMG and in view of fair treatment of all shareholders and sustainable development principles. Pursuant to clause 4 of Article 54 of the Law of the Republic

of Kazakhstan on Joint Stock Companies and paragraph 9 of Chapter 5 of KMG's Corporate Governance Code, members of the Management Board, other than the Chairman of the Management Board, cannot be elected to the Board of Directors, and the Chairman of the Management Board cannot be elected as Chairman of the Board of Directors. For more details on the members of the Board of Directors, visit KMG's website: [https://www.kmg.kz/eng/kompaniya/korporativnoe\\_upravlenie/sovet\\_direktorov/](https://www.kmg.kz/eng/kompaniya/korporativnoe_upravlenie/sovet_direktorov/)

#### **Composition of KMG's Management Board as of December 31, 2021:**

- Alik Serikovich Aidarbayev, Chairman of KMG's Management Board;
- Dastan Elemesovich Abdulgafarov, Deputy Chairman of the Management Board for Strategy, Investments and Business Development;
- Daniyar Amirbayevich Berlibayev, Deputy Chairman of the Management Board for Oil Transportation, International Projects and Sary-Arka Gas Pipeline Construction;
- Dauren Saparalievich Karabayev, Deputy Chairman of the Management Board for Economics and Finance;
- Zhakyp Nasibkalievich Marabayev, Deputy Chairman of the Management Board for Exploration and Production;
- Daniyar Suinshlikovich Tiyesov, Deputy Chairman of the Management Board for Oil Refining and Petrochemistry;
- Malik Oraluly Saulebay, Director of Department for Legal Support of Business Areas.

The Management Board of Samruk-Kazyna JSC on 28 October 2021 (Minutes No.49/21) decided to appoint Alik Serikovich Aidarbayev as the Chairman of KMG's Management Board for the term defined for KMG's Management Board as a whole.

At the time of approval of the 2021 Sustainability Report, the composition of KMG's Management Board is as follows:

- Magzum Maratovich Mirzagaliyev, Chairman of KMG's Management Board
- Dastan Elemesovich Abdulgafarov, Deputy Chairman of the Management Board for Strategy, Investments and Business Development;
- Bulat Kalvyanovich Zakirov, Deputy Chairman of the Management Board for Oil Transportation, International Projects and Sary-Arka Gas Pipeline Construction;

- Dauren Saparalievich Karabayev, Deputy Chairman of the Management Board for Economics and Finance;
- Kurmangazy Oryngazievich Iskaziyeu, Deputy Chairman of the Management Board for Exploration and Production;
- Murat Kirimbekovich Munbayev, Deputy Chairman of Management Board for Major Oil-and-gas Projects;
- Arman Kurmetovich Kairdenov, Deputy Chairman of the Management Board for Oil Refining and Petrochemistry;
- Vasily Sergeevich Lavrenov, Deputy Chairman of the Management Board.

More information about the members of KMG's Management Board [https://www.kmg.kz/eng/kompaniya/korporativnoe\\_upravlenie/pravlenie/](https://www.kmg.kz/eng/kompaniya/korporativnoe_upravlenie/pravlenie/)

## **Nomination and Selection of Management Body**

102-24

### **Procedure for Nomination and Selection of Candidates to the Board of Directors**

The procedure for nomination and selection of candidates to the Board of Directors is determined by the KMG's Charter and Corporate Governance Code and implemented by the General Shareholders Meeting together with the Chairman of the Board of Directors and the Chairman of the Nomination and Remuneration Committee of the Board of Directors, and is governed by the transparent, fair and professional approach to recruitment and employment of candidates. Members of the Board of Directors are elected from among the candidates nominated as representatives of shareholders and other parties. Candidates to the Board of Directors must have the knowledge, skills and experience necessary to perform their duties and to ensure growth of long-term value and sustainable development, and must also have impeccable business reputation. The Chairman of the Board of Directors is elected by the General Meeting of Shareholders. Independent directors are selected in accordance with the approved Rules for Selecting Independent Directors of companies in Samruk-Kazyna JSC Group.

## Conflict of Interest

102-25

The main processes for managing the conflicts of interest in the company are described in the Policy on Managing the Conflict of Interest of Employees and Officers in KMG and its SDEs approved by the Board of Directors of KMG, as well as in the Code of Conduct.

It is the responsibility of every employee, regardless of position, and of every officer of the company to comply with requirements of this Policy.

The Company has now implemented an Initial Disclosure of Potential Conflict of Interest Procedure for employees and/or officers when hiring/appointing/assigning and taking up a new position. This Disclosure includes the following information: 1) Information on beneficial ownership/shareholding and management in companies – Counterparties/Competitors of KMG and its SDEs; 2) Information on participation in the sole and collegial bodies of Counterparties/Competitors of KMG and its SDEs, 3) Information on interaction with Counterparties of KMG and its SDEs; 4) Information on intention to acquire assets and/or securities owned by KMG and/or its SDEs, etc. It is arranged to check for conflicts of interest and compliance with requirements and procedures of KMG's compliance policies and/or other documents, including presence of signs of affiliation of officers of Samruk-Kazyna JSC Group with persons considered as candidates for employment, appointments to managerial positions, as well as when concluding non-arm's length transactions. In addition, consent to anti-corruption restrictions under the Anti-Corruption Law shall be collected from the above-mentioned persons.

## Role of the Management Body in Setting Goals, Values, Mission and Strategy

102-26

KMG's Board of Directors is actively involved in strategic planning and implementation of KMG's Development Strategy.

In consultation with shareholders, the Board of Directors determines the priorities, strategic goals, initiatives, values, vision and mission, as well as policies and objectives for the economic, environmental and social development

of the Company based on proposals developed by the executive body.

The Board of Directors is responsible for determining the priority areas of KMG's activities and approving KMG's Development Strategy, as well as monitoring the implementation of KMG's Development Strategy.

On 3 November 2021, KMG's Board of Directors approved the Company's Development Strategy for 2022-2031.

3 Strategic Sessions were held during the Strategy updating process (separate Board of Directors meeting on the Development Strategy). The Strategic Session in November 2020 considered the need to update KMG's Development Strategy to reflect global trends in sustainable and low-carbon development and changes in the asset portfolio in terms of withdrawal of KTG from the Company's structure and entry into the oil and gas chemical business. At this Strategic Session, each member of the Board of Directors shared their views on the issue at hand and expressed their wishes for the Company's development over the next ten years. It was unanimously decided to further strengthen the Company's focus on reducing the carbon intensity of operations and developing renewable energy projects, as well as the principles of sustainable development.

At the Strategic Session in May 2021, the Board of Directors was presented with the concept of KMG's new Development Strategy for 2022-2031, as well as approaches to development and subsequent implementation of KMG's Low-Carbon Development Programme based on the previous discussions.

On 3 November 2021, KMG's Board of Directors approved the Company's Development Strategy for 2022-2031, and reviewed the draft Low Carbon Development Programme for 2022-2031 and KMG's strategy concepts for major oil and gas projects and international assets of the Company at the Strategic Session.

In order to assist KMG's Board of Directors in developing the recommendations, the advisory bodies of KMG BoD Strategy and Portfolio Management Committee (SPMC) and KMG BoD Health, Safety, Environment and Sustainability Committee (HSESC) during the year considered the analytical materials on low-carbon development, such as the results of study of the Western Australian experience in implementation of hydrogen-based renewable energy projects, ways to minimise the

risks for JSC NC “KazMunayGas” from introduction of a carbon tax in the European Union, and others.

The Board of Directors recognises the high priority given to environmental issues, the lives and health of the Company’s employees and its contractors at all its production facilities, human resource development and commitment to the generally recognised global goals of sustainable development, therefore, it defines sustainable development and progressive reduction of carbon intensity of production as one of KMG’s main strategic goals, which is in line with Samruk-Kazyna JSC’s vision, the Republic of Kazakhstan Development Strategy and the agenda of the global investment community.

## Management Body’s Competence and Performance Review

### Collective Knowledge of the Management Body Members

102-27

The members of the Board of Directors strive to regularly enhance their skills and professionalism, including those related to economic, environmental and social management. The Nomination and Remuneration Committee regularly reviews the current balance of skills and knowledge among the members of the Board of Directors. Information on training of the Board of Directors’ members is regularly updated on the Company’s website and is available via the following link: [http://www.kmg.kz/eng/kompaniya/korporativnoe\\_upravlenie/treningi\\_chlenov\\_soveta\\_direkt/](http://www.kmg.kz/eng/kompaniya/korporativnoe_upravlenie/treningi_chlenov_soveta_direkt/).

Meetings of the Board of Directors, including the separate annual meeting of the Board of Directors on sustainable development, as well as of the Board of Directors Health, Safety, Environment and Sustainability Committee regularly discuss the most relevant topics within ESG (environmental, social, governance) scope, including information on international trends and in-country initiatives.

## Management Body Performance Review

102-28

Based on the results of the 2021 independent diagnostics, KMG was assigned corporate governance rating of “BBB”.

The Regulations on Performance Assessment of the Board of Directors, Board of Directors Committees, Chairman, Members of the Board of Directors and Corporate Secretary of KMG (hereinafter, the Regulations) were developed in accordance with the Corporate Governance Code and based on the Guidelines for Performance Assessment of the Board of Directors and its Committees, Chairman, Members of the Board of Directors and Corporate Secretary of Samruk-Kazyna JSC companies. The Regulations state that the Board of Directors, Committees and members of the Board of Directors should be assessed on an annual basis as part of a structured process approved by the Board of Directors. An independent professional organisation is involved in the assessment at least once every three years. In 2021, an independent corporate governance audit was carried out in 11 portfolio companies of Samruk-Kazyna JSC, including KMG, by the team of PricewaterhouseCoopers LLP (PwC) for the period from 1 January 2020 to 31 May 2021. This audit assessed performance in five areas: efficiency of the Board of Directors and executive body; risk management, internal control and audit; sustainable development; shareholders’ rights; transparency. Therefore, no separate independent assessment of the Board of Directors was carried out in 2021.

However, a self-assessment of the members of the Board of Directors at the end of 2020 was carried out in 2021 through a questionnaire survey as required in the Corporate Governance Code. The self-assessment questionnaire was developed jointly by the chairmen of the Nomination and Remuneration Committee of the Board of Directors and the Board of Directors. The questionnaire consisted of two sections – Composition & Processes and Behaviour & Actions – and 30 questions. Self-assessment results were pre-reviewed at a meeting of the Nomination and Remuneration Committee of the Board of Directors, during which it was recommended that the Chairman of the Board of Directors together with the Chairman of the Nomination and Remuneration Committee of the Board of Directors discuss the following aspects when

In April 2021, KMG's Board of Directors approved KMG's Board Succession Policy and KMG's Board Succession Plan. As part of KMG's 2021 corporate governance audit, recommendations were received from PwC on succession issues and terms of office for KMG's Board of Directors, which are to be implemented in 2022. The following recommendations are highlighted in KMG's Corporate Governance Improvement Plan submitted by the consultant:

- consider discussing with the Shareholder an approach to retain shareholder representatives and independent directors on the Board of Directors of the Company for a longer period of time. Consideration should be given to aligning the tenure of representatives with the period of the Company's chosen Strategy, which would provide an advantage to the Company given the continuity of its corporate memory and reputation in the investment community if the Company plans an international listing.
- consider developing a formal succession plan for the Board of Directors, including a list of candidates, their competencies, likelihood of interest, preferred remuneration and potential term of office, which would be based on the term of office of the current directors and the required skills matrix.

discussing the performance self-assessment of the Board of Directors for 2020:

1. Appointment of the Chairman of the Audit Committee of KMG's Board of Directors.
2. Diversity in every aspect.
3. Succession plan and the process for electing the members of the Board of Directors.
4. KMG's Strategy.
5. Professional development and training.

The KMG's Board of Directors' 2020 Self-Assessment Report (hereinafter, the Report) was presented and discussed at a closed meeting of the Board of Directors, which was attended only by members of the Board of Directors and the Corporate Secretary. The discussion of the Report included a review of the Board members' self-assessment results and a review of the skills and competencies that scored below four points (out of the maximum five points) (hereafter, the areas for improvement). In this regard, in order to improve performance of the Board of Directors in the areas for improvement, an Action Plan for Improvement of KMG's Board of Directors (hereinafter the Plan) was developed and the implementation status of the previous Plan was reviewed.

At the November 2021 meeting of KMG's Nomination and Remuneration Committee of the Board of Directors, the issue of assessment of the KMG's Board of Directors performance at the end of 2021 was considered, where the Chairman of the Board voiced that an independent corporate governance audit of KMG had been carried out, which also included assessment of the Company's Board of Directors performance, but suggested that self-assessment should also be carried out for 2021. The purpose of the annual self-assessment is to identify the trends based on questionnaires completed by members of the Board of Directors. KMG's Board of Directors decided, in addition

to the independent corporate governance audit, to assess KMG's Board of Directors' performance in 2021 through a self-assessment in order to identify provisions requiring attention and to compare the results with the previous ones.

The self-assessment of the Board of Directors, the Board of Directors' committees, the Board of Directors' members and the Corporate Secretary at the end of 2021 was completed at the date of publication of the Report, namely in February 2022. The results were considered at 1 March 2022 meeting of the Board of Directors. Further discussions of improvements in its activities will be based on this.

## Economic, Environmental and Social Impact Management

102-29

The KMG's Board of Directors plays a crucial role in management of economic, environmental and social impact and the associated prospects. The Company regularly performs the risk assessment on a quarterly basis and at the year-end in compliance with the approved risk management methodology, including economic, environmental and social risks. Based on the identified risks, the relevant action plans are developed and implemented to prevent, monitor and eliminate such risks. In particular, the following functions are deemed to be within the competence of the Board of Directors: determining the corporate risk management policy, approving the risk register and risk map, the critical risk management action plan, the overall risk appetite, the tolerability levels for each key risk, approving the risk report and KMG business continuity documents.

KMG's Board of Directors sets the "tone from the top" in ensuring adherence to proper standards of conduct, and the main document governing the Company's ethical standards

is KMG's Code of Conduct, the approval of which falls within the competence of KMG's Board of Directors. Compliance with the standards of this Code is one step in enhancing the Company's reputation, ensuring sustainable development and achieving the KMG's strategic goals.

The Health, Safety, Environment and Sustainability Committee of KMG's Board of Directors ensures that a culture of safety, health and environmental protection and sustainable development is fostered and enhanced. To this end, "the deep dive issues" on the most relevant aspects of the Company's business are considered on a regular basis.

The Audit Committee of KMG's Board of Directors regularly reviews reports on the main results of the compliance system, as well as reports on applications received through the hotline and other official channels. The hotline is operated by an independent operator, KPMG, and is a communication channel through which any breaches of KMG's Code of Conduct can be reported, including corruption, discrimination, misconduct and other violations. Relevant reports received through the hotline are reviewed, and the corrective actions are taken following review and investigation, and disciplinary actions are taken where necessary. The Company implements ongoing operational preventive actions that encourage employees and others to use the hotline.

In 2020, the Compliance Service developed the Code of Conduct based on the compliance risk assessment and review of internal compliance documents for compliance with the standards and requirements of anti-corruption laws and guidelines, including the Law of the Republic of Kazakhstan on Combating Corruption, the UK Bribery Act, the Convention on Combating Bribery of Foreign Public Officials of the Organisation for Economic Cooperation and Development, which was approved (Minutes 16/2020 dated 10 December 2020) by KMG's Board of Directors. In 2021, KMG conducted compliance training for its employees on the requirements of applicable law, the Company's main compliance policies, and case studies from global practices on the consequences of compliance violations. In addition, KMG employees commit in writing to comply with the Code of Conduct and the Anti-Corruption Policy.

Stakeholders are consulted to assist the supreme governance body in identifying and managing the economic, environmental and social impacts, risks and opportunities, as appropriate, during KMG's Board of Directors meetings with representatives of KMG's major shareholder, Samruk-Kazyna JSC, during the meetings of KMG's Audit Committee

with KMG's external auditor, Ernst & Young, and during the meetings of KMG's Board of Directors and its Committees with the initiators of the agenda – managing officers of KMG.

## Principles of the Corporate Risk Management System (CRMS).

Risk management in the Company prevents risk events that affect achievement of strategic and operational objectives, and limits their impact when they occur. Risk management is an integral part of the Company's strategic planning and corporate governance process and support of financial stability.

KMG has integrated the corporate risk management system (CRMS) into the Company's key business and management processes. CRMS aims to achieve an optimal balance between the Company's growth in value, profitability and risk. CRMS is a key component of the corporate governance system aimed at timely identification, assessment and monitoring of all material risks and adoption of timely and adequate risk mitigation measures. The CRMS Policy of KMG and its SDEs applies to all of the Company's activities.

The Company's Risk Management Policy is based on the following principles:

- Unity of methodological basis (processes are implemented based on unified methodological approaches);
- Continuity (functioning on an ongoing basis);
- Comprehensiveness (covers all activities and all types of risks arising within them);
- Accountability (the organisational structure of CRMS defines decision-making and control competencies for risk management at all levels of the group);
- Informed and timely reporting (risk management process is accompanied by objective, reliable and up-to-date information);
- Rationality (the Company uses resources rationally to implement risk management measures, ensuring the cost-effectiveness of risk management measures);
- Reasonable assurance (CRMS can only provide reasonable assurance that the Company's strategic and operational objectives will be achieved, but cannot provide absolute assurance and strength of the inherent limitations of the external and internal environment);
- Adaptability (CRMS is regularly improved to identify all possible business risks and to apply risk control and management methods as effectively as possible);

- Clear regulation (all operations are carried out in accordance with the procedures laid down by internal regulations);
- Active management involvement (actively participates and supports implementation and improvement of CRMS).

## Risk Management Process

CRMS is designed to provide a consistent and clear framework for managing the risks associated with KMG's operations. The Company has built a vertical risk management process and functioning of risk management system at all levels of the management, from the top level (KMG) to the line level (production business units of SDEs). Each officer ensures that risks are properly considered when making decisions. Risks are assessed using qualitative and quantitative tools that take into account the likelihood and impact of the risk.

Seven interrelated processes, integrated into KMG Group's business management processes, support the operation of CRMS:

1. Setting of goals (linking the strategic, medium-term and short-term planning objectives).
2. Risk/risk factor identification (determining the exposure of all KMG Group's activities, business processes to risks, the occurrence of which could adversely affect the ability to achieve planned objectives and goals). A combination of different techniques and tools is used to identify risks and their corresponding risk factors.
3. Risk/risk factor assessment and analysis (assessment is performed to determine the extent to which risks/risk factors influence the achievement of KPIs; production/non-production risks and their corresponding risk factors are analysed by likelihood of occurrence (probability) and degree of impact (potential damage)).
4. Risk management (the process of developing and implementing the measures to mitigate the adverse effects and/or likelihood of risks and their corresponding risk factors or to obtain financial compensation upon occurrence of losses related to the risks of KMG Group operations).
5. Monitoring and reporting (monitoring of changes in risk parameters and efficiency of risk management measures and control procedures; monitoring is performed by KMG's Risk Management and Internal Control Service, a quarterly risk report consolidated with

coverage of KMG SDEs is submitted to the Board of Directors).

6. Informing and communication (enables reliable and timely risk information to be provided to the risk management participants, raises awareness of risks, methods and tools to respond to risks; relevant information is identified, captured and made available in a form and within time that enable staff to perform their functions effectively).
7. Creation of internal environment (implementation of the above components of the risk management process promotes a risk culture within KMG Group, based on establishing an appropriate "tone at the top", a high level of risk awareness and knowledge, responsibility of risk/risk factor owners, proactive risk management and timely reporting). KMG is committed to building an adequate organisational structure of CRMS that promotes effective corporate governance, ensuring appropriate segregation of duties, powers and responsibilities for identification, assessment, management and reporting of risks.

## Risk Management Process Effectiveness

102-15, 102-30, 207-2

Risk management in KMG prevents risk events that affect achievement of strategic and operational objectives, and limits their impact when they occur. Risk management is an integral part of KMG's strategic planning and corporate governance process and support of financial stability.

The approach to managing risks, including tax risks, is set by the corporate risk management system (CRMS).

KMG has integrated the corporate risk management system (CRMS) into the company's key business and management processes. CRMS aims to achieve an optimal balance between the KMG's growth in value, profitability and risk.

CRMS is a key component of the corporate governance system aimed at timely identification, assessment and monitoring of all material risks (including tax risks) and adoption of timely and adequate risk mitigation measures.

The CRMS Policy of KMG and its subsidiary and dependent entities (SDEs) applies to all of the KMG's activities.

## Measures and Actions to Develop and Improve CRMS in the Reporting Year

The Company is continuously improving its CRMS and regularly improves the regulatory and procedural framework of risk management. To reaffirm its commitment to the continuous development and improvement of CRMS, the Company implemented a number of measures and actions in 2021:

- A risk appetite statement, a Risk Register and Risk Management Action Plan, risk maps, risk tolerance levels and a Key Risk Indicator (KRI) Register were prepared on a consolidated basis and approved by the Company's Board of Directors for 2022.
- BBB rating was received for the Risk Management, Controls and Audit component of the Independent Corporate Governance Audit (for reference, in 2018 it was BB).
- The register of risk coordinators and composition of the Company's Risk Committee were updated to reflect changes in the organisational structure of the Company. During the year, the Committee held eight (8) meetings, considered 26 (twenty-six) issues and took relevant decisions.
- Information was prepared for each meeting of the Board of Directors of the Company in the form of seven (7) presentation reports on the impact of pandemic coronavirus risks on KMG operations and measures taken, and interaction with the Board of Directors of the Company on isolated requests (cyber risks, climate risks and other issues) was ensured.
- KMG's Credit Risk Management Procedure was developed and approved by the Company's Board of Directors. KMG's counterparty bank limits and PD PiT and LGD indicators for financial instruments and receivables were updated for KMG's THC calculation model.
- A weekly reporting format was implemented and data on key events and risks of the Company was made available for the purposes of informing the Fund.
- Test run of the updated version of the automated risk management system (ARMS) was conducted in some SDEs.
- Simulation modelling (stress testing) of key performance indicators of projects was integrated into the risk assessment of investment projects.

- Two training seminars were held by RM&ICS staff online on request of SDE employees on the Risk Management System Implementation.
- Continuous professional development of RM&ICS risk managers is ensured, with international certificates obtained during 2020-2021, in particular: one employee – PRM from PRMIA, one employee – CFA and one employee – PMP. Five RM&ICS staff members were certified according to the international standard ISO 31000:2009/2018 (head of the Service obtained AT31000 certification, staff of the Service obtained C31000 certification).

As part of the corporate insurance programme administration:

- Actions were taken to maintain and renew the risk insurance coverage for Samruk-Kazyna JSC and its SDEs.
- The corporate reinsurance programme for KMG's SDEs and joint ventures (JVs) was expanded by concluding a property risk insurance contract for Karachaganak Petroleum Operating Project.
- Joint efforts were taken with AIFC and the AFSA regulator on foreign exchange regulation, AIFC legal infrastructure and taxation.
- KERC operation was organised and managed, including outsourcing of financial accounting, building of internal processes and controls including insurance, risk management and compliance, and developing of internal documentation.

## Supreme Corporate Governance Body's Role in Preparing the Sustainability Report

102-32

In accordance with the Company's Charter, approval of the Sustainability Report is the responsibility of KMG's Board of Directors.

KMG's Board Health, Safety, Environment and Sustainability Committee is the body that reviews and makes a recommendation to KMG's Board of Directors on approval of the Sustainability Report.

The Sustainability Report is verified by an independent party to confirm the data in the Report, which in turn

contributes to improving the reliability of the information disclosed in the Report and the confidence of investors and, as a result, the investment attractiveness of KMG.

## Communicating the Critical Issues

102-33

Critical issues are communicated to KMG's Board of Directors through regular reports on the Company's operations including but not limited to the following: report by the Chairman of KMG's Management Board on key business developments, information on occupational health and environmental protection, report on preliminary results of financial and business activities, report on arm's length transactions concluded, decisions on which were taken by the Management Board, review of strategy implementation status, key performance indicators and investment projects, the report on implementation of KMG's Consolidated Development Plan, risk report, report on the implementation of the Board of Directors' decisions, and reports of the chairmen of the Board of Directors' Committees.

In addition to the aforementioned reports, the BoD from time to time identifies matters on which information is required immediately, such as information on the current situation in KMG Group, including the situation regarding COVID-19, operational performance, etc., on financial performance, on significant health and environmental incidents in KMG Group companies, including fire reports (even if such events have occurred after the reporting period). The Health, Safety, Environment and Sustainability Committee of KMG's Board of Directors regularly reviews and discusses reports on implementation of the sustainability system in KMG and its business units and incorporation of sustainability principles into key business processes, as well as information on the status of work on improving the ESG (Environmental – Social – Governance) rating.

### Nature and Number of Critical Issues

102-34

As part of the review of KMG's health and safety and environmental information, which is considered at each in-person meeting of the Board of Directors, the instructions were given to promptly inform the Board of Directors' members of any health and safety and environmental

incidents in KMG Group companies, regardless of the reporting period. In addition, the Board of Directors requested detailed information on the procedure for investigating the health and safety incidents and to develop an action plan to minimise incidents in KMG Group. The Board of Directors instructed the Management Board of KMG to prepare an action plan including a description of the adverse factors of the changed external environment (impact of coronavirus pandemic, decline in oil prices, decline in gas export and corresponding increase in losses from domestic gas supplies), measures to respond to such factors, timing and involvement of the Board of Directors.

The Board of Directors has been actively involved in transfer of KTG to Samruk-Kazyna JSC, including a discussion of potential risks for KMG.

As part of the quarterly discussion of the risk report, it was commissioned to prepare proposals to arrange work on simulation of unknown risks and scenarios. The Board of Directors also instructed to prepare an analysis of reputational and liquidity risks in view of the current decline in global oil prices and risk management measures. The Board of Directors was informed about the impact of pandemic risks on KMG's operations.

When discussing KMG's reports on financial and business activities, the Board of Directors instructed to identify the reasons for the lower net profit.

Information on the impact of COVID-19 on operations of KMG Group is sent to the members of the Board of Directors on a weekly basis.

The Board of Directors was informed of the results of a benchmarking study for competitive analysis of the main indicators of KMG's refineries, as well as on the employment situation in Zhanaozen.

## Remuneration Policies

102-35

The remuneration level for members of KMG's Board of Directors is set based on the resolution of the Management Board of Samruk-Kazyna JSC in accordance with the contracts with members of KMG's Board of Directors.

The remuneration of the members of KMG's Board of Directors is fixed. However, the Chairman of the Board of Directors also has additional remuneration for chairing the Board of Directors in addition to the fixed remuneration.

## Process for Determining the Remuneration

102-36

According to the Corporate Governance Code, "the remuneration level of the Board of Directors' members should be sufficient to attract, retain and motivate each Board of Directors member to the level required for successful management of the company. Remuneration to a member of the Board of Directors of the company is determined in accordance with the procedure developed by Samruk-Kazyna JSC considering the expected benefit for the Company from participation of this person in the Board of Directors. Also, according to the Corporate Governance Code, no person may participate in decisions relating to their own remuneration.

The procedure for determining the remuneration is defined by Samruk-Kazyna JSC. Resolution of the Management Board of Samruk-Kazyna JSC dated 26 September 2016 (Minutes No.35/16) approved the Regulations on forming the composition of the Board of Directors of Samruk-Kazyna JSC companies, including, among other things, the procedure for determining the remuneration for members of the Board of Directors. Pursuant to Section 3 of the Regulations, Remuneration and Reimbursement of Expenses, the remuneration depends on responsibilities of a Board of Directors member, scale of the company's operations, long-term goals and objectives. Remuneration is paid to non-executive directors. Representatives of Samruk-Kazyna JSC in the Board of Directors of Samruk-Kazyna JSC Group companies are remunerated on the basis of the resolution of the Management Board of Samruk-Kazyna JSC.

In 2021, KMG did not engage consultants to determine the remuneration of members of the Board of Directors.

## Stakeholders' Involvement in Remuneration

102-37

The procedure for determining the remuneration is defined by KMG's principal shareholder, Samruk-Kazyna JSC. In accordance with Regulations on forming the composition of the Board of Directors of Samruk-Kazyna JSC companies, which include, among other things, the procedure for determining remuneration for members of the Board of Directors, the remuneration depends on responsibilities of a Board of Directors member, scale of the company's operations, and long-term goals and objectives. Remuneration is paid to non-executive directors. Representatives of Samruk-Kazyna JSC in the Board of Directors of Companies are remunerated on the basis of the resolution of the Management Board of Samruk-Kazyna JSC. In accordance with the Corporate Governance Code, the Nomination and Remuneration Committee of the Board of Directors makes proposals on size of remuneration of candidates for non-executive directors.

Meetings of the Nomination and Remuneration Committee of KMG's Board of Directors discuss issues related to remuneration of members of KMG's Board of Directors, as necessary. During the reporting period, the Nomination and Remuneration Committee of the Board of Directors has reviewed the results of the performance self-assessment of KMG's Board of Directors at the end of 2020, which included assessment of the level of remuneration of KMG's Board of Directors' members.

According to the Corporate Governance Code, no person may participate in decisions relating to their own remuneration.

**For more detailed information on GRI 102-15, 102-30, 102-35, 102-36, 102-37, 102-38, 102-39 (risk management, remuneration of the Board of Directors), see KMG's 2021 Annual Report at KMG website: <https://kmg.kz/eng/investoram/reporting-and-financial-result/>**

# DIGITAL TRANSFORMATION PROGRESS



102-10



## Results of 2021

Digital transformation is set as a cross-cutting objective of KMG's new Development Strategy 2022-2031, which identifies **sustainable development and progressive reduction of carbon intensity of operations** as one of its goals. To achieve this, the transformation includes projects to develop a lean manufacturing culture among KMG Group employees. For example, a Lean 6 Sigma (LSS) implementation project trains and certifies employees of KMG Group's production companies. LSS method helps to involve the personnel in a continuous effort to improve the company's performance while optimising resources. The programme encourages the continuous search for and implementation of simple, low-investment, short-term projects to reduce operating expenditures. A total of 13 LSS projects were implemented in oil production in 2021. Most of improvements concerned increasing the time between well workovers and reducing equipment repairs.

LSS project has previously been successfully implemented at oil refineries. Since 2016, 156 projects under the programme have been implemented at the refineries. 89 employees have been trained and certified. Qazaqstan Project Management Awards recognised Lean 6 Sigma Project in the Oil Refining and Petrochemicals as the best project of 2021 in Kazakhstan.

The 3rd place winner in the competition was the Computer-Aided Simulators (CAS) implementation project at Atyrau Refinery (AR) and Pavlodar Oil Chemistry Refinery (POCR), and PetroKazakhstan Oil Products (PKOP) is also introducing Computer-Aided Simulators (CAS). It solves similar sustainable development tasks. Using digital twins, the refinery unit operators simulate emergency and routine situations, which minimises operation disruptions due to human error and enhances workplace safety.

A total of 13 AR, 9 POCR and 1 PKOP process units are planned to be equipped with CAS.

## Sustainable Development Goal (SDG) 9 – Industrialisation, Innovation and Infrastructure

is pursued by ABAI Information System Development Project. This fully domestic digital product is being implemented by KMG Engineering LLP. The system will integrate all production data from KMG Group's Upstream companies, with the ability to verify and analyse it using artificial intelligence and machine learning tools, as well as instant visualisation.

ABAI IS will consist of about 20 autonomous modules, each addressing a specific production problem of KazMunayGas subsidiaries. In 2021, 5 pilot modules of the system were commissioned: ABAI Database, Visualization Centre, Process Mode, Downhole Pumping Equipment Selection and Complication Monitoring. They already demonstrated good results at the testing stage.

For example, the algorithms of the Process Mode module analyse well performance and calculate well potentials, which enables a more efficient allocation of planned oil production between wells and reservoirs each month and thus rationalises field development. The module is based on actual data from Kazgermunai's (KGM) internal database and takes into account the current and potential downhole pressures as well as productivity factors. Based on these values, the maximum possible amount of oil under the available geotechnical conditions is calculated. During the algorithm's testing period from May to October 2021, 13 KGM's wells increased production by 560 tonnes.

At the second stage of ABAI project, 12 more modules will be developed to digitise key oil production processes, from exploration and drilling to operation and economic impact assessment. Full implementation of the system is expected to cut KMG SDEs' operating expenses by 2-3%.

Several SDGs at once are covered by the project launched in 2021 to establish a Multifunctional Shared Service Centre (SSC) for KMG Group, which will carry out routine and transactional processes of bookkeeping and tax accounting, treasury, human resources management, administration and documentation support. This will reduce the burden on key businesses and free up the time of production

company managers for their direct tasks. The service model of SSC's engagement with businesses will ensure high quality and speed of service delivery. Increased labour productivity through standardisation and automation of routine processes will enable a more efficient allocation of resources within KMG and introduction of new processes **(SDG 8 – Decent Work and Economic Growth)**.

Another advantage of a SSC is an increased speed of information receipt throughout the holding, including instant access to information on liquidity, receivables, personnel movements and other critical management data under unified standards. A high rate of innovation introduction will be ensured by making the Shared Service Centre the main functional customer of IT architecture for the functions listed above and it would be able to centrally implement and replicate the advanced solutions available on IT market **(SDG 9)**.

The availability of new digital services in SSC will have a positive impact on the working conditions and quality of life of personnel, customers or suppliers. The digital literacy of company employees and ordinary people in the regions where KMG operates will also be improved **(SDG 10 – Reduced Inequality)**.

Finally, the establishment of SSC involves a full transition to electronic documents for the entire life cycle of certain business functions **(SDG 13 – Climate Action)**.

## Plans and Objectives for 2022

Transformation will continue to support the **Sustainable Development Goals and KMG's Development Strategy** through promotion of digital technologies in exploration in the next period. Priorities include seismic and well surveys using machine learning and artificial intelligence, creating a corporate digitalisation template using new assets (digital twin).

The focus of Lean 6 Sigma programme will also shift to Lean Digital, i.e. LSS tools will be used to develop business initiatives aimed at reducing losses in production processes through the use of customised digital solutions.

The issues of ecology, health and safety, production reliability, cost reduction and improving the digital literacy among KMG employees and Kazakhstani youth through various training programmes and internships remain on the transformation agenda.

## Digitalisation Projects in the Oil Refining and Petrochemicals Division

### Computer-Aided Simulators

In order to improve the quality of work of personnel in routine and non-routine situations, increase the reliability of unit operation and prevent unscheduled shutdowns, a project of Implementation of System for Training and Certification of Production Personnel at RoK Refineries through Introduction of Computer-Aided Simulators (CAS) is being implemented from 2019. The goal of the project is developing a dynamic process model based on a mathematical process model and a visualisation of the refinery's process unit. Visualisation is made by: 1) Full replication of the distributed control system (DCS) interface and logics 2) Display of real equipment in 3D or panoramic interface format. Using CASs, the unit operators regularly work out the emergency and routine situations (start / shutdown) in simulated conditions.

During the modernisation and upgrade of PKOP, the CASs were introduced at catalytic cracking and heavy residue units (RFCC), cat-cracked gasoline hydrotreatment (Prime G+), saturated and unsaturated liquefied hydrocarbon gas sweetening (Merox), short-cycle adsorption (SCA-2) and sulphur recovery units.

The CAS project initiated in 2019 covers **eleven** AR process units, **nine** POCR units and **one** PKOP unit.

During the project implementation in 2019-2020, CASs were commissioned at the delayed coking, naphtha isomerisation and splitter, diesel hydrotreating and paraffin hydrotreating units of POCR, catalytic reforming unit of PKOP, catalytic cracking (FCC), catalytic reforming (CCR) units and aromatics (PX) production complex of AR.

In 2021, the computer-aided simulators were introduced at 4 AR units (Sulfrex, Naphtha HT, Prime D, Parisom) and at the Sulphur Production Complex at POCR.

Rules for using CASs in the training and knowledge testing of refinery process personnel have also been developed and approved. Instructors have been appointed at the refineries, responsible for running the simulators, conducting training sessions, developing scenarios and testing knowledge about CAS.

Regular training sessions are held for refinery personnel using CAS in accordance with approved training plans, training schedules and prepared scenarios for emergency and routine situations.

## Advanced Process Control System

In order to solve the business task of process control automation at the unit, an Advanced Process Control System (APCS) has been put into commercial operation on a pilot basis at ELOU-AT-2 primary refining unit of AR. The system is known worldwide as Advanced Process Control (APC).

The function of APCS is that, like an 'autopilot', it steadily maintains the unit process mode within the specified limits. It automatically monitors constant parameters of unit load, column and heater temperatures and quality parameters of the streams leaving the unit. This reduces the influence of the human factor in process control.

By introducing APCS at AT-2, the spread in fuel quality was reduced by 67% for gasoline and by 73% for diesel fuel. APCS increases the gasoline yield by getting as close as possible to the end boiling point of gasoline, and the diesel yield by getting closer to the target pour point.

The project lasted about a year from April 2019, including AT-2 inspection, design, equipment installation, testing and integration of APCS with the distributed control system (DCS). AR's subject matter experts and unit operators have been trained in using the system. The system is in operation around the clock and is now as much an integral part of the unit control as the DCS.

Introduction of APCS at AT-2 unit has resulted in a significant effect. An increase in the gasoline and diesel yield by 0.32-0.36% (to 6,500 tonnes) amounted to about 350 mln tenge a year in monetary terms.

Following the success of this pilot, the system will be introduced at the Atyrau Refinery's AVT-3 unit in 2021, and at the catalytic cracking unit in 2022 and then at other Atyrau Refinery units. In 2022-2023, it is planned to replicate APCS at PKOP.

## 3D Layout. Refinery Engineering Data Management System

The project of Creating the Digital Layout and 3D Refinery Model is being implemented in order to create a digital layout of the refinery with high accuracy as the basis for a digital twin.

The project involves:

1. laser scanning of all facilities;
2. digitisation of all technical documentation of the refinery;
3. creation of a 3D digital model of the refinery based on point clouds;
4. implementation of the Digital Layout, a multifunctional information system to store, analyse, process and visualise engineering data.

The project is not just about introducing a freestanding digital layout and 3D model of the refinery. The primary goal is to integrate the 3D model into daily business processes of the refinery. Future users of the product are not only the production asset reconstruction department employees, but also process engineers, mechanical engineers, maintenance planners and reliability experts. The original scope of work was extended during the project by introducing a refinery engineering data management system and developing an information standard. There are also plans to integrate the new system with the existing IBM Maximo maintenance planning system.

In 2021, 3D layout engineering data management systems were commissioned at AR and POCR, and the business process of using 3D was implemented.

## KPI Digitalisation

Since July 2018, JSC NC "KazMunayGas" has been carrying out a project to build the first Kazakhstan Petrochemical Industries (KPI) gas chemical complex in Atyrau Region.

The polypropylene plant (KPI LLP) is the first phase of the Integrated Gas Chemical Complex (IGCC), which is scheduled for launch in 2021. Its capacity will be 500,000 tonnes annually. The second phase is the polyethylene plant.

KPI is a new industrial facility and there is an opportunity to build it as a fully digital asset from scratch.

Most of the major downstream and chemical companies (BASF, BP, ADNOC) have digitised their assets in stages

over a long period of time. There are no examples of fully digitalised assets in Kazakhstan yet. KPI aims to reach the development level of Digitalisation 4.0. In the future, once basic automation and digital solutions are in place, the possibility of building a remote process control centre for IGCC to control the plant from Atyrau is being considered.

KPI will be digitised in two stages. The first stage is scheduled to complete in Q4 2021 (in sync with the launch date of IGCC). The second stage will begin after IGCC is commissioned.

The first stage (before the commissioning of IGCC) implements introduction of the following components and systems: instrumentation and controls, emergency shutdown system (ESD), distributed control system (DCS), maintenance planning system, LIMS laboratory information system, MES production supervision system, production personnel training automation (computer-aided simulators), 3D refinery model, complex SAP S4/HANA implementation includes not only the core modules (ERP), but also the planning system, integration with production systems (MES, LIMS) and maintenance planning systems, as well as implementation of a single digital window (business intelligence tool).

The goal of SAP S4/HANA implementation project is comprehensive implementation of the latest version of SAP system at KPI in terms of corporate and production

modules. As part of the project, all business processes were designed based on global best practices and international experience for petrochemical assets, and a target organisational structure of the asset was developed based on best practices and benchmarking.

In addition to integration with internal refinery systems (MES, LIMS, IBM Maximo, EDMS), integration with external systems is also possible: ETI, client bank, zakup.sk.kz procurement system.

SAP Core modules were launched on 1 January 2021: FI, TR, CO, MM, SD, HCM. Accounting, procurement, controlling and human resources business operations are already managed in SAP system.

The second stage of KPI digitalisation includes implementation of an equipment reliability management system (APM system), introduction of advanced automation through Advanced Process Control (APC), and development based on SAP S4/HANA modules.

The implementation of digital technologies and solutions will improve IGCC's business efficiency: minimise equipment downtime and production failures, reduce reject rates, increase labour productivity, reduce operating expenses (routine repairs, consumption of raw materials, chemicals, utilities) and increase income by improving product yields as a result of optimisation.

## ETHICS AND INTEGRITY

102-16

### Values, Principles, Standards of Conduct

The most important principle of the Company's operations is ensuring high corporate responsibility. The corporate responsibility includes transparent and ethical behaviour that contributes to sustainable development and corresponds to the legislation and international norms of behaviour. The Company's activities in this area have a systemic nature, that is why KMG conducted the work for update of the current document on ethical issues – the new revision of Business Ethics Code was approved in order to comply with ethical behaviour standards and fair business conduct.

Pursuant to the approved Code, KMG's operations are based on the following corporate values:

- **Justice**
- **Loyalty**
- **Development**
- **Safety**
- **Responsibility**

The Company strictly follows the provisions of the Code as the basis of the KMG's relations with its shareholders, employees, subsidiaries and associated companies, governmental authorities, partners, other stakeholders, when making business decisions and in everyday operations is the

balance of interests, mutual respect, trust, responsibility and observance of rights and duties of each party.

The Code is an open document and is freely available to KMG's business partners and to any other stakeholders. It is also available on the Company's website in the Corporate Documents section.

## MECHANISMS OF APPLYING FOR CONSULTATIONS ON UNETHICAL CONDUCT

102-17

To ensure observation of employee rights, confidential and accessible means have been made available for real-time reporting of any wrongful actions on the part of employees or third parties.

Any employee of the Group or any other person who has any doubts regarding the legality of actions taken by other employees, counterparties, or any other persons interacting with KMG and its SDEs, may inform their management, supervisor or the Compliance Service.

Such information can be transmitted by the following confidential channels and means of communication:

- to the KMG's helpline system by e-mail [doverie@kmg.kz](mailto:doverie@kmg.kz), by helpline 8-(7172)-78-65-65;
- to the Ombudsman (for business ethics, discrimination, labour disputes and other labour matters, etc.) by e-mail [ombudsman@kmg.kz](mailto:ombudsman@kmg.kz), or by phone 8-(7172)-78-65-60, 78-65-61;
- to the Compliance Service (in case of any suspected or available information regarding corruption, fraud, or unethical conduct) through a single centralised hotline administered by Samruk-Kazyna JSC, which is serviced by an independent operator, KPMG:
  - toll-free call: 8 (800) 080 47 47;
  - WhatsApp: 8 (771) 191 88 16;
  - via web portal: [mail@sk-hotline.kz](mailto:mail@sk-hotline.kz)
  - via web portal: [www.sk-hotline.kz](http://www.sk-hotline.kz)

The contact details of the Hotline are available on the KMG's corporate website in the state, Russian and English languages. Similar information is available on the websites of SDEs.

All messages, including anonymous, will be received and processed by the operators and forwarded to KMG's

Compliance Service, which is in charge of their professional and confidential review. The Compliance Service will communicate the results of such review to the Audit Committee and KMG's Board of Directors on a quarterly basis. In 2021, the Hotline received 76 complaints and applications; the number of applications decreased by 36% compared to 2020, which is due to the change of the Hotline operator, withdrawal of some SDEs from KMG, and rejection of irrelevant applications by the Hotline operator.

The issues that did not directly relate to corruption and fraud control were also resolved owing to the applications sent to the Hotline. For example, the Hotline received reports about violations of business conduct and abuse of power. All the received applications were considered in accordance with the established timeframes and procedures with taking of relevant measures to decrease the possibility of repeat of similar situations in future and notifying the applicants about their consideration results.


**SAMRUK**  
 KAZYNA

**КазМунайГаз**  
 NATIONAL COMPANY ҰЛТТЫҚ КОМПАНИЯСЫ

### Hot line

You may inform on any violations of the Code of conduct, including cases of corruption, discrimination, unethical behavior and other violations

### We guarantee

- Confidentiality and anonymity
- Review of **100%** of requests

**Hotline telephone number: 8 800 080 47 47**

**WhatsApp messenger via number: 8 771 191 88 16**

**Internet portal: [www.sk-hotline.kz](http://www.sk-hotline.kz)**

**E-mail: [mail@sk-hotline.kz](mailto:mail@sk-hotline.kz)**

The hotline is operated by an independent operator, KPMG

### Hotline Nysana

**Hotline telephone number: 8-800-080-30-30**

**WhatsApp messenger via number: 8-702-075-30-30**

**Internet portal: [nysana.csc.kz](http://nysana.csc.kz)**

**E-mail: [nysana@csc.kz](mailto:nysana@csc.kz)**

Call center "Nysana" accepts free calls for all social and labor violations 24/7.

## No Success Without Trust

103-1,103-2,103-3 410-1, 412-1, 412-2, 412-3

Strict and comprehensive observance and protection of human rights is a fundamental principle of JSC NC “KazMunayGas” activities based on trust, honesty and transparency. At that, these rules apply not only to employees, but also to relations with partners, suppliers, contractors and other stakeholders.

The regulatory framework for protection of rights of the Company’s employees is reflected in KMG Confidential Reporting Policy approved by the Resolution of the Board of Directors dated 13.02.2020, Minutes No.1/2020 (hereinafter, the Policy) and KMG’s Economic Security Regulations approved by Resolution of KMG’s Management Board dated 30.07.2020, Minutes No.31 (hereinafter, the Regulations).

According to these documents, KMG and SDEs have available and round-the-clock (24/7) communication channels and means ensuring confidentiality in order to increase efficiency of preventive measures and offences prevention, to improve interaction and provide feedback from the Company’s employees, stakeholders (private and legal entities) and in order to protect legal rights and interests. Hotline, telephone and email Helpline.

The procedure for acceptance, registration and consideration of reports about violation of the Republic of Kazakhstan laws and the Company’s internal regulatory documents is also regulated by the Work Instruction for Operation of KMG Helpline Information System approved

by Order No. 129 of KMG Chairman dated 18.04.2018 (hereinafter, HIS).

Similar documents were approved by the SDEs.

These tools also contribute to the Company’s openness, accessibility of report submission, efficiency and quality of their consideration, identification and elimination of causes that create conditions for corruption, violations of the rights and legitimate interests of employees and third parties.

Reporting also helps to resolve issues related not only to combating the corruption and fraud, but also to business misconduct, abuse of office, and social and general issues, among others.

In 2021, KMG Group received 65<sup>18</sup> reports and applications (210 in 2020, 185 in 2019). The applications were related to labour rights of employees, remuneration, labour safety conditions, violations during tenders and other procurement procedures, abuse of power and unethical behaviour of company managers.

Applications are received by e-mail, telephone or as postal items.

All inquiries received from various communication channels are recorded and analysed in depth.

Applications and reports, including anonymous, are considered in accordance with the established procedure and timeframes, with actions being taken and with further notice being given to the applicants.



### Turysbek Akiaskarov, Director of KMG Corporate Security Department

*The important and fundamental principles of our Company are: trust, honesty and transparency, which are Our Company is governed by the principles of trustworthiness, honesty and transparency.*

*Employees and other stakeholders to freely to seek protection of their rights and interests without hindrance. rights and interests. At the same time to receive the necessary assistance and support.*

<sup>18</sup> Information without KTG data

Given its effectiveness, development of the Hotline, telephone and email helpline will continue.

In 2021, as in previous years, there were no complaints of discrimination on the grounds of nationality, gender, religion or political views. There are no recorded instances of forced and compulsory labour and no prosecutions or criminal proceedings relating to such violations.

KMG Group's corporate security departments take comprehensive efforts to ensure that the rights of employees and others are respected. In doing so, they are strictly guided by the laws of the Republic of Kazakhstan and international regulations, as well as general corporate and internal documents of the Fund, KMG and SDEs.



**In 2021, 5.1% of employees in the Group's corporate security departments were trained in compliance with the company's policies and procedures (in 2020, 7.5% were trained).**

In general, the management of KMG and its SDEs pays serious attention to human rights and is continuously working to improve this area of activities.

## ANTI-CORRUPTION

102-25, 103-1, 103-2, 103-3, 205-1

JSC NC "KazMunayGas" (hereinafter, the Company) builds its business on the principles of legality, good faith and ethics. The Company strictly observes the human rights, takes all possible steps to prevent corruption, takes care to maintain an impeccable reputation and strives to implement high international standards of conduct.

KMG has a Compliance Service (hereinafter, the Service). It is the responsibility of the Service to ensure that there is no risk of employees committing a corruption offence during their employment. While remaining an independent activity area of the company, the Service is integrated with all of the Company's business units.

In order to meet the standards of ethical and fair business conduct, KMG has taken steps to update existing and develop new internal compliance documents. The Anti-Corruption Policy and the Confidential Reporting Policy were amended in 2021. The changes concerned amendments to Kazakhstan's laws regarding prohibition of receiving gifts, close relatives working together, and changing the Hotline operator. In addition, KMG Group's Counterparty Due Diligence Policy has been approved. Similar policies have been approved in 35 SDEs of the company.

Following the best global practices in corporate governance, the Company continually strives to improve existing corporate standards. Thus, the Internal Control Rules of JSC NC "KazMunayGas" were approved to delimit the rights of access to insider information and to prevent misuse of such information by insiders.

Regarding its ongoing work with SDEs, the Company seeks to accelerate integration of companies into the corporate culture by introducing functions locally and shaping compliance programmes tailored to the company specifics. Compliance risk assessments were conducted at 14 companies (KMG, Ozenmunaygas, Embamunaygas, Pavlodar Oil Chemistry Refinery, Atyrau Refinery, KazTransOil, Kazmortransflot, KMG Engineering, OzenMunayService, Oil Service Company, KLPE, KPI, Kazakhoil Aktobe, KMG – Kumkol). Based on the risk analysis and assessment, the measures to minimise the risks have been developed. In addition, testing of accounting transactions, kinship analysis, and monitoring of compliance with the Anti-Corruption Law of the RoK and compliance policies were carried out.

Universal declaration of conflicts of interest for all employees of KMG group has been carried out in the Company since 2020 to create an effective system for managing the conflicts of interest, and define requirements for conduct of employees, which observance minimises the risks of decisions being influenced by personal interests and connections.

A universal tax declaration procedure was introduced in 2021 to support the government's goal of establishing a system of effective control over personal income and assets to combat the shadow economy and corrupt practices. At the first stage of the universal tax declaration, tax returns were submitted by 303 employees of KMG and its SDEs.

Meetings were held jointly with Samruk-Kazyna JSC with representatives of Mangystau Region Akimat and contractors in Aktau to promote the Hotline. Compliance meetings were held with the administrative and management personnel of Mangistaumunaigas JSC, Karazhanbasmunay JSC, Oil Services Company LLP and Isatay Operating LLP.

In order to introduce best global compliance practices, a workshop with Tengizchevroil was held for the compliance officers of SDEs.

**Commitment to high ethical standards is the foundation of good corporate governance and a guarantee of upholding and ensuring that the Company's interests take precedence over personal interests. Three-day online compliance training for KMG employees was held in 2021 to promote high ethical standards of doing business and intolerance of corruption in any form.**

In order to improve the effectiveness of the Compliance Service of KMG and its SDEs, as well as to strengthen the Company's controls and combat the corruption and fraud, training was conducted in 2021 for the compliance officers of KMG Group in the following areas:

- due diligence with regard to counterparties;

- identifying and managing the conflicts of interest;
- interviewing;
- checking the Company's employees;
- investigation planning and execution;
- preparing reports on investigation results.

This training was conducted with involvement of forensic experts from an international audit company.

The Compliance Service supports development of professional competencies and advanced training of KMG Group's compliance officers. Today the compliance teams include experts with international prestigious certifications from the Association of Certified Fraud Examiners (ACFE) and the International Compliance Association (ICA), and their numbers are growing.

In 2022, the Company will continue to further improve its compliance system. Key work areas will include:

- risk-based check of counterparties;
- development of compliance system in the companies;
- automation of the compliance procedure for declaring the conflicts of interest based on the own IT solutions;
- developing compliance training and communication materials.

## ECONOMIC PERFORMANCE

Against the backdrop of cumulative external influences, in 2021 we saw a gradual recovery of the Company's financial performance to pre-pandemic levels. A recovery in global demand and OPEC+ regulation of the oil market have been the key drivers for oil prices increase. Timely actions in response to external challenges has allowed the Company to achieve better performance than we forecasted.

The Company's net profit was **1,197 bln tenge** in the reporting period.

Furthermore, as one of the largest taxpayers in the geography of operation, KMG makes its contribution to the national budget in form of taxes and other payments. In 2021, the Company paid **787 bln tenge** in taxes and other obligatory payments to the budget.

103-1, 103-2, 103-3

Planning and performance of the KMG's Business Plan and Budget plays an important part in the Company's value increase and reinforcing its financial stability for all stakeholders. The KMG planning is aimed at provision of medium-term (5-year) and current (for one year) planning of the KMG activities according to priorities and goals defined in the Development Strategy.

Formation and approval of the consolidated and separate Development and Budget Plan of KMG is regulated by the Rules for formation, approval, adjustment and monitoring of the JSC NC "KazMunayGas" Development Plan. The Consolidated Business Plan includes the SDE plans for 5-year period and is regulated by the Plan for development, approval and monitoring of business plans and budgets of JSC NC "KazMunayGas" SDEs. The KMG's Development and Budget Plans are formed in the automated planning system according to requirements of the approved corporate accounting policy of KMG and International Financial Reporting Standards (IFRS).

The KMG Management monitors the Business Plan performance on the basis of monthly, quarterly and annual management reports.

The Company also employs over **55 thousand people** in the country, providing them with steady remunerations along with social assistance for them and their families. In 2021, the Company paid **54 bln tenge** of social and pension contributions for its employees.

Participation in domestic manufacturer support programmes and increasing the local content in procurements remain the KMG's priorities. At the end of 2021, the total volume of goods, works and services procured by KMG Group (excluding KTG) **from**

**Kazakhstani companies was 1,216 bln tenge**. The local content share in procurements was **78 %**.

In the course of its operating activities, KMG makes annual substantial contributions to improve social and economic potential of the country and develop the regions of the Company's operation.

The below economic performance figures provide a picture of the Company's contribution to the national economy.

## CREATED AND ALLOCATED ECONOMIC VALUE

201-1,201-4,415-1

Indicator	UoM	2019	2020	2021
<b>Allocated economic value</b>				
Total income	bln tenge	7,970	5,202	6,743
<b>Allocated economic value</b>				
Total expenditures	bln tenge	6,812	5,030	5,897
<b>Unallocated economic value</b>				
Profit	bln tenge	1,158	172	1,197

Total income is the total revenue and other income in the consolidated income statement.

Total expenditures is the total expenditures and expenses in the consolidated income statement.

Indicator	UoM	2019	2020	2021
Other taxes and payments (excluding CIT)	bln tenge	1,360	1,068	1,440
Other taxes and payments (including CIT)	bln tenge	1,522	1,156	1,551
Income tax paid	bln tenge	162	88	111
Payments to capital providers	bln tenge	318	331	306

The data was received from the consolidated cash flow report (direct method) of KMG for 2021.

Payments to capital providers consist of Dividends paid to the shareholder, Dividends paid to the non-controlling participation interest, paid Remuneration and Distributions in favour of NWF Samruk Kazyna JSC.

Indicator	UoM	2019	2020	2021
Capital investments (per accrual method)	bln tenge	505	454	414

KMG did not received any financial aid in monetary terms from the Government in the reporting period and does not make any donations for public/political use.

201-3

## Employee Pension Plans

In accordance with the national law, the pension savings of citizens are kept in the Unified Pension Savings Fund. The Company, in its turn, in accordance with the Collective Agreements of companies, fulfils additional obligations for social assistance to the retirees, according to which the employees retiring due to achievement of retirement age as well as after retirement, receive social assistance in the form of financial aid on the national and state holidays of the Republic of Kazakhstan, on anniversaries, in the

form of health resort treatment vouchers with partial cost compensation and other. In 2021, financial assistance to the retirees of the Company was provided for a total amount of over 2 bln tenge.

Some of KMG companies have an early retirement plan for employees approaching the retirement age, allowing to pay them compensation in case of mutually agreed termination of employment; employees who have reached the retirement age can receive compensation upon termination of employment.

Indicator	UoM	2019	2020	2021
Social expenditures and compulsory pension contributions	bln tenge	52	53	54

## KMG'S TAX ACCOUNTING POLICY

207-1, 207-4

In order to unify tax accounting in the companies of JSC NC "KazMunayGas" (hereinafter, KMG) Group, KMG has developed and implemented a **Corporate Tax Accounting Policy (hereinafter, Corporate TAP)**.

The Corporate TAP was developed in accordance with requirements of the RoK tax laws in interconnection with International Financial Reporting Standards (IFRS), the RoK Law On Accounting and Financial Reporting, other RoK legislative acts and international contracts ratified by the Republic of Kazakhstan as well as internal documents regulating activities of KMG/ subsidiary. The Corporate TAP provisions are a commercial and tax secret of the KMG Group.

In the event of any conflicts between the provisions of the Corporate TAP and norms of the RoK tax legislation or international contracts ratified by the RoK, the tax legislation standards or the corresponding international agreement standards are applied.

KMG and all its subsidiaries are **governed by the Corporate TAP**, except for the subsidiaries:

- Performing subsoil use operations as a part of the production sharing agreement that provides a special stable taxation regime
- Where KMG owns less than 50% of the majority shareholdings (participation interest)

- Registered outside the RoK as well as the KMG branches and its subsidiaries' branches registered outside the RoK.

The Corporate TAP's goal at achieving the tax accounting uniformity in order to form in the reporting *the most complete, objective and accurate information* taking into account the organisational and industry-specific peculiarities of KMG and its subsidiaries.

The Corporate TAP's *objective* is to reflect the specifics of tax accounting of the KMG Group in cases when the tax legislation:

- Contains the norms requiring or allowing to choose from several options or methods provided by the RoK Tax Code
- Establishes only common norms and does not ensure clearness and specifics in the ways of tax accounting, procedure for defining taxable items and the items related to taxation
- Requires to reflect certain conditions and provisions in the TAP.

The Corporate TAP is based on the following *principles* of the RoK Tax Code:

- Principle of Obligatory Taxation – KMG and its subsidiaries are obliged to timely and correctly calculate, withhold and pay taxes in full to the budget of the Republic of Kazakhstan.
- Taxation Equity Principle – operations of KMG and its subsidiaries cannot be subjected to double taxation with the same type of tax and payment for the same taxation unit for the same period

- Fairness Principle of KMG and its subsidiaries – it is prohibited to get benefit from illegal actions in order to ensure tax saving and tax payments reduction.

Based on the Corporate TAP, KMG, like all KMG subsidiaries, has developed and implemented **KMG Tax Accounting Policy (hereinafter, KMG TAP)**.

Approval of the Corporate TAP and the KMG TAP as well as amendments to them is within the competence of the KMG's Management Board.

**Amendments to the Corporate TAP and KMG TAP are made in the following cases:**

- Changes of the RoK Tax Code norms related to the procedure of tax accounting established by the Corporate TAP provisions
- Changes of the RoK Law On Accounting and Financial Reporting or the IFRS related to the procedure of tax accounting established by the Corporate TAP provisions

- The decisions made by KMG/subsidiary changing the methods and principles of accounting of the KMG Group, influencing the procedure of tax accounting, identifying the taxation items and/or the items related to taxation
- The decisions made by KMG/subsidiary leading to a change of procedure and principles of separate tax accounting of the KMG Group and other provisions, for which the RoK Tax Code has discretionary rules.

In other cases the changes in the Corporate TAP and the KMG TAP are introduced as required but not more than two (2) times a year.

KMG's tax planning approach takes into account the specifics of KMG's business activities and social impacts of this approach, which are fully consistent with JSC NC "KazMunayGas" Development Strategy for 2022-2031.

KMG's Strategic Goals for 2022-2031	Link between the Taxation Approach and Strategic Goals
Sufficient resource base to support KMG's growth	Fiscal incentives from government authorities
Increasing efficiency of KMG's value chain	Negotiations with the state regarding further optimisation of the tax burden for mature fields to increase production at such fields
Business diversification and product portfolio expansion	Changes in the tax environment and possibility of obtaining/ extending tax exemptions and preferences
Sustainable development and progressive reduction of carbon intensity of operations	Settlement of taxation procedure by obtaining clarifications from the tax authorities and amending tax law where necessary

KMG's Development Strategy is approved by resolution of KMG's Board of Directors.

For more detailed information about the Company's taxes (207-4) see 2021 Tax Report [www.kmg.kz/eng/investoram/reporting-and-financial-result](http://www.kmg.kz/eng/investoram/reporting-and-financial-result)



The approach to managing risks, including tax risks, is set by the corporate risk management system (CRMS).

KMG has integrated the corporate risk management system (CRMS) into the company's key business and management processes. CRMS aims to achieve an optimal balance between the KMG's growth in value, profitability and risk.

## Tax Administration and Control, Risk Management

Risk management in KMG prevents risk events that affect achievement of strategic and operational objectives, and limits their impact when they occur. Risk management is an integral part of KMG's strategic planning and corporate governance process and support of financial stability.

CRMS is a key component of the corporate governance system aimed at timely identification, assessment and monitoring of all material risks (including tax risks) and adoption of timely and adequate risk mitigation measures.

The CRMS Policy of KMG and its subsidiary and dependent entities (SDEs) applies to all of the KMG's activities.

## Risk Management Process

CRMS is designed to provide a consistent and clear framework for managing the risks associated with KMG's operations. KMG has built a vertical risk management process and functioning of risk management system at all levels of management, starting from the top level (KMG) to the line level (production business unit of SDE).

Each officer ensures that risks are properly considered when making decisions.

Risks are assessed using qualitative and quantitative tools that take into account the likelihood and impact of the risk.

CRMS is implemented through seven interrelated processes, integrated into KMG Group's business management processes:

1. Setting of goals (linking the strategic, medium-term and short-term planning objectives).
2. Risk/risk factor identification (determining the exposure of all KMG Group's activities, business processes to risks, the occurrence of which could adversely affect the ability to achieve planned objectives and goals).
3. Risk/risk factor assessment and analysis (assessment is done to determine the extent to which risks/risk factors affect achievement of KPIs). Production/non-production risks and their corresponding risk factors are analysed by probability of their occurrence (likelihood of realisation) and degree of impact (potential damage).
4. Risk management (the process of developing and implementing the measures to mitigate the adverse effects and/or likelihood of inherent risks and their corresponding risk factors or to obtain financial compensation upon occurrence of losses related to the risks of KMG Group operations).
5. Monitoring and reporting (monitoring the changes in risk parameters and effectiveness of risk management measures and control procedures. Monitoring is performed by KMG's Risk Management and Internal Control Service, a quarterly risk report consolidated with coverage of KMG SDEs is submitted to the Board of Directors).
6. Informing and communication (allows to provide the risk management process participants with reliable and timely risk information, raises awareness of risks, methods and tools to respond to risks. The relevant

information is identified, recorded and made available in a form and within time that enable the employees to perform their functions effectively).

7. Internal environment (implementation of the above components of the risk management process promotes a risk culture within KMG Group, based on establishing an appropriate "tone at the top", a high level of risk awareness and knowledge, responsibility of risk/risk factor owners, proactive risk management and timely reporting. KMG is committed to building an adequate organisational structure of CRMS that promotes effective corporate governance, ensuring appropriate segregation of duties, powers and responsibilities for identification, assessment, management and reporting of risks).

## Interaction with the Board of Directors

The following documents are submitted to KMG's Board of Directors at least once a year:

- proposals on the Company's risk appetite;
- consolidated Risk Register;
- risk map;
- Action Plan for management of the Company's risks.

In addition, a quarterly risk report (consolidated with coverage of KMG's SDEs), including tax risks, is submitted to KMG's Board of Directors for review and discussion in due course in its entirety. The Board of Directors takes appropriate measures to bring the current risk management and internal control system (RM&ICS) in line with the principles and approaches established by the Board of Directors.

The main tax risks of the Company may be:

1. Ambiguous interpretation of the tax and customs laws.
2. Incorrect preparation of tax reporting and customs goods declaration.
3. Untimely provision of tax statements.
4. Risks related to transfer pricing.
5. Taxation of controlled foreign companies (inclusion of the CFC's consolidated profit into the KMG's taxable income).
6. Non-resident taxation (individuals under the contracts with non-residents).

The main risk factors (causes) in the Company may be:

1. Internal factors:
  - 1) Poor tax administration in KMG SDEs;
  - 2) Untimely provision of/failure to provide documents and information to the Accounting Office by the programme administrators;
  - 3) Errors when preparing tax statements and customs goods declaration;
  - 4) Insufficient knowledge of the tax law;
  - 5) Inappropriate tax review of agreements/contracts;
  - 6) Untimely preparation/insufficient substantiation of tax preferences/changes in the tax law.
2. External factors:
  - 1) Ambiguous interpretation of the RoK tax law.
  - 2) Retrospective changes to the RoK tax law;
  - 3) Errors of the tax authority IT infrastructure;
  - 4) Ambiguous interpretation of the transfer pricing law.

The main preventive measures at the Company are:

1. Regular monitoring of changes in the RoK tax law, and their consideration in the work.
2. Participation of employees in seminars, forums, self-education in tax law and transfer pricing.
3. Follow up of tax accounting and tax statements;
4. Regular reconciliation with tax authorities.
5. Provision of tax expert opinions on major deals (approval of draft contracts).
6. Obtaining explanations from state revenue authorities regarding tax, customs and transfer law.
7. Audit of tax statements (as required).
8. Correspondence with authorised bodies to get explanations of regulatory legal acts.
9. Defending the company's interests in court.
10. Analysis of risks of price deviation in major transactions (TC).
11. Monitoring of draft revisions to the transfer pricing law initiated by the state authorities.

KMG regularly analyses problematic issues of tax legislation application in the KMG Group with further development of proposals to amend the legislative acts as well as initiates amendments into the RoK legislation in order to create favourable conditions for taxation of the KMG Group, systemic improvement of tax legislation, customs legislation of the Customs Union and the RoK, the RoK transfer pricing legislation, and increase of operating efficiency and value of KMG as a whole.

The relations and interaction with the state authorities are formed under the RoK Tax Code standards via business correspondence in order to determine a correct tax policy, participation in the meetings, discussions organized by the state authorities and shareholders and industry associations.

Protection of the KMG Group's interests by improving the legislation includes:

- development of proposals (including substantiation, presentations and calculations) on improvement of tax legislation;
- consideration and provision of opinions on the draft legal and regulatory acts developed by the corresponding state authorities as a part of execution of tax legislation and subsoil and subsoil use legislation;
- support of legislative initiatives of KMG Group by direct participation in advisory bodies of the industrial associations (Association of Taxpayers of Kazakhstan (ATK), KAZENERGY, National Chamber of Entrepreneurs of the RoK "Atameken" (NCE), working groups with involvement of the state authorities of the Republic of Kazakhstan and RoK Parliament.

## IMPLEMENTATION OF INVESTMENT PROJECTS

203-1, 203-2

## Stakeholder Engagement and Management of Tax-Related Problems

207-3

KMG is included in the list of major taxpayers subject to tax monitoring in accordance with tax legislation.

**KMG is a national leader of oil and gas industry of Kazakhstan with full integration at all stages of the value-added chain.** KMG has a stable platform for its long-term sustainable development as a leader of oil and gas industry and a vertically integrated company. KMG assets include the full cycle of hydrocarbons added-value chain, consisting of exploration, extraction, transportation,

refining and marketing. The activities are performed in Kazakhstan and Romania.

As a part of the above-mentioned businesses, KMG implements over 50 investment projects aimed at increase of hydrocarbon reserves, creation of new productions, and expansion and renewal of the existing productions.

Implementation of the following investment projects contributes to sustainable development of Kazakhstan:

## PROJECTS OF GASIFICATION OF THE REGIONS OF THE REPUBLIC OF KAZAKHSTAN, MODERNIZATION OF TRUNK AND GAS DISTRIBUTION NETWORKS, INCREASING THE RESOURCE BASE

**In 2021, the successfully completed investment projects included:**

- **Gasification of Almaty, upgrade, revamp of gas distribution networks of Almaty**

The project contributes to improving the environmental situation in Almaty and has provided gas to about 4,000 new customers, more than half of whom had been connected to the gas distribution network by the end of 2021, with the remaining households also having access to gas and will be connected as soon as possible. Since the start of the project, a total of 265 kilometres of new gas pipelines have been built, 94 kilometres of existing pipelines have been reconstructed and 35 gas control cabinets have been installed.

- **Construction of gas distribution networks of start-up complexes 1 and 2 of Stage 2 in Nur-Sultan**

Gas supply from AGDS-2 to Vostok main gas distribution station (MGDS) and Yugo-Vostok MGDS is provided as part of the 1st start-up complex, and gas supply from Vostok MGDS to the residential districts Internatsionalniy, Michurino, Kuigenzhar and to the boiler houses is provided as part of the 2nd start-up complex.

In 2021, gas distribution networks with a total length of 100.581 km were built, 5 gas control units and 5 gas control cabinets were installed.

The number of planned customers is 1,644. At the end of 2021, 71 customers and 1 utility company

were connected in Internatsionalniy, Michurino and Kuigenzhar residential areas.

**In 2021, work started on priority projects of KTG:**

- **Gasification of Sarsha Area and Warm Beach Resort Area**

Construction of a multifunctional hotel and tourist complex in Sarsha, Mangystau Region, is underway to develop the tourism industry as instructed by the President and the Government of the Republic of Kazakhstan.

To provide natural gas for new consumers of the hotel and tourist complex in Sarsha Area and Warm Beach Resort Area, a branch gas pipeline from Zhanaozen-Aktau main gas pipeline with the length of 85 km was built in 2021 with installation of an automatic gas distribution station with capacity of 80,000 m<sup>3</sup>/hour. In 2022, it is planned to complete the construction of distribution networks to Sarsha and Warm Beach resort area with a length of 59 km and two gas control units.

- **Construction of the loop line to existing Makat – North Caucasus main gas pipeline.**

In order to ensure stable gas supply to the population and large industrial facilities of Atyrau and Atyrau Region, prevent emergencies and provide uninterrupted gas supply to the special economic zone “National Industrial Petrochemical Technopark”, KTG plans to implement a project for construction of a looping line to Makat – North Caucasus gas pipeline during 2021-2023.

- **Construction of 2nd string of Beineu – Zhanaozen trunk gas pipeline.**

Due to the planned increase in gas consumption in Mangystau Region, the capacity of Beineu – Zhanaozen trunk gas pipeline is insufficient to pump the projected additional gas volumes.

In 2021, work began on reconstruction of Mangystau Region gas transmission system, which will improve the region’s energy security and throughput capacity to meet the growing demand for natural gas in the region. In order to solve the above tasks, KTG plans to build the second string of Beineu – Zhanaozen trunk gas pipeline between 2021 and 2023.

- **Construction of a trunk gas pipeline from Kashagan GPF to Makat – North Caucasus TGP with compressor station.**

Also, in order to increase the resource base and gas export to the PRC, a project has been initiated for

construction of a trunk gas pipeline from Kashagan GPF to the Makat – North Caucasus trunk gas pipeline with a compressor station. This project is a part of a large-scale project to build a gas processing plant, the Gas Processing Facility (GPF), at Kashagan field, with a processing capacity up to 1 bln cubic metres of raw gas per year.

Construction and assembly works are currently underway, with completion scheduled for 2023.

### The works under the following investment projects continued in 2021:

- **Construction of Beineu – Bozoi – Shymkent trunk gas pipeline**

Work continues under the investment project for construction of Beineu – Bozoi – Shymkent trunk gas pipeline with a throughput capacity up to 15 bln m<sup>3</sup>/year. The gas transported via this gas pipeline is supplied both to the population of the RoK regions and for export to PRC. Currently, all the main facilities of the gas pipeline, which provide the required (stated) capacity, have been commissioned.

In 2021, Beineu gas metering station and stage 1 SCADA system were commissioned at the Bozoi – Shymkent section of the trunk gas pipeline. Turkestan compressor station built by Intergas Central Asia JSC has been bought out (a total of 2 out of 4 built stations have been bought out for 2021).

In 2022, it is planned to complete the expansion of Beineu GMS and Bozoi CS and build the remaining stage 1 and stage 2 facilities (maintenance and operation areas, SCADA system and route road) and to buy out Aral compressor station built by Intergas Central Asia JSC to expand the gas pipeline capacity to 15 bln m<sup>3</sup>/year.

- **Geologic Exploration Works at the Barkhannaya – Sultankuduk structure of Amangledy deposit**

The exploration team completed 3D seismic acquisition in 2021 on the area of 690 km<sup>2</sup> and has now begun drilling of appraisal well No.B-5 at the Barkhannaya structure, which will result in estimation of HCs reserves.

- **Production Team of the Amangeldy Gas Deposit Group Development Project**

The production team is continuing work according to the Work Programme and FEM, with Anabay field planned to be commissioned in 2022-2023.

- **Gasification of three settlements (Zhitikara, Tobol and Bolshaya Churakovka) in Kostanai Region**

The project began in 2021 and involves gasification of certain districts of the town of Zhitikara and villages of Tobol and Bolshaya Churakovka. In 2022, it is planned to complete construction of high, medium and low pressure gas distribution networks to these settlements with a total length of 127.8 km. The project contributes to improving the environmental situation and will connect about 3,275 new consumers.

In 2021, 52.4 km of gas pipelines were built and 3 gas control units were installed. 42 new consumers have been connected.

- **Construction of high-pressure gas supply pipeline and gas distribution networks in Saimasai, Kainar, Enbekshikazakh District of Almaty Region (PK 1 and 2)**

It is planned to supply gas to consumers in Saimasai and Kainar settlements of Enbekshikazakh District of Almaty Region (1,150 houses, 36 social facilities) with perspective of further connection to gas transmission network of 25 nearby settlements of Enbekshikazakh District (12,144 houses, 288 social facilities and state-funded organisations).

The Project involves construction of high, medium and low pressure gas distribution networks with a total length of 89.79 km.

At the end of 2021, 13 km of gas pipelines have been built. The Project is scheduled for completion in 2022.

## OIL TRANSPORTATION PROJECTS

Kenkiyak-Atyrau Oil Pipeline Reversal Project as part of the combined project “Stage 2 of Construction Phase 2 of Kazakhstan-China Oil Pipeline” will increase the capacity to 20 mln tonnes of oil per year. The project aims to ensure transport of up to 20 million tonnes of West Kazakhstan oil per year to POCR and PKOP and to increase oil export to PRC. The second start-up complex (process facilities of Aman OPS) was commissioned on 30 June 2021, which made it possible to transport oil in reverse. All complex facilities will be fully operational in March 2022.

- **Oil and gas refining projects.**

Proving its commitment to best health, safety and environment (HSE) practices, in 2020 Atyrau Refinery continued to design and build new mechanical treatment facilities for the refinery under Tazalyq Project. Tazalyq Project includes upgrading of mechanical wastewater

treatment facilities and reclaiming of Tukhlaya Balka evaporation ponds located on the left bank of Atyrau in order to meet environmental requirements of governing authorities. The environmental benefit from the new mechanical treatment facilities is the disposal of 8,000 m<sup>2</sup> of open petroleum product evaporation ponds and recycling of 15% of treated wastewater in own production. The environmental effect from reclamation of the evaporation ponds is preventing the adverse impact on the atmosphere, groundwater, local flora and fauna. Subproject implementation terms: 1. Reconstruction of mechanical treatment facilities at Atyrau Refinery – 2019-2022. 2. Reconstruction of channel for effluents treated to standard quality and reclamation of evaporation ponds – 2019-2023.

- Construction of a new gas processing plant in Zhanaozen. Considering the maximum wear of the main process equipment, technical devices and utilities of the gas processing plant in Zhanaozen, significant risks related to safe labour conditions, compliance with environmental requirements, man-caused danger with environmental consequences, risks of gas disposal by subsoil users, risk of failure to provide the population of Mangystau Region with gas processing products. In 2021, pre-FEED and feasibility study were developed and submitted for the State Expert Review. In 2022, it is

planned to sign an EPC Contract for construction of the plant, develop the DED, order equipment and start the construction and assembly works. Construction of the plant is planned to be completed at the end of the first half of 2024.

## WATER SUPPLY PROJECTS

- KMG assists CITIC ENVIROTECH LTD with implementation of the project for construction of the formation water desalination plant at Karazhanbas field as well as utilities connection to the desalination plant. The current status of the utility networks connection is 98% and that of the plant is 80.5%. Also in 2021 and since the beginning of this year, all process equipment for the project has been delivered, except for the plant ventilation system and chemicals (in transit). The overall completion of the plant (PWRI) and commissioning is scheduled for the second quarter of 2022.
- KMG also implements the project to increase the throughput capacity of the Astrakhan – Mangyshlak water main and upgrade the worn out equipment to cover the existing deficit and future increase of water consumption in Atyrau and Mangystau Regions of the Republic of Kazakhstan. Stage 1 of the project will increase water feed capacity from 30,100 thous. m<sup>3</sup>/year



to 68,388 thous. m<sup>3</sup>/year by the end of 2024. The project DED has now been developed and work has been done to secure project funding.

- KMG is implementing a project to build a seawater desalination plant with a main pipeline near the Kenderli recreation area with a capacity of 50,000 m<sup>3</sup> per day according to the Comprehensive Plan for Mangystau Region Development. The purpose of this plant is to provide drinking water to the population of Zhanaozen to cover the existing water shortage. The plant construction is scheduled for completion at the end of 2024.

same time, KMG has undertaken a number of procurement initiatives in support of domestic producers under the Programme to Support Upgrade of Existing and Creation of New Production Facilities.

In order to achieve and improve the transparency and efficiency based on the most advanced international standards and techniques, the procurement procedures of KMG Group employ the Information E-Procurement System <https://www.skz.ru/regulations/> (hereinafter, IEPS), which provides unhindered access (with certain exceptions, primarily related to state secrets) to procurement information for all stakeholders, equal opportunities for all participants of procurements.

## PROCUREMENT PRACTICES

103-1, 103-2, 103-3, 204-1, 102-9, 102-10

Ensuring effective procurement with commitment to meet the sustainable development principles is an integral part of KMG's activities, which contributes to achievement of strategic and operational objectives.

KMG Group's procurement philosophy is compliance with legal and internal requirements, transparency of procurements, development of fair competition and provision of equal opportunities for contractors. At the

IEPS automates and standardises the entire procurement cycle (from the planning process to contract management), reduces the time required to complete the tasks and mitigates the impact of human error. E-procurement facilitates access to the market and thus contributes to greater efficiency, increased competition and reduced administrative burden and transaction costs.

In addition to public dissemination of procurement information relating to procurement procedures and procurement contracts, including information on invitations to tender and the conditions of contracts, IEPS enables early establishment and publication of requirements for participation in competitive procurement,



including the selection criteria and tendering rules. At that, IEPS provides an effective system of internal control, including appealing the procurement results in case of non-compliance with rules or procedures set out in regulations.

In addition, IEPS is integrated with government databases, which saves resources for bidders: time, huge amounts of paper for preparing the tender documents, money for preparing the notarised copies of documents, postage for forwarding of documents, and travel expenses.

## Total Procurement Volume

One important aspect of KMG's procurement activities is reducing single-source procurements and increasing the share of competitive procurements. In this regard,

accountability of the managerial employees of KMG and its subsidiaries and dependent entities (SDEs) is provided, including through target setting in the Key Performance Indicator (KPI) Chart of the managers.

Despite the desire to develop a competitive market, the share of non-competitive procurements within intra-group cooperation and/or through a single source significantly prevails, mainly due to lack of a competitive environment (e.g., oil transportation by trunk pipelines, oil refining at oil refineries in Kazakhstan, etc.) and the need to provide a social environment in the regions of deployment (e.g., procurement of oilfield services).

During the reporting period, the total amount of supplied goods, works and services (including annual and long-term purchases) was **1,216 bln tenge**, of which **78%** was local content.

### TOTAL AMOUNT OF GOODS, WORKS AND SERVICES AND LOCAL CONTENT SHARE (BLN TENGE)

Year	Goods		Works and services		Total	
	Total amount (bln tenge)	Local content share, %	Total amount (bln tenge)	Local content share, %	Total amount (bln tenge)	Local content share, %
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

Note: Separately for the divested KTG, the total amount of goods, works and services and local content share for 2021: Goods 201 bln tenge, 97% LC share, Works and Services 341 bln tenge, 86% LC share, Total 541 bln tenge, 90% LC share.

14% decrease in the local content in the goods procurement versus 2021 is due to divestment of KTG (gas purchase) from KMG in early 2021.

The above figures reflect the consolidated data for all KMG subsidiaries where fifty or more percent of voting shares (participation interest) are directly or indirectly owned or held in trust by KMG, and which are subjects of procurement procedures regulated by Samruk Kazyna JSC.

## Pre-Qualification of Potential Suppliers

International procurement practices demonstrate extensive development of pre-qualification mechanism for potential suppliers. Continuous improvement of

procurement based on the requirements and standards of Kazakhstan and international practices is one of the priorities for KMG.

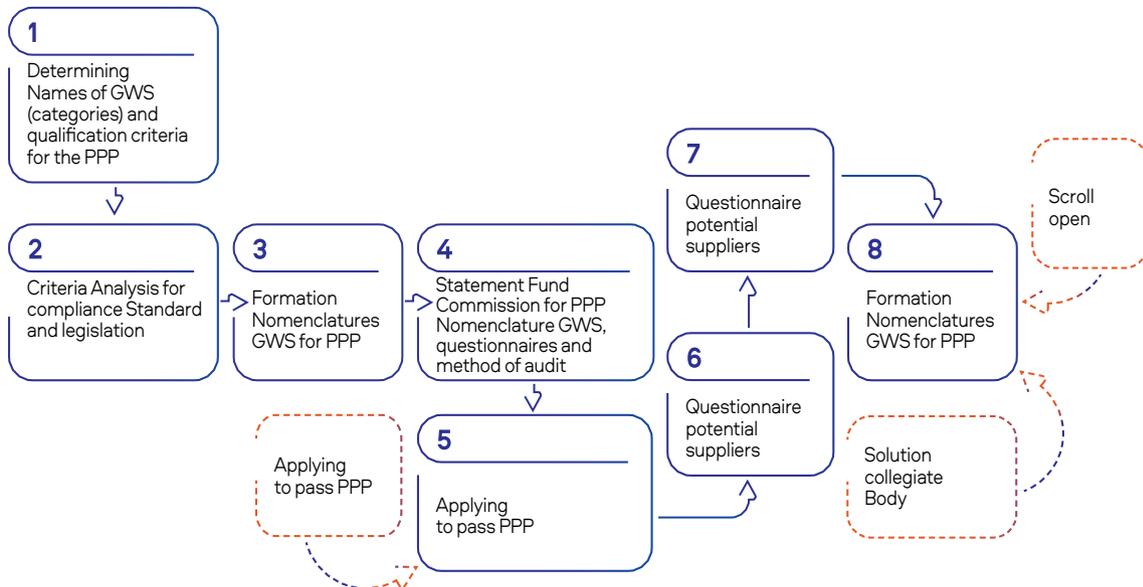
Pre-qualification (PQ) is the assessment of potential suppliers for compliance with qualification requirements defined in accordance with the Standard<sup>19</sup>, carried out through questionnaire survey and audit.

The key goals of PQ are:

1. arranging a simple, transparent and efficient process for assessing suppliers against set qualification criteria;
2. supporting real local producers;
3. improving the quality of procured goods, works and services (GWS);
4. shortening the timeframes and simplifying the procurement procedures.

<sup>19</sup> Procurement Management Standard of Samruk-Kazyna National Wealth Fund JSC and companies with 50 or more percent of voting shares (participation interest) directly or indirectly owned or held in trust by Samruk-Kazyna JSC, approved by Resolution No. 31/19 of the Management Board of the Fund dated 9 September 2019.

## PRE-QUALIFICATION OF POTENTIAL SUPPLIERS PROCEDURE (PPP)



\*PQ list formed after gathering information from potential suppliers and after all potential suppliers have passed the stages of PQ procedure.

2021

## Category Procurements

Procurement category management is the process of developing an integrated approach to reducing the costs associated with procurement and use of goods, works and services included in priority categories.

Categorisation is done by grouping the goods, works and services into procurement categories based on common characteristics of the procured item and/or a single market of potential suppliers. Categories may include one or more items of goods, works and services. Categories with high level of costs, criticality, savings potential and manageability are identified as priorities.

Category management increases the potential for savings through more detailed analysis by developing and approving a category procurement strategy. This strategy is a document that defines the optimal approach to goods, works and services procurement based on maximum benefit in the long or short term. Procurement category strategies should include goals and objectives, analysis of the internal and external environment, procurement category management approaches, supplier development requirements, calculation of benefits and implementation plan.

Category management can significantly reduce the cost of acquiring and using goods, works and services by applying strategic planning, detailed analysis of procured goods and services and calculations of total cost of ownership, as well as by means of cross-functional cooperation with various business units. This procurement method is effective in that it ensures both quality and transparent pricing by working with reliable producers and suppliers.

Procurement category management includes:

- categorisation of procured goods, works and services and prioritisation of procurement categories;
- development (update) and approval of category procurement strategies for priority categories;
- implementation of procurement category strategies;
- monitoring of procurement category strategies implementation;
- supplier development.

For KMG, category procurement volume in 2021 amounted to 117,436.49 mln tenge. This method is planned to achieve an economic benefit of 13,527 mln tenge in procurement of goods, works and services included in priority categories.

## VOLUME AND BENEFITS OF CATEGORY PROCUREMENT IN 2017-2021:

Indicator	2019	2020	2021
Volume of category procurements, mln tenge	41,531.68	49,716.04	117,436.49
Benefits of procurement category management, mln tenge	4,101.81	7,011.23	6,494.76

### Import Substitution

As a company representing the state's interests in the oil and gas industry, KMG is actively working on import substitution under the state programme to support upgrade of existing and creation of new production facilities through off-take agreements. The key objective of the programme is supporting the private entrepreneurs initiating new production facilities and technological upgrading in order to manufacture the products demanded by Samruk-Kazyna JSC Group companies.

The off-take agreement mechanism provides for implementation of import-substitution projects with a condition of future purchase and supply of commodities to be produced as a result of such implementation.

### Commitment to Sustainable Procurements

KMG's sustainable development principles are reflected in its cooperation with contractors based on legality and transparency, compliance with contract conditions, incorruptibility and intolerance of any instances of corruption, and in selection of contractors based on a combination of the following factors: best price, quality and conditions, and contractor's goodwill.

At that, KMG requires the contractors to makes reciprocal commitments 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 conditions of contracts concluded by KMG with its contractors in order to respect labour rights and create favourable working conditions for citizens of the Republic of Kazakhstan, protect children's rights and ensure environmental safety. According to KMG, these measures will help reduce the number of cases of misconduct by companies cooperating with KMG.

When procuring goods, KMG also sets requirements for potential suppliers to provide certificates of compliance with the quality management system.

## Cooperation with Contractors and Ensuring the Social and Labour Rights of Contractors' Employees

103-1, 103-2, 103-3, 414-1

In order to comply with the established guarantees of labour relations for contractors' employees, the **Standard Regulations for Cooperation of SDEs with Contractors Operating at KMG Facilities** have been approved and are

currently being introduced by KMG in SDEs. The Regulations are binding for SDEs in the course of execution and monitoring of contracts with the contracting companies that have their own personnel and will form a part of contracts between SDEs and contracting companies. The main objective of the Regulations is ensuring social and labour rights of the contracting companies employees.

The situation in SDEs is under constant monitoring by KMG and remains relatively stable. Being aware of the potential adverse effects caused by contractor downtime during the pandemic, KMG took steps to support contractors to the maximum extent by allocating workloads to maintain personnel employment, keeping a balance between the company's interests and socio-economic situation.

To increase the remuneration of contractors' employees, KMG recommends SDEs to set requirements for contractors at the contracting stage so that monthly tariff rates/salaries of contractors' employees are not lower than 70% of the monthly tariff rates/salaries of similar occupations at KMG SDEs and implement minimum social package. KMG Group has allocated 3.8 bln tenge in 2021 for these purposes.



## ANTI-COMPETITIVE CONDUCT

206-1

During the reporting period, 26 administrative cases were initiated against KMG Group companies for violations of antimonopoly laws (all against SDEs).

Of these, 1 administrative case was partially resolved in favour of SDE, 12 administrative cases were resolved not in favour of SDE and 13 cases are pending.

There are no civil cases relating to anti-competitive conduct, anti-trust or anti-monopoly law violations.

## SOCIAL AND ECONOMIC COMPLIANCE

419-1

There are no civil or administrative cases where the subject matter of the litigation/violation was non-compliance with laws and regulations in the field of social and economic regulation or disputes with local communities.



# APPENDICES



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## Independent practitioner's assurance report

To the Shareholders, Management and Stakeholders of National Company "KazMunayGas" JSC

### Subject matter

We have been engaged by National Company "KazMunayGas" JSC (hereinafter "the Company") to perform a limited assurance engagement, as defined by International Standards on Assurance Engagements, (herein "the Engagement"), to report on the Company's Sustainability Report 2021 (hereinafter "the Report") for 2021 (hereinafter "the reporting period"). Under this engagement, we did not perform any procedures with regard to the following:

- ▶ Forward-looking statements on performance, events or planned activities of the Company;
- ▶ Quantitative and qualitative data on JSC "KazTransGaz" performance;
- ▶ Quantitative and qualitative data on loss-time injury rate and the fatality rate for the Company's contractors; and
- ▶ Information about Report compliance with the Sustainable Development Goals and with the principles of the UN Global Compact.

### Applicable criteria

In preparing the Report the Company applied Global Reporting Initiative Sustainability Reporting Standards (hereinafter "GRI Standards") in Core option and the sustainability reporting principles of the Company as set forth in paragraphs "About Report", in Annex 1 of the Report, also in the notes to the indicators in the Report text (hereinafter "the Criteria").

### The Company's responsibilities

The Company's management is responsible for selecting the Criteria, and for presenting the Report in accordance with the Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the Report, such that it is free from material misstatement, whether due to fraud or error.

### Practitioner's responsibilities

Our responsibility is to express a conclusion on the presentation of the Report based on the evidence we have obtained.

We conducted our assurance engagement in accordance with International Standard for Assurance Engagements (revised) "International Standard for Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" (hereinafter "ISAE 3000"). ISAE 3000 requires that we plan and perform our engagement to obtain limited assurance about whether, in all material respects, the Report is presented in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

### Our Independence and Quality Control

We apply International Standard on Quality Control 1 (ISQC 1), and accordingly, we maintain a robust system of quality control, including policies and procedures documenting compliance with relevant ethical and professional standards and requirements in law or regulation.

We comply with the independence and other ethical requirements of the IESBA Code of Ethics for Professional Accountants, which establishes the fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

### Summary of work performed

The assurance engagement performed represents a limited assurance engagement. The nature, timing and extent of procedures performed in a limited assurance engagement is limited compared with that necessary in a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is lower.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within information technology systems.



A limited assurance engagement consists of making inquiries, primarily of persons responsible for preparing the Report and related information and applying analytical and other appropriate procedures.

Our procedures included:

- ▶ Inquiries of the representatives of the Company management and specialists responsible for its sustainability policies, activities, performance and relevant reporting,
- ▶ Analysis of key documents related to the Company sustainability policies, activities, performance and relevant reporting,
- ▶ Obtaining understanding of the process used to prepare the information on sustainability performance indicators of the Company,
- ▶ Benchmarking of the Report against sustainability reports of selected international and Kazakhstani peers of the Company and lists of sector-specific sustainability issues raised by stakeholders,
- ▶ Review of a selection of corporate and external media publications with respect to the Company sustainability policies, activities, events, and performance in reporting period,
- ▶ Analysis of material sustainability issues identified by the Company,
- ▶ Identification of sustainability issues material for the Company based on the procedures described above and analysis of their reflection in the Report,
- ▶ Review of data samples regarding key production, transportation and refining of oil and gas, economics and finance, personnel management, use of energy resources, environmental protection, industrial safety, labor safety and social and charitable activities indicators for the reporting period, to assess whether these data have been collected, prepared, collated and reported appropriately,
- ▶ Collection on a sample basis of evidence substantiating other qualitative and quantitative information included in the Report at the headquarters level,
- ▶ Assessment of compliance of the Report and its preparation process with Company's sustainability reporting principles,
- ▶ Assessment of compliance of information and data disclosures in the Report with the requirements of the Core option of reporting "in accordance" with the GRI Standards.

We also performed such other procedures as we considered necessary in the circumstances.

#### **Conclusion**

Based on the procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the Report is not represented fairly, in all material respects, according to the Criteria.

Ernst & Young Advisory LLP

Almaty  
30 May 2022

# APPENDIX 1. SCOPE OF REPORTING, CHANGES, NOTES

102-45, 102-46, 102-48, 102-49

The Report covers KMG's subsidiaries and dependent entities with fifty or more percent of voting shares (participation interests) directly or indirectly owned or held in trust by KMG, as well as the legal entities which activities KMG is entitled to control.

The list of legal entities included in the consolidated financial statements is represented by the following significant direct subsidiaries: KazMunayGas EP JSC, KazMunayTeniz IOC LLP, Karachaganak KMG LLP, Kazakhturkmunay LLP, JSC "KazTransOil"<sup>20</sup>, Cooperative KazMunayGas U.A, POCR LLP, AR LLP, KMG International N.V., KMG Drilling & Services LLP.

Use of Energy Resources and Energy Efficiency section covers 14 SDEs, which most fully represent the Group's energy-intensive enterprises.

- **Upstream** – Ozenmunaygas JSC, Embamunaygas JSC, Kazgermunai JV JSC, Karazhanbasmunay JSC, Mangistaumunaigas JSC, Kazakhturkmunay LLP, KazakhOil Aktobe LLP.
- **Midstream** – NMSC Kazmortransflot JSC, JSC "KazTransOil", JSC "KazTransGas" Group (data for 10 months) is represented by Intergas Central Asia JSC, Asia Gas Pipeline LLP, KazTransGas – Aimak JSC, Amangeldy Gas LLP, Beineu – Shymkent Gas Pipeline LLP, KazTransGas Onimderi LLP.
- **Downstream** – Atyrau Refinery LLP, Pavlodar Oil Chemistry Refinery LLP, Pavlodar Refinery LLP, Caspi BITUM JV LLP.

#### Use of Water Resources section covers:

Karazhanbasmunay JSC, Mangistaumunaigas JSC, Kazgermunai JV LLP, Kazakhturkmunay LLP, Ozenmunaygas JSC, Embamunaygas JSC, Kazakhoil Aktobe LLP, KazGPP LLP, Caspi BITUM JV LLP, Pavlodar Oil Chemistry Refinery LLP, PetroKazakhstan Oil Products LLP, Atyrau Refinery LLP, JSC "KazTransOil", NMSC Kazmortransflot LLP, Intergas Central Asia JSC, Asia Gas Pipeline LLP, KazTransGas – Aimak JSC, Amangeldy Gas LLP, Beineu – Shymkent Gas Pipeline LLP, Magistralny

Vodovod LLP, UDTV LLP – these subsidiaries and dependent entities are the main operating assets of KMG and have a significant impact on use of water resources in Kazakhstan.

KTG Group is represented by Intergas Central Asia JSC, Asia Gas Pipeline LLP, KazTransGas – Aymak JSC, Amangeldy Gas LLP, Beineu – Shymkent Gas Pipeline LLP.

**Atmospheric Emissions section** covers the following subsidiaries and dependent entities of KMG: Kazakhoil Aktobe LLP, Kazakhturkmunay LLP, Mangistaumunaigas JSC, Embamunaygas JSC, Ozenmunaygas JSC, Kazgermunai JV LLP, Karazhanbasmunay JSC, KazGPP LLP, JSC "KazTransGas", JSC "KazTransOil", Pavlodar Refinery LLP, Atyrau Refinery LLP, PetroKazakhstan Oil Products LLP, CASPI BITUM JV LLP and oil service companies.

KTG Group is represented by Intergas Central Asia JSC, Asia Gas Pipeline LLP, KazTransGas – Aymak JSC, Amangeldy Gas LLP, Beineu – Shymkent Gas Pipeline LLP.

**Beneficial Use of Raw Gas section** covers the following subsidiaries and dependent entities of KMG: Kazakhoil Aktobe LLP, Kazakhturkmunay LLP, Mangistaumunaigas JSC, Embamunaygas JSC, Ozenmunaygas JSC, Kazgermunai JV LLP and Karazhanbasmunay JSC.

**Waste Management section** covers: Ozenmunaygas JSC, Embamunaygas JSC, Karazhanbasmunay JSC, Kazgermunai JV LLP, Kazakh Gas Processing Plant LLP, Ural Oil & Gas LLP, Kazakhturkmunay LLP, Kazakhoil Aktobe LLP, Mangistaumunaigas JSC, Zhambyl Petroleum LLP, Urikhtau Operating LLP, JSC "KazTransOil", Magistralny Vodovod LLP, NMSC Kazmortransflot LLP, Atyrau Refinery LLP, Pavlodar Refinery LLP, PetroKazakhstan Oil Products LLP, Caspi BITUM JV LLP, Oil Services Company LLP, Ozenmunayservice LLP, Oil Construction Company LLP, Ken-Kurylyservice LLP, KMG EP-Catering LLP, UDTV LLP, UTTiOS LLP, Mangistauenergomonai LLP, Oil Transport Corporation LLP.

<sup>20</sup> Until 8 November 2021, KTG activities were part of the Gas Sales and Transportation operating segment. Once KTG has been transferred, the Sales and Transportation segment is no longer presented in the segment note.

KTG Group is represented by Intergas Central Asia JSC, Asia Gas Pipeline LLP, KazTransGas – Aymak JSC, Amangeldy Gas LLP, Beineu – Shymkent Gas Pipeline LLP.

**Environmental Costs section** covers: Ozenmunaygas JSC, Embamunaygas JSC, Karazhanbasmunaygas JSC, Kazgermunai JV LLP, Kazakh GPZ LLP, OzenMunayService LLP, Kazakhturkmunay LLP, Kazakhoil Aktobe LLP, Mangistaumunaigas JSC, JSC “KazTransOil”, NMSC Kazmortransflot LLP, Oil Construction Company LLP, Oil Services Company LLP, Urikhtau Operating LLP, KMG Systems & Services LLP, Atyrau Refinery LLP, Pavlodar Refinery LLP, PetroKazakhstan Oil Products LLP, Caspi BITUM JV LLP.

KTG Group is represented by Intergas Central Asia JSC, Asia Gas Pipeline LLP, KazTransGas – Aymak JSC, Amangeldy Gas LLP, Beineu – Shymkent Gas Pipeline LLP.

**Compliance section** covers: Ozenmunaygas JSC, Embamunaygas JSC, Karazhanbasmunaygas JSC, Kazgermunai JV LLP, Kazakh GPZ LLP, OzenMunayService LLP, Kazakhturkmunay LLP, Kazakhoil Aktobe LLP, Mangistaumunaigas JSC, JSC “KazTransOil”, NMSC Kazmortransflot LLP, Oil Construction Company LLP, Oil Services Company LLP, Urikhtau Operating LLP, KMG Systems & Services LLP, Atyrau Refinery LLP, Pavlodar Refinery LLP, PetroKazakhstan Oil Products LLP, Caspi BITUM JV LLP.

KTG Group is represented by Intergas Central Asia JSC, Asia Gas Pipeline LLP, KazTransGas – Aymak JSC, Amangeldy Gas LLP, Beineu – Shymkent Gas Pipeline LLP.

**Social Responsibility section** reporting covers the following subsidiaries and dependent entities of KMG: Ozenmunaygas JSC, Embamunaygas JSC, KazMunayGas EP JSC, Cooperative KazMunayGas U. A, UDTV LLP, Ken-Kurylys-Service LLP, KMG EP-Catering LLP, KazGPP LLP, OZENMUNAYSERVICE LLP, Kazakhturkmunay LLP, Kazakhoil Aktobe LLP, Urikhtau Operating LLP, JSC “KazTransOil”, NMSC Kazmortransflot LLP, KMG Systems & Services LLP, Caspi BITUM JV LLP, Pavlodar Refinery LLP, Atyrau Refinery LLP, KMG Drilling & Services LLP, KMG-Security LLP, Oil Construction Company LLP, Oil Services Company LLP, Mangistauenergomunai LLP, Munatelecom LLP, Oil Transport Corporation LLP, CC of JSC NC “KazMunayGas”, KMG International N.V., KMG Finance Sub B.V, Al-Farabi LLP, KMG Engineering LLP, KMG Karachaganak LLP, KMG-Kumkol LLP, KazMunayGas-Service LLP, KMT LLP, AK SU KMG LLP (Satpayev Operating LLP), PSA LLP, Batumi Sea Port LLC, KazMunayGas-Onimderi LLP, Batumi Oil Terminal LLC, Karpovsky Severny LLP, Petrotrans Limited, Magistralny Vodovod LLP, KMG Aero LLP.

### **Additions, assumptions and description of the data collection, consolidation and calculation methodology.**

The data in the Report may slightly differ from the data presented in the consolidated financial statements (CFS) since the estimates are rounded. In such cases, the data presented in the relevant CFS posted on KMG’s website is true and primary. Due to different calculation methodologies and approaches to information disclosure in the Report, the given data may slightly differ from the data published earlier.

## APPENDIX 2. ENVIRONMENTAL INDICATORS

	Production			Transportation				Processing		
	2019	2020	2021	2019	2020	2021		2019	2020	2021
						KMG	KTG (10 mon)			
<b>Greenhouse gas (GHG) emissions</b>										
Direct GHG emissions (CO <sub>2</sub> , mln tonnes)	2.3	2.0	2.2	2.7	2.1	0.2	2.6	4.7	4.6	4.5
GHG emission intensity (tonnes of CO <sub>2</sub> per 1000 tonnes of HCs)	93	87	102	-	-	-	-	-	-	-
<b>APG flaring</b>										
Flaring (mln tonnes of CO <sub>2</sub> )	0.2	0.13	0.11	-	-	-	-	-	-	-
Flared gas amount per unit of produced HCs (tonnes per 1000 tonnes of produced HCs)	2.95	2.2	2.1	-	-	-	-	-	-	-
Flaring (mln m <sup>3</sup> )	0.08	0.06	0.05	-	-	-	-	-	-	-
<b>Energy Intensity</b>										
Energy consumption (mln GJ)	55.5	48.2	53.9	66	44.6	5.4*	45.4	61.3	63.8	55.5
<b>Pollutant emissions</b>										
Sulfur oxides (SO <sub>x</sub> ) (thous. tonnes of SO <sub>2</sub> )	4.8	5.6	7.4	0.2	0.3	0.1	0.1	7.2	6.9	4.7
Nitrogen oxides (NO <sub>x</sub> ) (thous. Tonnes of NO <sub>2</sub> )	5.3	5.4	5.6	6.2	5.6	0.6*	6.4	6.9	6.7	6.5
<b>Spills</b>										
Unauthorised tie-ins – volume (thous. tonnes)	-	-	-	-	-	-	-	-	-	-
Unauthorised tie-ins – quantity	-	-	-	2	-	-	-	-	-	-
Oil spills – volume (onshore) (thous. tonnes)	0.65	0.29	0.33	-	-	-	-	-	-	-
<b>Water</b>										
Total water intake volume of KMG (mln m <sup>3</sup> )	52.4	47.7	45.1	24.9	22.7	23.1	0.86	16.2	15.4	16.1
Water discharge volume (mln m <sup>3</sup> )	0.9	0.7	0.4	1.0	0.8	0.21	0.33	9.2	9.2	12.9
<b>Waste</b>										
Hazardous (thous. tonnes)	846.4	824.9	788.4	46.6	40.3	69.1	2.0	62.2	128.5	106.7
Non-hazardous (thous. tonnes)	12.6	28.8	34.7	4.9	6.8	11.1	1.0	7.3	1.9	22.0
Total waste (thous. tonnes)	859	853.7	823.1	51.5	47.1	80.2	3.0	69.5	130.4	128.7
• *including drill cuttings, onshore (thous. tonnes)	193.2	178.7	158.6	-	-	-	1.5	-	-	-
• *including drill cuttings, offshore (thous. tonnes)	0	0	0	-	-	-	-	-	-	-

\* the decrease in the level of indicators is associated with the retirement of KTG from the asset structure

## ENVIRONMENTAL COSTS (GRI 103-3)

Costs	2019		2020		2021			
	mln tenge	mln USD	mln tenge	mln USD	KMG mln tenge	mln USD	KTG (10 m.) mln tenge	mln USD
<b>1 Costs associated with waste, emissions and pollutant discharges. total</b>	<b>14,847.3</b>	<b>38.79</b>	<b>18,312.1</b>	<b>43.0</b>	<b>23,468.9</b>	<b>55</b>	<b>328.7</b>	<b>0.77</b>
1.1 Waste processing and disposal	9,733.2	25.43	13,190.3	30.9	12,750.86	299	80.3	0.18
1.2 Purification of emissions and pollutant discharges	3,177.6	8.3	4,787.9	11.2	10,104.56	23.7	197.7	0.46
1.3 Costs of development and verification of document packages on greenhouse gas emissions	101.9	0.27	149.3	0.4	229.29	0.5	22.5	0.05
1.4 Environmental liability insurance	118.2	0.31	125.1	0.3	370.35	0.9	28.2	0.06
1.5 Costs of elimination of environmental damage, including spill response costs	1,460.7	3.8	0.3	0.001	4.4	0.01	0	0
1.6 Costs of environmental compensatory measures	255.7	0.7	59.2	0.1	9.42	0.02	0	0
<b>2 Investments in prevention of environmental impact and environmental management. total</b>	<b>1,198.1</b>	<b>3.1</b>	<b>21,535.3</b>	<b>50.5</b>	<b>5,607.5</b>	<b>13</b>	<b>23.8</b>	<b>0.05</b>
2.1 Personnel for education and training of employees	18.8	0.5	9.3	0.02	68.2	0.16	0	0
2.2 External certification and development of environmental management system	43.4	0.1	24.1	0.06	39.21	0.09	2.7	0.006
2.3 Personnel for general environmental management activities	196.7	0.5	2.0	0.005	3.4	0.008	4.1	0.009
2.4 Research and development	366.0	1.0	820.5	1.93	520.98	1.2	0	0
2.5 Additional expenses on introduction of cleaner technologies	123.5	0.3	20,665.4	48.49	4,489.8	10.5	0	0
2.6 Additional expenses on “green procurements”	360.3	0.9	7.2	0.02	38.1	0.08	6.2	0.01
2.7 Other environmental management costs	89.4	0.2	6.8	0.02	447.7	1	10.8	0.02

## ENVIRONMENTAL PAYMENTS (REGULATORY)

	2019		2020		2021			
	mln tenge	mln USD	mln tenge	mln USD	KMG mln tenge	mln USD	KTG (10 mln) mln tenge	mln USD
Atmospheric emissions from APG flaring	1,054	2.7	1,170	2.7	2,329	5.5	2.8	0.006
Atmospheric emissions (other than APG flaring)	1,584	4.1	1,843	4.3	1,546	3.6	623	1.5
Water contamination	63	0.2	102	0.2	100	0.2	0.9	0.002
Waste disposal	131	0.3	109	0.3	228	0.5	0.3	0.001

## LOCATION AND SCALE OF PRODUCTION OPERATIONS IN RELATION TO KEY BIODIVERSITY AREAS

304-3

Site	Location	Key biodiversity areas (KBA)	Location in relation to KBA	Contract territory area (sq.km)	Impact mitigation plan
Urikhtau	Mugalzhar District of Aktobe Region	Kokzhide-Kumzhargan State Integrated Nature Reserve of local status	Includes part of the territory	239.9	Hydrogeological monitoring
Alibekmola and Kozhasay	Mugalzhar District of Aktobe Region	Kokzhide Sands Kokzhide underground water	Located nearby	156.5	Hydrogeological monitoring
Zhambyl	KSCS, Atyrau District	Special environmentally sensitive zone of KSCS, Novinsky nature reserve	Located in the nature conservation area and includes part of the territory	1,935.2	Regular environmental monitoring, restrictions during offshore oil operations
Isatay	Central part of KSCS, North Mangystau Region	Special environmentally sensitive zone of KSCS	Located in the nature conservation area	1,060.0	Seasonal baseline environmental studies, regular environmental monitoring
Satpayev	North-western part of KSCS, Atyrau District	Special environmentally sensitive zone of KSCS	Located in the nature conservation area	1,481.0	Procedures to return the territory and surrender the Contract have started

2021

## APPENDIX 3. GRI CONTENT INDEX

102-55

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals	
<b>GRI 101 founded in 2016</b>						
<b>General reporting elements</b>						
<b>GRI 102: General Disclosures 2016</b>	102-1 Name of the organisation	2, 4, 6, 8, 10, 12, 21				
	102-2 Activities, brands, products, and services	2, 4, 6, 8, 10, 12, 21				
	102-3 Location of headquarters	178				
	102-4 Location of operations	21				
	102-5 Ownership and legal form	21				
	102-6 Markets served	21			9	
	102-7 Scale of the organisation	2, 4, 6, 8, 12, 91			9	
	102-8 Information on employees and other workers	2, 4, 6, 8, 12, 91			8	
	102-9 Supply chain	21, 148			12	
	102-10 Significant changes to the organisation and its supply chain	132, 148			9, 12	
	102-11 Precautionary Principle or approach	63		7	14, 15	
	102-12 External initiatives	48			17	
	102-13 Membership in associations	48			17	
	102-14 Statement from senior decision-maker	16, 18				
	102-15 Key impacts, risks, and opportunities	29, 128, 131			9	
	102-16 Values, principles, standards, and norms of behaviour	27, 135			1, 2, 4	5, 10, 16
	102-17 Mechanisms for advice and concerns about ethics	136			2, 6, 10	5, 10, 16
	102-18 Governance structure	119				16
	102-20 Executive-level responsibility for economic, environmental, and social topics	120				
	102-21 Consulting stakeholders on economic, environmental, and social topics	120				
	102-22 Composition of the highest governance body and its committees	121				

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
	102-20 Executive-level responsibility for economic, environmental, and social topics	120			
	102-21 Consulting stakeholders on economic, environmental, and social topics	120			
	102-22 Composition of the highest governance body and its committees	121			
	102-23 Chair of the highest governance body	121			
	102-24 Nominating and selecting the highest governance body	123			
	102-25 Conflicts of interests	124, 138			
	102-26 Role of highest governance body in setting purpose, values, and strategy	124			
	102-27 Collective knowledge of highest governance body	125			
	102-28 Evaluating the highest governance body's performance	125			
	102-29 Identifying and managing economic, environmental, and social impacts	126		7	
	102-30 Effectiveness of risk management processes	128, 131			
	102-31 Review of economic, environmental, and social topics	120			
	102-32 Highest governance body's role in sustainability reporting	14, 120, 129			
	102-33 Communicating critical concerns	120, 130			
	102-34 Nature and total number of critical concerns	120, 130			
	102-35 Remuneration policies	130, 131			
	102-36 Process for determining remuneration	131			
	102-37 Stakeholders' involvement in remuneration	131			
	102-38 Annual total compensation ratio	131			
	102-39 Percentage increase in annual total compensation ratio	131			
	102-40 List of stakeholder groups	47			17
	102-41 Collective bargaining agreements	97			
	102-42 Identifying and selecting stakeholders	47			17

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
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	102-46 Defining report content and topic Boundaries	158			
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	103-3 Evaluation of the management approach	139			
<b>GRI 201: Economic Performance 2016</b>	201-1 Direct economic value generated and distributed	140			8
	201-2 Financial implications and other risks and opportunities due to climate change	41			7, 13
	201-3 Defined benefit plan obligations	140			8
	201-4 Financial assistance received from government	140			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	96			
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GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
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	202-2 Proportion of top management hired from the local community	96			10
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	139			
	103-2 The management approach and its components	139			
	103-3 Evaluation of the management approach	139			
<b>GRI 203: Indirect Economic Impacts 2016</b>	203-1 Infrastructure investments and services supported	116, 144			8
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<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	148			
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<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	138			
	103-2 The management approach and its components	138			
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<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	139			
	103-2 The management approach and its components	139			
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<b>GRI 206: Anti-competitive Behavior 2016</b>	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	153			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	21			
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	103-3 Evaluation of the management approach	21			

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
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	207-2 Tax administration and control, risk management	142			8
	207-3 Stakeholder engagement and tax regulation	144			8
	207-4 Country-by-country reporting	141			8
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	38			
	103-2 The management approach and its components	38			
	103-3 Evaluation of the management approach	38			
<b>GRI 301: MATERIALS 2016</b>	301-1 Materials used by weight or volume	26			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	21			
	103-2 The management approach and its components	21			
	103-3 Evaluation of the management approach	21			
<b>GRI 302: Energy 2016</b>	302-1 Energy consumption within the organisation	38			
	302-2 Energy consumption outside the organisation	39			
	302-3 Energy intensity	39			
	302-4 Reduction of energy consumption	39		8	7
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	72			
	103-2 The management approach and its components	72			
	103-3 Evaluation of the management approach	72			
<b>GRI 303: Water and Effluents 2018</b>	303-1 Interactions with water as a shared resource	74		8	6
	303-2 Management of water discharge-related impacts	74		8	6
	303-3 Water withdrawal	74		8	6
	303-5 Water consumption	74		8	6
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	82			
	103-2 The management approach and its components	82			
	103-3 Evaluation of the management approach	82			

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
<b>GRI 304: Biodiversity 2016</b>	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	82			14, 15
	304-2 Significant impacts of activities, products, and services on biodiversity	85			14, 15
	304-3 Habitats protected or restored	162		8	14, 15
	304-4 Total number of IUCN Red List species and National Conservation List species with habitats in areas affected by operations	82		8	14, 15
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	34			
	103-2 The management approach and its components	34			
	103-3 Evaluation of the management approach	34			
<b>GRI 305: Emissions 2016</b>	305-1 Direct GHG emissions	34, 36			
	305-2 Energy indirect GHG emissions	34			
	305-3 Other indirect GHG emissions	36			
	305-4 GHG emissions intensity	34, 36			
	305-5 Reduction of GHG emissions	34, 70, 71		8	13
	305-6 Emissions of ozone-depleting substances (ODS)	34, 36			
	305-7 NOx, SOx, and other significant emissions	34			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	72			
	103-2 The management approach and its components	72, 76			
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<b>GRI 306: Effluents and Waste 2016</b>	306-1 Water discharge by quality and destination	74, 76			
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	306-4 Transportation of hazardous waste	76			
	306-5 Waste directed to disposal	82			

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	88			
	103-2 The management approach and its components	88			
	103-3 Evaluation of the management approach	88			
<b>GRI 307: Environmental Compliance 2016</b>	307-1 Non-compliance with environmental laws and regulations	88			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	91			
	103-2 The management approach and its components	91			
	103-3 Evaluation of the management approach	91			
<b>GRI 401: Employment 2016</b>	401-1 New employee hires and employee turnover	91			8
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	91			8
	401-3 Parental leave	91			8
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	107			
	103-2 The management approach and its components	107			
	103-3 Evaluation of the management approach	107			
<b>GRI 403: Occupational Health and Safety 2018</b>	403-1 OHS management system	107			3
	403-2 Hazard identification, risk assessment, and incident investigation	107			3
	403-3 Occupational health services	107			3
	403-4 Worker participation, consultation, and communication on OHS	107			3
	403-5 Worker training on OHS	107			3
	403-6 Promotion of worker health	107			3
	403-7 Prevention and mitigation of OHS impacts directly linked by business relationships	107			3
	403-8 Workers covered by an occupational health and safety management system	107			3
	403-9 Work-related injuries	107			3

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
	403-10 Work-related ill health	107			3
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	110			
	103-2 The management approach and its components	110			
	103-3 Evaluation of the management approach	110			
<b>GRI 404: Training and Education 2016</b>	404-1 Average hours of training per year per employee	110			4
	404-2 Programs for upgrading employee skills and transition assistance programmes	110, 115			4
	404-3 Percentage of employees receiving regular performance and career development reviews	91			4
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	96			
	103-2 The management approach and its components	96			
	103-3 Evaluation of the management approach	96			
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	405-1 Diversity of governance bodies and employees	96			10
	405-2 Ratio of basic salary and remuneration of women to men	96			10
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	97			
	103-2 The management approach and its components	97			
	103-3 Evaluation of the management approach	97			
<b>GRI 406: Non-Discrimination 2016</b>	103-1 Explanation of the material topic and its Boundary	97		10	16
<b>GRI 103: Management Approach 2016</b>	103-2 The management approach and its components	97			
	103-3 Evaluation of the management approach	97			
	103-3 Оценка управленческого подхода	97			
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	97		3	16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	97			
	103-2 The management approach and its components	97			
	103-3 Evaluation of the management approach	97			

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
<b>GRI 408: Child Labor 2016</b>	408-1 Operations and suppliers with significant risk of child labour usage	97		5	16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	97			
	103-2 The management approach and its components	97			
	103-3 Evaluation of the management approach	97			
<b>GRI 409: Forced or Compulsory Labor 2016</b>	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labour	97		4	16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	137			
	103-2 The management approach and its components	137			
	103-3 Evaluation of the management approach	137			
<b>GRI 410: Security Practices 2016</b>	410-1 Security personnel trained in human rights policies or procedures	137			16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	137			
	103-2 The management approach and its components	137			
	103-3 Evaluation of the management approach	137			
<b>GRI 412: Human Rights Assessment 2016</b>	412-1 Operations that have been subject to human rights reviews or impact assessments	137			16
	412-2 Employee training on human rights policies or procedures	137			16
	412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	137			16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	116			
	103-2 The management approach and its components	116			
	103-3 Evaluation of the management approach	116			
<b>GRI 413: Local Communities 2016</b>	413-1 Operations with local community engagement, impact assessments, and development programs	116			
	413-2 Operations with significant actual and potential negative impacts on local communities	116			

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	160			
	103-2 The management approach and its components	160			
	103-3 Evaluation of the management approach	160			
<b>GRI 414: Supplier Social Assessment 2016</b>	414-1 New suppliers that were screened using social criteria (partial disclosure)	152			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	145			
	103-2 The management approach and its components	145			
	103-3 Evaluation of the management approach	145			
<b>GRI 415: Public Policy 2016</b>	415-1 Political contributions	140			
<b>GRI 416: Customer Health and Safety 2016</b>	416-1 Assessment of the health and safety impacts of product and service categories		No reported substantiated complaints concerning on privacy and losses of customer data.		
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services		No reported substantiated complaints concerning on privacy and losses of customer data.		
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	21-26			
	103-2 The management approach and its components	21-26			
	103-3 Evaluation of the management approach	21-26			
<b>GRI 417: MARKETING AND LABELING 2016</b>	417-1 Requirements for product and service information and labeling	26			

GRI Standard	Disclosures	Page number	Omission / reason for omission	Relation to UN Global Compact Principles	Relation to 17 global Sustainable Development Goals
<b>GRI 418: Customer Privacy 2016</b>	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data		No reported substantiated complaints concerning on privacy and losses of customer data.		
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	160			
	103-2 The management approach and its components	160			
	103-3 Evaluation of the management approach	160			
<b>GRI 419: Socioeconomic Compliance 2016</b>	419-1 Non-compliance with laws and regulations in the social and economic area	153			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	161			
	103-2 The management approach and its components	161			
	103-3 Evaluation of the management approach	161			
<b>GRI G4 Sector Disclosures: Oil and Gas</b>	OG1 Volume and type of estimated proved reserves and production	2, 4, 6, 8, 10, 12			
	OG3 Total amount of renewable energy generated by source	38, 39		9	7
	OG4 Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored	82, 85		8	14, 15
	OG5 Volume and disposal of formation or produced water	74			
	OG6 Volume of flared and vented hydrocarbons	71			
	OG7 Amount of drilling waste and strategies for treatment and disposal	79			
	OG8 Benzene, lead and sulphur content in fuels	26			
	OG12 Operations where involuntary resettlement took place, the number of households resettled in each and how their livelihoods were affected in the process			No reported substantiated involuntary resettlement took place.	

## APPENDIX 4 ABBREVIATIONS AND ACRONYMS

<b>ADNOC</b>	Abu Dhabi National Oil Company
<b>AG</b>	Amangeldy Gas Limited Liability Partnership
<b>AGIS</b>	Analytical Geographic Information System
<b>AGP</b>	Asia Gas Pipeline Limited Liability Partnership
<b>AGDS</b>	Automated Gas Distribution Station
<b>AMP</b>	Administration & Management Personnel
<b>APG</b>	Associated Petroleum Gas
<b>APCS</b>	Advanced Process Control System
<b>AR</b>	Atyrau Refinery Limited Liability Partnership
<b>AR</b>	Annual Report
<b>BASF</b>	Badische Anilin- & Soda-Fabrik, world-largest chemical holding
<b>BC</b>	Business Center
<b>bln</b>	Billion(s)
<b>BoD</b>	Board of Directors
<b>BP</b>	British Petroleum
<b>BPD</b>	Bird Protection Device
<b>BSGP</b>	Beineu-Shymkent Gas Pipeline Limited Liability Partnership
<b>CAPEX</b>	Capital Expenditure
<b>CAS</b>	Computer-Aided Simulators
<b>CB</b>	CASPI BITUM Joint Venture Limited Liability Partnership
<b>CC</b>	CC Corporate Centre
<b>CDP</b>	Carbon Disclosure Project
<b>CD&amp;E</b>	Civil Defence and Emergencies
<b>CFS</b>	Consolidated Financial Statements
<b>CNG</b>	Compressed Natural Gas
<b>COVID</b>	Coronavirus Infection
<b>CMT</b>	Crisis Management Teams of JSC NC “KazMunayGas”
<b>CPC</b>	Caspian Pipeline Consortium Limited Liability Partnership
<b>CRMS</b>	Corporate Risk Management System
<b>CS</b>	Compressor Station
<b>DCGIP</b>	KMG’s 2019-2020 Detailed Corporate Governance Improvement Plan
<b>DCS</b>	Distributed Control System
<b>DED</b>	Design and Estimate Documentation
<b>EIA</b>	Environmental Impact Assessment
<b>EITI</b>	Extractive Industries Transparency Initiative
<b>EMG</b>	Embamunaygas Joint Stock Company

<b>EOC</b>	Emergency Operations Centre
<b>EOSR</b>	Emergency Oil Spill Response
<b>EP</b>	KazMunayGas Exploration & Production Joint Stock Company
<b>ERP</b>	Enterprise Resource Planning
<b>ES</b>	Emergency Situation
<b>ESG</b>	Environmental, Social, and Governance
<b>E&amp;T</b>	Engineers and Technicians
<b>ETI</b>	Electronic Tax Invoice
<b>FAR</b>	Fatal Accident Rate per 100 million man-hours
<b>FER</b>	Fuel and Energy Resources
<b>FS</b>	Feasibility Study
<b>GMS</b>	Gas Metering Station
<b>GMI</b>	Global Methane Initiative
<b>GRI</b>	Global Reporting Initiative
<b>GWS</b>	Goods, Works and Services
<b>HAZOP</b>	Hazard and Operability Analysis
<b>HCS</b>	Raw Hydrocarbons
<b>HF</b>	Hydraulic Fracturing
<b>HIS</b>	Helpline Information System
<b>HSE</b>	Health, Safety and Environment
<b>HSE</b>	Health, safety, industrial and fire safety, environmental protection, emergency prevention
<b>HSESC</b>	Health, Safety, Environment and Sustainability Committee of KMG's Board of Directors
<b>IAOT</b>	International Association of Oil Transporters
<b>ICA</b>	Intergas Central Asia Joint Stock Company
<b>IFRS</b>	International Financial Reporting Standards
<b>IGCC</b>	Integrated Gas Chemical Complex
<b>IOGP</b>	International Association of Oil & Gas Producers
<b>IPIECA</b>	International Petroleum Industry Environmental Conservation Association
<b>IUCN</b>	International Union for Conservation of Nature
<b>JSC</b>	Joint-Stock Company
<b>KazGPP</b>	Kazakh Gas Processing Plant Limited Liability Partnership
<b>KBM</b>	Karazhanbasmunay Joint Stock Company
<b>KCP</b>	Kazakhstan-China Pipeline Limited Liability Partnership
<b>KDB</b>	Kazakhstan Development Bank Joint-Stock Company
<b>KGM</b>	Kazgermunai Joint Venture Limited Liability Partnership
<b>KMG</b>	Joint-Stock Company National Company "KazMunayGas"
<b>KMGE</b>	KazMunayGas Engineering Limited Liability Partnership
<b>KMTF</b>	National Maritime Shipping Company "Kazmortransflot" LLP
<b>KMGI</b>	KMG International N.V.

<b>KOA</b>	KazakhOil Aktobe Limited Liability Partnership
<b>KPI</b>	Key Performance Indicator
<b>KPI</b>	Kazakhstan Petrochemical Industries Inc.
<b>KSCS</b>	Kazakhstan Sector of the Caspian Sea
<b>KTG</b>	Joint Stock Company "KazTransGas" / Joint Stock Company "National Company "KazTransGas" / Joint Stock Company "National Company "QazaqGaz"
<b>KTGA</b>	KazTransGas Aimak Joint Stock Company
<b>KTGO</b>	KazTransGas Onimderi Limited Liability Partnership
<b>KTM</b>	Kazakhturkmunay Limited Liability Partnership
<b>KTO</b>	Joint Stock Company "KazTransOil"
<b>LDAR</b>	Methane leak detection and repair program
<b>LLP</b>	Limited Liability Partnership
<b>LSS</b>	Lean 6 Sigma
<b>LOTO</b>	Lockout/tagout procedure
<b>LTIR</b>	Lost Time Injury Rate per 1 million man-hours
<b>MBA</b>	Master of Business Administration
<b>MCV</b>	Special Multi-Functional Vessel
<b>MGDS</b>	Main Gas Distribution Station
<b>mIn</b>	Million(s)
<b>MMG</b>	MangistauMunaiGas Joint Stock Company
<b>MS</b>	Management System
<b>MT</b>	MunayTas North-West Pipeline Company Limited Liability Partnership
<b>NC</b>	National Company
<b>NMSC</b>	National Maritime Shipping Company
<b>NPZ</b>	Refinery
<b>N&amp;RC</b>	Nomination and Remuneration Committee of the Board of Directors of JSC NC "KazMunayGas"
<b>OCC</b>	Oil Construction Company Limited Liability Partnership
<b>OCIMF</b>	Oil Companies International Marine Forum
<b>OHP</b>	Overhead Power Lines
<b>OHS</b>	Occupational Health and Safety
<b>OHSE</b>	Occupational Health, Safety and Environment
<b>OMG</b>	Ozenmunaigaz Joint Stock Company
<b>OPEC</b>	Organisation of Petroleum Exporting Countries
<b>OPS</b>	Oil Pumping Station
<b>OSC</b>	Oil Service Company Limited Liability Partnership
<b>OSHA</b>	Occupational Safety and Health Administration
<b>OSRL</b>	Oil Spill Response Limited
<b>OTC</b>	Oil Transport Corporation Limited Liability Partnership

<b>PC</b>	Personal Computer
<b>PCP</b>	Petrochemical Plant
<b>PCS</b>	Procurement Category Strategy
<b>PJSC</b>	Public Joint Stock Company
<b>PKI</b>	PetroKazakhstan Inc.
<b>PKOP</b>	PetroKazakhstan Oil Products Limited Liability Partnership (Shymkent Oil Refinery)
<b>POCR</b>	Pavlodar Oil Chemistry Refinery Limited Liability Partnership
<b>PPE</b>	Personal Protective Equipment
<b>PRC</b>	People’s Republic of China
<b>PTC</b>	Personnel Training Centre
<b>PwC</b>	PricewaterhouseCoopers
<b>RES</b>	Renewable Energy Sources
<b>RoK</b>	Republic of Kazakhstan
<b>RoK MoA</b>	Ministry of Agriculture of the Republic of Kazakhstan
<b>RPM</b>	Reservoir Pressure Maintenance
<b>RTA</b>	Road Traffic Accident
<b>SDE</b>	Subsidiaries and Dependent Entities
<b>SDG</b>	United Nations Sustainable Development Goals
<b>SDM</b>	Sustainable Development Meeting of KMG’s Board of Directors and Management Board
<b>SE</b>	State of Emergency
<b>SIDEC</b>	Specialized Interdistrict Economic Court
<b>SNR</b>	State Nature Reserve
<b>S&amp;P</b>	Standard and Poor’s
<b>SPE</b>	Society of Petroleum Engineers
<b>SPNA</b>	Specially Protected Natural Area
<b>SR</b>	Sustainability Report
<b>SSC</b>	KMG’s Shared Service Centre
<b>SSDR</b>	Semi-Submersible Drilling Rig
<b>TAP</b>	Tax Accounting Policy
<b>TCO FGP</b>	Tengizchevroil Future Growth Project
<b>TR CU</b>	Technical Regulations of the Customs Union
<b>UDTV</b>	Water Production and Transportation Department Limited Liability Partnership
<b>UN</b>	United Nations
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organisation
<b>UNGC</b>	United Nations Global Compact
<b>UTTIOS</b>	Process Transport and Well Servicing Department Limited Liability Partnership
<b>WDP</b>	Water Disclosure Project
<b>WO</b>	Well Workover
<b>WWF</b>	World Wildlife Fund

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Employees of KMG's SDEs



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NATIONAL COMPANY УЛТТЫҚ КОМПАНИЯСЫ