

Welcome to your CDP Climate Change Questionnaire 2023

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

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

Outside of Kazakhstan, KMG has more than thousand fuel sales points in Romania and Georgia. KMG International N.V. is a strategic enterprise for oil refining and marketing in Romania and the countries of the Black Sea and Mediterranean basins with the access to the end-user market with a population of more than 300 million people.

As a member of the UN Global Compact, KMG recognizes the importance of climate change mitigation actions and intends to contribute to the achievement of SDG 13 "Climate Action". Climate change response and adaptation measures are incorporated in our strategic documents and corporate policies.

In 2021, the KMG Development Strategy for a ten-year period was approved. Four strategic goals are built through the prism of sustainable development priorities. One of KMG's strategic goals "Sustainable development and gradual reduction of carbon intensity of production" provides for the improvement of the sustainable development system, which will ensure the integration of ESG principles into the Company's key business processes.

In 2021, the Low-Carbon Development Program of JSC NC "KazMunayGas" for the period 2022-2031 (hereinafter - the Program) was developed and approved by the Board of Directors. The Program was developed in accordance with the legislation of the Republic of Kazakhstan, the KMG Charter, the Development Strategy of JSC NC "KazMunayGas" for the period 2022-2031, the Emissions Management Policy in the group of companies of JSC NC "KazMunayGas", as well as other internal documents of KMG. This Program defines a unified low-carbon development framework as an integrated component of corporate governance and systematizes the Company's activities in the field of carbon footprint reduction.

The integration of the low-carbon agenda into the company's development strategy will not only contribute to the reduction of greenhouse gas emissions, but will also increase the investment attractiveness and competitiveness of the company in the context of the energy transition.

The main objective of developing the Program is to identify KMG's climate ambitions, systematize main approaches and measures to reduce its carbon footprint, including, in particular:

- (i) Analysis of the available capacity and definition of KMG's climate goals.
- (ii) Identification of key areas of the company's development in the field of decarbonization and measures to achieve the established goals.
- (iii) Improving the company's capacity and awareness.

Since 2020, the Company has been evaluated ESG-rating by the international rating agency "Sustainalytics" (Amsterdam, Netherlands). The key ESG-issues for KMG are carbon emissions from operations and emissions from the use of the Company's products, as well as the relationship with the communities in the regions of operation. KMG intends to continue systematic work to improve the level of ESG-rating and meet the objectives of managing and reducing ESG-risk ratings.

Since 2012, the Company has been preparing a Sustainability Report in accordance with international non-financial reporting standards developed by the Global Reporting Initiative (GRI).

The Company annually participates in the " Ranking of transparency of environmental information of oil and gas companies" from the World Wildlife Fund of Russia (WWF), Creon Group and the rating agency ACRA and for the fifth year in a row has taken first place among Kazakhstan's companies.

KMG takes part in the Global Methane Initiative. Reduction of methane emissions is one of the strategic objectives of the Company.

JSC NC "KazMunayGas" in 2020 signed a Memorandum on the creation of a joint research platform Caspian Environmental Protection Initiative (CEPI) for international oil companies operating in the Caspian region, in order to protect the environment and combine efforts to prevent emissions of pollutants into environment by developing and implementing joint preventive measures to combat climate change, which threatens the environmental stability factors of the Caspian region. Several global oil and gas companies have joined the initiative, including BP Azerbaijan, Equinor Absheron and Total Absheron.

Taking into account the long-term trends in the energy transition, KMG is working towards creating its portfolio of low-carbon projects in order to maintain financial success in a zero-emission world in the future.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date

January 1, 2022

End date

December 31, 2022

Indicate if you are providing emissions data for past reporting years

Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for

3 years

Select the number of past reporting years you will be providing Scope 2 emissions data for

3 years

Select the number of past reporting years you will be providing Scope 3 emissions data for

3 years

C0.3

(C0.3) Select the countries/areas in which you operate.

Georgia

Kazakhstan

Romania

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-OG0.7

(C-OG0.7) Which part of the oil and gas value chain and other areas does your organization operate in?

Row 1

Oil and gas value chain

- Upstream
- Midstream
- Downstream
- Chemicals

Other divisions

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	KZ1C00001122
Yes, an ISIN code	ISIN XS1595713782 (RegS), US48667QAN51 (144A)
Yes, an ISIN code	ISIN XS1595714087 (RegS), US48667QAP00 (144A)
Yes, an ISIN code	ISIN XS1807299174 (RegS), US48667QAR65 (144A)
Yes, an ISIN code	ISIN XS1807300105 (RegS), US48667QAQ82 (144A)
Yes, an ISIN code	ISIN XS1807299331 (RegS), US48667QAS49 (144A)
Yes, an ISIN code	ISIN XS2242422397 (RegS), US48126PAA03 (144A)

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
<p>Other, please specify</p> <p>Boards of Directors</p>	<p>In accordance with the Corporate Governance Code (approved by Government Decree of the Republic of Kazakhstan dated November 5, 2012 No. 1403) The Board of Directors ,within their competence, ensures the formation of an appropriate system in the field of sustainable development and its implementation, and officials and all employees at all levels contribute to low-carbon development. The Board of Directors approves the climate change policy and strategy, energy and climate change goals.</p> <p>In 2022, the annual meeting of the Board of Directors on Sustainable Development issues was held, where KMG's Low-Carbon Development Program implementation status as well as the report on labour and environmental protection was considered.</p> <p>In order to ensure the implementation of strategic objectives for sustainable development at the executive level for 2022, the motivational KPIs of the Chairman of the Management Board (corporate KPIs of the Company), Deputy Chairmen of the Management Board, executive management and all subsidiaries and affiliates related to the implementation of a sustainable development system, including carbon footprint reduction, were approved:</p> <ol style="list-style-type: none"> 1) Implementation of investment projects, including a number of sustainable development projects. 2) Execution of the Action Plan for the implementation of the KMG Low-Carbon Development Program for the period 2022-2031 in the supervised areas. <p>In 2022, the efficiency of Departments directors included indicators related to the approval of the action plan and targets until 2030 to reduce emissions of pollutants, greenhouse gases, water conservation and energy conservation for the KMG Group of Companies.</p> <p>On September 7, 2022, the annual meeting of the Board of Directors on Sustainable Development issues was held (Minutes of the Board of Directors No. 16/2022 dated 07.09.2022). It discussed priority issues in the field of sustainable development: plans and objectives of the Low-carbon Development Program of JSC NC "KazMunayGas", the status of implementation of priority sustainable development Goals in JSC NC "KazMunayGas".</p> <p>The Board of Directors adopted a report on the activities of the Committee on Safety, Labor Protection, Environment and Sustainable Development for 2022 (procedure of the Board of Directors No. 5/2023 of 03/14/2023, question 8).</p>
<p>Chief Executive Officer (CEO)</p>	<p>The Chairman of the Management Board is the highest executive level of the company for making strategic decisions and determining areas of activity in relation to climate change. In particular, his responsibilities in this regard are as follows:</p> <ul style="list-style-type: none"> - proposes a Low-Carbon Development Program and climate change goals and

	<p>monitor their implementation.</p> <p>- supervises the implementation of the Low-Carbon Development Program and regularly analyzes the dynamics of GHG emissions and compliance with climate change mitigation goals. In order to systematize the main approaches and measures in the field of carbon footprint reduction, the Company has developed a Low-carbon Development Program for the period 2022-2031 (hereinafter - Program). The company aims to reduce direct and indirect CO2 emissions by 15% from the level of 2019 by 2031.</p> <p>In 2022 the Action Plan of the implementation of the Program (hereinafter - the Plan) for 2022 - 2031 was approved. The plan includes a number of measures aimed at reducing greenhouse gas emissions in four areas: energy efficiency, renewable energy, methane monitoring, organizational measures.</p> <p>In 2022 as part of the implementation of the Plan's measures a corporate Methodology for monitoring and reporting on greenhouse gas emissions (KMG-F-4488/1-11/KMG-MD-4457/1-11) (hereinafter-the Methodology) and the Program of Internal Carbon pricing (hereinafter- the ICP Program) were developed and approved.</p> <p>The methodology defines the main approaches to the inventory and monitoring of greenhouse gas emissions of KMG subsidiaries and dependent organizations and provides a unified methodological basis for calculating greenhouse gas emissions of KMG subsidiaries.</p> <p>The main purpose of the development of the ICP Program is to assess and minimize the financial risks of the Company from the tightening of carbon regulation, as well as the redistribution of part of the investments from carbon—intensive projects to low-carbon ones. The introduction of internal carbon pricing is considered as a strategic risk management tool for the impact of climate regulation on the Company's activities, and also contributes to the creation of additional opportunities for modernization production and achievement of KMG's stated goals to reduce greenhouse gas emissions. The detailed development of the mechanisms and their implementation in the internal regulatory documents of KMG is expected to be carried out in 2023.</p>
<p>Board-level committee</p>	<p>In accordance with the Regulations on the Committee on Safety, Labor Protection, Environment and Sustainable Development of the Board of Directors of JSC NC "KazMunayGas" (hereafter -the Committee) (approved by the decision of the Board of Directors dated 12.12.2018, procedure 19/2018), the Committee reviews and organizes issues of sustainable development, prepares recommendations for the approval of the policy in the field of sustainable development, the annual Report on the sustainable development of KMG, action plans and other internal documents in the field of sustainable development, the approval of which falls within the competence of the Board of Directors, the introduction of social, economic and environmental components of sustainable development, formation of a management system in the field of sustainable development, definition of goals and efficiency in the field of sustainable development, control over the implementation of sustainable development in KMG, integration of sustainable development into key processes of KMG.</p>

	<p>The Committee is responsible for initiating, in-depth analysis and decision-making on the economic, environmental and social consequences of the organization's activities.</p> <p>The implementation of the sustainable development system is reviewed on a regular basis by the Committee.</p> <p>In 2022 the Committee held 5 meetings , where 40 issues were considered (procedures No. 1/2022 of 01.02.2022; No. 2/2022 of 1.04.2022; No. 3/2022 of 13.06.2022; No. 4/2022 of 05.09.2022; No. 5/2022 of 31.10.2022). Based on the results of the Committee meetings, 40 decisions and 26 instructions were formed. In 2022, a number of measures were carried out aimed at increasing attention to environmental protection, reducing environmental impact, as well as taking measures to meet new environmental requirements and global trends. A methodology for evaluating ESG and carbon footprint reduction projects is being developed.</p> <p>The Committee considered next direction: the ESG rating of KMG; the implementation of the sustainable development system in KMG and its subsidiaries, the approval of the Report on the Sustainable Development of JSC NC "KazMunayGas" for 2021, the approval of the Policy in the field of Sustainable Development; KMG's contribution to achieving the Sustainable Development Goals, the implementation of the Low-carbon Development Program for the period 2022-2031 and etc.</p>
Other C-Suite Officer	<p>Deputy Chairman of the Management Board of KMG, responsible for sustainable development issues, including low-carbon development issues. Deputy Chairman coordinates approaches to achieving goals and KPIs for initiatives in the field of sustainable development, low carbon development and controls the implementation of corporate standards in the field of sustainable development, controls the preparation of a report on sustainable development and the achievement of the SDGs.</p>

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing innovation/R&D priorities Reviewing and guiding strategy Overseeing and guiding the development of a	Weekly staff meetings are held on Mondays with the Chairman of KMG's Management Board, at which the Deputy Chairman of the Management Board for Strategy, Investment and Business Development reports on low-carbon development related activities. These issues are often reviewed and monitored at many levels of the company, in addition to the meetings of the Health, Safety, Environment and Sustainable

	<p>transition plan</p> <p>Monitoring the implementation of a transition plan</p> <p>Overseeing the setting of corporate targets</p> <p>Monitoring progress towards corporate targets</p> <p>Reviewing and guiding the risk management process</p>	<p>Development Committee of the BoD.</p> <ol style="list-style-type: none"> 1. The Board of Directors has approved KMG's Low Carbon Development Program. 2. The Deputy Chairman of the Management Board for Economics and Finance is responsible for resolving a set of issues related to the economic component of KMG's sustainable development and implementation of the KMG Low-Carbon Development Program. 3. Deputy Chairman of the Management Board for Strategy, Investment and Business Development is responsible for the development of the Climate Change Strategy and Targets, as well as monitoring the implementation of the strategy and periodic review of GHG emissions, and the implementation of climate change mitigation goals (reduction of GHG emissions and carbon intensity indicator). He oversees the following divisions: <ul style="list-style-type: none"> - The Low Carbon Development Department (according to regulations KMG-PD-216.9-18) coordinates climate change issues, monitors and systematically monitors the implementation of low-carbon development plans and goals, as well as emerging risks associated with the energy transition and climate change. - The Risk Management and Internal Control Service (according to regulations KMG-MD-986.3-37) oversees the effectiveness of the company's risk management and internal control system, generally and on a quarterly basis oversees emerging risks and climate change as part of the review of KMG's risk map. - Department of Business Development and Divestments (according to regulations KMG-PD-216.9-18) is responsible for acquisition of new assets under the approved Low-Carbon Development Program, as well as ensuring reliable technical and economic evaluation of new investment projects. - The Department of Strategy and Portfolio Management (according to regulations KMG-PD-263/11-9) develops and implements the Company's development Strategy, ESG ranking and sustainability reporting. 4. The Labour Protection and Environment Department (according to regulations KMG-PD-2748.2-13) reports
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		directly to the Chairman of the Management Board. It monitors changes in the environmental legislation of the Republic of Kazakhstan, as well as the development of proposals for its further improvement.
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C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	<p>Scientific works and research on environmental safety in the oil and gas sector.</p> <p>One of the members of the Board of Directors has a degree of Doctor of Engineering. Thesis research topic: "Theoretical bases of drilling works safety improvement and development of environmental protection technologies of offshore oil-and-gas fields exploration" (2010). Author of more than 40 publications, articles, books and 5 inventions.</p> <p>In addition, in 2022, the former Minister of Ecology of the Republic of Kazakhstan was appointed as Chairman of the Management Board of the company (2019-2021), under his guidance a new Environmental Code was developed, in which one of the main novelties is the introduction of the process of adaptation to climate change.</p> <p>In addition, the Chairman of the Management Board participated in the development of the Carbon Neutrality Strategy of the Republic of Kazakhstan until 2060, which was adopted by the Decree of the President of the Republic dated February 2, 2023 No. 121</p> <p>Also, in 2022, the Chairman of the Management Board participated in the CERAWEEK - 2022 international conference, where the issues of energy transfer, as well as decarbonization issues were discussed.</p>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Position or committee

Chief Executive Officer (CEO)

Climate-related responsibilities of this position

Managing annual budgets for climate mitigation activities
Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
Managing climate-related acquisitions, mergers, and divestitures
Providing climate-related employee incentives
Developing a climate transition plan
Implementing a climate transition plan
Integrating climate-related issues into the strategy
Conducting climate-related scenario analysis
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing public policy engagement that may impact the climate
Managing value chain engagement on climate-related issues
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line

Quarterly

Please explain

The Chairman of the Management Board is the highest executive level of the company for making strategic decisions and determining areas of activity in relation to climate change. In particular, its responsibilities in this regard are as follows:

- propose a low-carbon Development Program and climate change goals and monitor their implementation.
- supervises the implementation of the Low-Carbon Development Program and periodically analyzes the dynamics of GHG emissions and compliance with climate change mitigation goals (GHG emissions reduction and carbon intensity index).

Position or committee

Chief Financial Officer (CFO)

Climate-related responsibilities of this position

Managing annual budgets for climate mitigation activities

Coverage of responsibilities

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line

Annually

Please explain

Chief Financial Officer is responsible for solving a complex of issues of the economic component of sustainable development, including issues of low carbon development

Position or committee

Other committee, please specify

Health, Safety, Environment and Sustainable Development Committee

Climate-related responsibilities of this position

Developing a climate transition plan

Integrating climate-related issues into the strategy

Setting climate-related corporate targets

Monitoring progress against climate-related corporate targets

Managing public policy engagement that may impact the climate

Managing value chain engagement on climate-related issues

Assessing climate-related risks and opportunities

Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line

Annually

Please explain

In accordance with the Regulations on the Committee on Safety, Labor Protection, Environment and Sustainable Development of the Board of Directors of JSC NC "KazMunayGas" (approved by the decision of the Board of Directors dated 12.12.2018, Procedure No. 19/2018,), the Committee reviews and organizes issues of sustainable development, prepares recommendations for the approval of the policy in the field of sustainable development, the annual Report on the sustainable development of KMG, action plans and other internal documents in the field of sustainable development, the approval of which falls within the competence of the Board of Directors, the introduction of social, economic and environmental components of sustainable development, formation of a management system in the field of sustainable development, definition of goals and efficiency in the field of sustainable development, control over the implementation of sustainable development in KMG, integration of sustainable development into key processes of KMG.

The Committee is responsible for initiating, in-depth analysis and decision-making on the economic, environmental and social consequences of the organization's activities. The implementation of the sustainable development system is reviewed on a regular basis by the Committee on Safety, Labor Protection, Environment and Sustainable Development of the Board of Directors.

Position or committee

Risk committee

Climate-related responsibilities of this position

Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

Other, please specify
reports to the Board Management

Frequency of reporting to the board on climate-related issues via this reporting line

Quarterly

Please explain

According to the Regulations on the Risk Committee of JSC NC "KazMunayGas" (KMG—PL- 989.6-37), the Committee carries out:

- development of processes designed to identify, assess, monitor and control the risks of the KMG Group of Companies;
- coordination of the risk management process for the KMG Group of companies;
- preparation of recommendations and proposals for the organization and maintenance of an effective Corporate risk management system and Internal Control Service.

Position or committee

Other C-Suite Officer, please specify
Deputy Chairman of the Management Board for Strategy, Investment and Business Development

Climate-related responsibilities of this position

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
Managing climate-related acquisitions, mergers, and divestitures
Developing a climate transition plan
Implementing a climate transition plan
Integrating climate-related issues into the strategy

Conducting climate-related scenario analysis
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing public policy engagement that may impact the climate
Managing value chain engagement on climate-related issues
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

Other, please specify
Reports directly to the Chairman of the Management Board

Frequency of reporting to the board on climate-related issues via this reporting line

More frequently than quarterly

Please explain

Deputy Chairman of the Management Board for Strategy, Investment and Business Development coordinates the development, implementation and monitoring of the implementation of the Low-carbon Development Program, energy efficiency and resource conservation in the KMG Group,
In addition, the PP Deputy for Strategy, Investment and Business Development coordinates the issues of reducing the Company's carbon footprint and implementing low-carbon projects and initiatives.

Position or committee

Other C-Suite Officer, please specify
Deputy Chairman of the Management Board for Upstream Sector

Climate-related responsibilities of this position

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
Managing climate-related acquisitions, mergers, and divestitures
Developing a climate transition plan
Implementing a climate transition plan
Conducting climate-related scenario analysis
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing public policy engagement that may impact the climate
Managing value chain engagement on climate-related issues
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

Other, please specify

Reports directly to the Chairman of the Management Board

Frequency of reporting to the board on climate-related issues via this reporting line

More frequently than quarterly

Please explain

The Deputy Chairman of the Management Board for Upstream sector coordinates the implementation of the Low-carbon Development Program, energy efficiency and resource conservation in the KMG Group within the framework of supervised business processes.

Position or committee

Other C-Suite Officer, please specify

Deputy Chairman of the Management Board for Midstream Sector

Climate-related responsibilities of this position

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)

Managing climate-related acquisitions, mergers, and divestitures

Developing a climate transition plan

Implementing a climate transition plan

Conducting climate-related scenario analysis

Setting climate-related corporate targets

Monitoring progress against climate-related corporate targets

Managing public policy engagement that may impact the climate

Managing value chain engagement on climate-related issues

Assessing climate-related risks and opportunities

Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

Other, please specify

Reports directly to the Chairman of the Management Board

Frequency of reporting to the board on climate-related issues via this reporting line

More frequently than quarterly

Please explain

The Deputy Chairman of the Management Board for Midstream sector coordinates the implementation of the Low-carbon Development Program, energy efficiency and resource conservation in the KMG Group within the framework of supervised business processes.

Position or committee

Other C-Suite Officer, please specify
Deputy Chairman of the Management Board for Downstream Sector

Climate-related responsibilities of this position

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
Managing climate-related acquisitions, mergers, and divestitures
Developing a climate transition plan
Implementing a climate transition plan
Conducting climate-related scenario analysis
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing public policy engagement that may impact the climate
Managing value chain engagement on climate-related issues
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

Other, please specify
Reports directly to the Chairman of the Management Board

Frequency of reporting to the board on climate-related issues via this reporting line

More frequently than quarterly

Please explain

The Deputy Chairman of the Management Board for Downstream sector coordinates the implementation of the Low-carbon Development Program, energy efficiency and resource conservation in the KMG Group within the framework of supervised business processes.

Position or committee

Other C-Suite Officer, please specify
Deputy Chairman of the Management Board for the Gas Projects and low-carbon development area

Climate-related responsibilities of this position

- Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
- Managing climate-related acquisitions, mergers, and divestitures
- Developing a climate transition plan
- Implementing a climate transition plan
- Integrating climate-related issues into the strategy
- Conducting climate-related scenario analysis
- Setting climate-related corporate targets
- Monitoring progress against climate-related corporate targets
- Managing public policy engagement that may impact the climate
- Managing value chain engagement on climate-related issues
- Assessing climate-related risks and opportunities
- Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

- Other, please specify
 Reports directly to the Chairman of the Management Board

Frequency of reporting to the board on climate-related issues via this reporting line

- More frequently than quarterly

Please explain

Deputy Chairman of the Management Board for the Gas Projects and low-carbon development area coordinates the development, implementation and monitoring of the implementation of the Low-carbon Development Program, energy efficiency and resource conservation in the KMG Group,
 In addition, the PP Deputy for the Gas Projects and low-carbon development area coordinates the issues of reducing the Company's carbon footprint and implementing low-carbon projects and initiatives.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Corporate key performance indicators are formed on the basis of strategic indicators. In 2022, specific targets for reducing greenhouse gas emissions are included in KPI on the basis of the approved action

		<p>plan for the implementation of the Low-carbon Development Program. In accordance with the Rules of Remuneration of Managerial and Administrative Employees (KMG-PR-865.13-06), one of the conditions for remuneration payment is the degree of performance of corporate KPIs and the degree of performance by managers structural divisions of functional efficiency according to the results of the reporting year. Also, the Company annually holds a competition "The best innovative ideas and practices in the field of health, labor and environment of the KMG". The competition holds in order to identify the best innovative ideas and practices in the field of labor and environmental protection, including reducing the carbon footprint. The winners are rewarded with monetary rewards.</p>
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C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive

Board Chair

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary

Performance indicator(s)

Achievement of climate transition plan KPI
 Progress towards a climate-related target
 Achievement of a climate-related target
 Implementation of an emissions reduction initiative
 Reduction in absolute emissions
 Reduction in emissions intensity
 Energy efficiency improvement
 Increased share of low-carbon energy in total energy consumption
 Increased share of renewable energy in total energy consumption
 Reduction in total energy consumption
 Increased investment in low-carbon R&D
 Increased share of revenue from low-carbon products or services in product or service portfolio
 Implementation of employee awareness campaign or training program on climate-related issues

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

In order to increase motivation in the implementation of corporate and functional efficiency of KMG, the heads of structural divisions may be paid a bonus based on the results of work for the reporting year.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

The efficiency of the heads of structural divisions includes efficiency in terms of sustainable development, namely, reducing the carbon footprint.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	Short-term time horizons are determined based on the information in the Cash Budget Form, which includes income and expenses of the company, affecting the possibility of occurrence and prevention of risk. Short-term horizons are determined on the basis of annual and current plans of production activities and development of the company, which determine the position of the Company, promptly responding to global challenges and meeting the requirements of sustainable development.
Medium-term	1	5	Medium-term planning corresponds to the KMG Group Development Plan and business plans of subsidiaries and affiliates, which are adopted for a 5-year period. In addition, the Nationally Determined Contribution to the global response to climate change (or NDCs) is one of the main documents that is used to build medium term strategic vision.
Long-term	5	10	The long-term horizons are determined on the basis of KMG's development strategy for 2022-2031, which defines the Company's target state, promptly responding to global challenges and meeting the requirements of sustainable development. With long-term energy transition trends in mind, KMG is building its portfolio of low-carbon

		<p>projects in order to maintain future financial success in a zero-emissions world. As part of long-term planning, KMG's Low-Carbon Development Program for the period 2022-2031 has been developed and approved.</p> <p>Also, long-term horizons are determined in accordance with the goals and principles outlined in the Strategy of the Republic of Kazakhstan to achieve carbon neutrality until 2060.</p>
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C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Risk management in the Company allows to prevent the occurrence of risk events that affect the achievement of strategic and operational goals, and limit their impact when they occur. Risk management is an integral part of the Company's strategic planning and corporate governance process and maintaining financial stability.

KMG has integrated the Corporate Risk Management System (CSMS) into the Company's key business and management processes. CSMS is a key component of the corporate governance system aimed at timely identification, assessment and monitoring of all significant risks, as well as taking timely and adequate measures to reduce the level of risks.

According to the Risk Identification and Assessment Methodology (KMG-MD-986.3-37), the risk propensity is calculated in quantitative and qualitative terms. When calculating the propensity to risk, a reduction in the total amount of cash flows and an increase in the total amount of cash outflow provided for in the cash budget for the forecast period are taken into account.

Quantitative risk assessment is carried out on the basis of a database of realized risk events, accumulated internal and external statistics. The main methods of risk assessment within the framework of this approach:

- cost at risk (Value-at risk - VaR) - the maximum reduction in the cost of a financial investment on a certain planning horizon (for example, a month), which will not be exceeded with a high (predetermined) probability (usually 95% - VaR95% or 99% - VaR99%). The value of VaR has a monetary expression;

- cash flows at risk (Cash-flowatrisk - CFaR) - the maximum decrease in the amount of cash receipts (or the maximum increase in expenses) caused by the impact of one or more risk factors, which will not be exceeded with a high (predetermined) probability (usually 95% or 99%) on a certain planning horizon.

A major (significant) risk of the company is considered to be a risk that scores above the value of 50-75% of the quantitative risk appetite

The company analyzes the external environment, global key trends that have a significant impact on the business and on determining the strategic priorities of the company. As part of the analysis of global trends, five key aspects were considered: the global oil and gas market, ecology, the world economy, technology and digitalization, and the geopolitical situation.

KMG has an internal audit service (IAS), which evaluates the effectiveness of the risk management process, notifies the Board of Directors of KMG of significant impacts in the KMG CSMS, and also develops recommendations for improving the risk management process; evaluates the effectiveness of preventive measures on the risk/risk factor (control procedures) and prepares recommendations for elimination identified deficiencies (if necessary); notifies the

Responsible Department of KMG about new risk factors identified during the audit. KMG conducts a strategic risk assessment in which it determines a significant financial or strategic impact on our business.

Energy Transition and Tougher Carbon Regulation

Kazakhstan is an active participant in international climate policy to mitigate greenhouse gas emissions. By ratifying the Paris Agreement in 2016, Kazakhstan made voluntary unconditional commitments to reduce greenhouse gas emissions by 15% by 2030, compared to the 1990 level. The President of Kazakhstan has declared the achievement of carbon neutrality of Kazakhstan by 2060. In February 2023, the Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan until 2060 was approved by a Presidential decree.

In 2021, the Financial Strategy of KMG until 2028 was approved by the Samruk-Kazyna Fund and approved by the KMG Board of Directors. It defines the basic principles of rational management of own and borrowed funds to ensure the balance of interests of KMG's main stakeholders: creditors, the shareholder represented by the Fund "Samruk-Kazyna", the state, as well as the interests of the Company itself.

KMG's investment policy is focused on improving the Company's efficiency in all areas of its core activities by investing in efficient, profitable and competitive strategic projects with a significant potential of free cash flow generation, with due regard to the Company's strategic objectives.

Within the framework of KMG's Low-Carbon Development Programme, the assessment of investment projects is carried out with consideration of their impact on the reduction of the carbon footprint and carbon intensity of products.

One of the strategic goals of KMG - Sustainable development and progressive reduction of the carbon intensity of production, which includes initiative named "Energy transition and carbon footprint reduction".

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term

Medium-term

Long-term

Description of process

Climate risk management is an integrated, interdisciplinary, company-wide risk management process. The purpose of this procedure is to identify and control risks to ensure the positive development of the organization's business and effective risk reporting in compliance with laws and regulations.

The process used to determine which climate-related risks and opportunities may have a significant financial or strategic impact applies to all stages of the value chain and consists of the 4 following parts:

Part 1 IDENTIFICATION:

Identification of inherent risks/risk factors is the determination of the exposure of all KMG Group activities and business processes to risks, the occurrence of which could adversely affect the ability to achieve planned goals and objectives.

Identification of risks and the corresponding risk factors is carried out by Risk Owners and Risk Factor Owners at all levels of management. The mechanism of identification and appointment of Risk Owners, Risk Factor Owners for all KMG business processes is described in the internal documents in the field of risk management.

To identify risks and corresponding risk factors, a combination of various techniques and tools is used. The procedure for identification, as well as methods and tools to identify risks and related risk factors are described in internal risk management documents.

Part 2 ASSESSMENT AND ANALYSIS:

The assessment of the identified risk factors and the subsequent assessment of the production/non-production risk to which the identified risk factors are relevant is performed to determine the extent of its impact on the achievement of the Company's production/non-production KPIs.

Production/non-production risks and corresponding risk-factors are analyzed according to probability of their occurrence (probability of realization) and degree of influence (potential damage).

The assessment of parameters of risk can have quantitative or qualitative character.

The company will aspire to develop and apply mainly quantitative methods of an assessment of risks/risk-factors, constantly to improve modern methods of a quantitative assessment of risks.

The horizon for assessing risk parameters corresponds to the horizon for achieving the relevant goal (objective) of KMG and its subsidiaries and affiliates. Methods and tools for quantitative and qualitative assessment of risk/risk parameters, risk/risk factor analysis are disclosed in internal risk management documents.

Climate risk management is an integrated, interdisciplinary, company-wide risk management process. The purpose of this procedure is to identify and control risks to ensure the positive development of the organization's business and effective risk reporting in compliance with laws and regulations.

The process used to determine which climate-related risks and opportunities may have a significant financial or strategic impact applies to all stages of the value chain and

consists of the following parts:

Part 3 RISK MANAGEMENT:

Risk management includes the development of controls by the Risk Owner/Risk Factor Holder, including a description of mechanisms to ensure implementation of standard risk management practices and timelines for control procedures in practice.

Policies and procedures connected with implementation of control procedures on management of separate kinds of risks, are defined in internal documents on management of separate kinds of risks by Owners of risks and Owners of risk - factors. Selection of methods of response to production/non-production risks, development of the Plan of measures on management of production/non-production risks in order to provide an acceptable level of residual risk includes the standard methods described in the internal documents on risk management. Through the development of regulatory documents by the Owner of the risk/risk-factor, the KMG group of companies achieves the application of uniform controls to reduce the level for the same risks/risk-factors. For the risks/risk factors, the implementation of which may suspend the activities and operations of the Company, Business Continuity Plans which provide for consistent actions of employees to restore the operating activities of the Company being developed and approved. Factors that may affect the continuity of the Company's operations include: natural disasters, potential damage from industrial accidents, customer expectations, shareholder decision-making, international standard requirements, litigation, information system security, "fragile" supply chain, regulatory authorities and legislation, etc.

Production/non-production risk must be viewed from the perspective of the entire Company. Risks of individual divisions/subsidiaries may exceed the risk tolerance level, but are naturally balanced out throughout the Company (correlation of risks within the group). Measures on risk management should be applied so that the cumulative level of risk on all Company did not exceed an admissible level. The portfolio of risks of the Company is formed by consolidation of industrial/non-productive risks at KMG level. Proposals for standard methods and measures for risk management shall be submitted by Risk Owners/Risk Factor Owners and shall be entered into the Plan of measures for production/non-production risk management. The Risk Management Plan and Business Continuity Plans shall be approved by the Company's management bodies within the period corresponding to the time of approval of KMG's Consolidated Development Plan. Monitoring of the Action Plan by the Company's management bodies is carried out as part of the quarterly risk reporting.

Part 4. MONITORING AND REPORTING:

Monitoring of risk management is the control of the dynamics of changes in risk parameters and effectiveness of the implementation of measures and control procedures for risk management. Monitoring is carried out by the responsible division of KMG through the quarterly collection of information on the dynamics of risks and the implementation of action plans and control procedures for their management, coming from the Risk Owners, Risk Factor Owners of KMG / subsidiaries in accordance with the internal documents on risk management.

in 2023, KMG, with the support of the EBRD, began work on technical analysis to identify the main risk factors in various climatic scenarios and prepare a disclosure report in accordance with the TCFD recommendations. This will help the Company identify, assess and manage the risks and opportunities associated with climate change, as well as identify and establish measurable climate-related indicators and targets for inclusion in a climate strategy that ensures effective actions in the field of climate change, and to justify its investment planning.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>14 KMG subsidiary entities are covered by Kazakhstan Emissions Trading System and 2 subsidiary entities are covered by European Emissions Trading System, therefore the risks of current regulation are included in the KMG Key Risk Map, assessed and identified as political and regulatory factors.</p> <p>As an oil and gas company, the Company is a subject to the regulatory requirements of the Environmental Code of the Republic of Kazakhstan (RoK) related to climate change, including the Kazakhstan Emissions Trading System, the requirements of the RoK Law "On Energy Efficiency and Energy Conservation Improvement", the RoK Law "On Support for Renewable Energy Development".</p> <p>The Company complies with legislative requirements closely monitors and assesses risks associated with any changes by incorporating them into our enterprise risk management process.</p> <p>Also, we take into account the risks associated with the transition of the global economy to a low-carbon development path and with the measures taken in the countries where the Group operates to tighten regulation of greenhouse gas emissions and assess the necessary financial costs.</p>
Emerging regulation	Relevant, always included	<p>KMG constantly monitors changes in climate legislation and participates in discussions of draft regulations affecting the climate agenda to provide a detailed explanation of the Company's position on these issues and the risks and uncertainties that new legislative initiatives entail.</p> <p>The risk of change in greenhouse gas credits allocation is also taken into account. If a State adopts the quota allocation method based on the use of intensity emission factors, some of our subsidiary entities may have a quota deficit, which would entail financial costs. This risk is</p>

		identified and assessed on a quarterly basis.
Technology	Relevant, always included	<p>KMG constantly monitors and develops its own solutions to improve energy efficiency. Improvement of energy efficiency of production through energy saving, energy management, optimization of industrial processes is a key tool of the Company's carbon management. The Company is developing and using new technologies, such as construction of RES, introduction of energy efficient technologies, BAT - the best available technologies, carbon capture and storage technologies and others.</p> <p>There are the following risks associated with the use of alternative energy sources: Monopolization in energy storage systems, leads to higher prices, costs, respectively, technically (short life, rapid degradation, losses) and is economically inefficient solution for the RES market. It is necessary to create a market in the system of accumulation and distribution of energy.</p>
Legal	Relevant, always included	<p>14 subsidiaries of KMG fall under the Kazakhstan Emissions Trading Scheme and 2 subsidiaries are covered under the European Emissions Trading Scheme, so the risks of current regulation are included in the Map of key risks of KMG, assessed and identified as political and regulatory factors:</p> <ul style="list-style-type: none"> - volumes of issued quotas; - withdrawal of issued quotas due to reduction of production capacity carbon pricing/ pricing mechanisms to reduce greenhouse gas emissions; - allocation of quotas on the basis of benchmarking; - reducing energy consumption to reduce emissions; - consideration of Energy Efficiency parameters in decision making. <p>Risks are monitored on a quarterly basis. Subsidiaries monitor greenhouse gas emissions. Subsidiaries are required to submit annual verified greenhouse gas emissions inventory reports to the authorized environmental authority and apply for additional allowances in a timely manner, if necessary.</p> <p>Current regulatory risks are minimized through internal regulations, such as:</p> <ul style="list-style-type: none"> - Strategy 2022-2031; - Low Carbon Development Program 2022-2031; - Environmental Policy; - Emissions Management Policy.
Market	Relevant, always included	Global decline in demand for hydrocarbons due to accelerated low-carbon development, as well as increased volatility in commodity markets

		<p>Risks associated with changes in demand and consumer preferences Companies apply a scenario approach to the forecasting of macroeconomic indicators, including the use of various climate scenarios. In particular, a study of the potential from production to consumption of hydrogen, hydrogen technology in the climatic conditions of Kazakhstan is underway.</p> <p>Climate-related risks and opportunities may have a significant impact on financial planning. These impacts will be driven by external factors, such as changes in oil and other commodity prices, and internal processes, such as the implementation of GHG reduction programs. The impact on profitability will be both positive and negative. Thus, the growing demand for low-carbon products in the market could significantly affect business.</p>
Reputation	Relevant, always included	<p>Risks associated with stakeholder perceptions of the Company's participation in the transition to a low-carbon economy or refusal from such participation.</p> <p>The Company regularly discloses information on the management of climate issues and greenhouse gas emissions, taking into account stakeholder requests.</p>
Acute physical	Relevant, always included	<p>Risks associated with changes in weather and climatic conditions and other characteristics of the natural environment in the regions of the Group's presence, which may affect the reliability of equipment and human health (including risks of natural disasters, deposit inundation, drought).</p> <p>An assessment of the impact of climatic changes in the design and construction of facilities, including the most vulnerable areas (low-water regions and offshore facilities), is performed, and environmental conditions are monitored on a relevant range of parameters, which allows us to take the necessary measures in a timely manner.</p>
Chronic physical	Relevant, always included	<p>Chronic physical risks are identified together with acute physical risks. Risks directly related to physical climate change are assessed and monitored in our subsidiaries as part of our operational/industrial risk management programs.</p> <p>Thus, flooding risks, including the flooding of plugged and abandoned wells, as well as weather-related risks, are managed through industrial safety programs and activities. These risks significantly affect the integrity of our production facilities and technical equipment (for example, electricity outages at one of our facilities where 30% of failures were caused by weather conditions).</p>

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

14 subsidiaries of KMG are subject to the Kazakhstan Emissions Trading System (KazETS).

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

1,155,070,000

Potential financial impact figure – maximum (currency)

1,529,792,157

Explanation of financial impact figure

The minimum costs include the purchase of a carbon credit shortfall, which is calculated from the forecast cost of carbon credits until 2030, and the cost of electricity, taking into account its rise in price due to rising carbon prices.

The maximum costs include the payment of penalties for exceeding the amount of credits for GHG emissions until 2030 and the cost of electricity, including its rise due to increasing carbon prices.

Cost of response to risk

755,800,000

Description of response and explanation of cost calculation

KMG has developed a Low-Carbon Development Program, which includes a direction to improve the energy efficiency of the Company and covers all business areas (mining, transportation and downstream). Energy efficiency measures have been selected taking into account the MACC-analysis (Marginal Abatement Cost Curve), which allows presenting measures to reduce GHG emissions in order of their cost-effectiveness. The list of measures, which is considered cost-effective according to the results of the MACC-analysis, has the total implementation budget (CAPEX) in the amount of 305.77 million USD. The GHG emission reduction effect is 1.05 mln tCO₂.

In addition to energy efficiency measures, the Company has developed a portfolio of projects related to the increase of the share of renewable energy. In particular, KMG has set a goal of commissioning Renewable Energy facilities with a total capacity of at least 300 MW. Preliminarily, the balance of RES portfolio is expected to look as follows: the share of Wind Power Plants - 80%, Solar Power Plants - 20%. The total investment for implementation of RES projects will be at least 450 million USD. The annual electric power generation by RES will reach 945 million kWh (by 2031).

The implementation of projects in this area will make it possible to achieve an additional reduction of CO₂ emissions by 0.6 million tonn. Thus, the total portfolio of available measures (energy efficiency + renewables) currently has a small reserve compared to the Company's GHG emission reduction target (reduction of 1.62 mln tCO₂ by 2031).

Comment

KMG, while modeling the costs of the risk of increasing the price of carbon, considers the hard option, as the results of preliminary estimates indicate that at current prices for CO₂ (\$ 1 per ton), the Republic of Kazakhstan will not be able to achieve Nationally Determined Contributions (NDCs). In this regard, KMG expects a tightening of carbon regulation, which will drive the growth of prices in the carbon market. In turn, the rising cost of carbon regulation will lead to an increase in prices for energy resources.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation
Mandates on and regulation of existing products and services

Primary potential financial impact

Increased direct costs

Company-specific description

In accordance with Article 289 of the Environmental Code of the Republic of Kazakhstan, greenhouse gas emissions from hydrocarbon production are subject to carbon regulation.

In the case of exceeding the volume of the established quota, the quota subject is prohibited from operating activities until the quota deficit is compensated or the fine for exceeding the amount of quotas is paid.

In turn, some subsidiaries and affiliates of KMG due to the maturity of the fields have higher GHG emissions than set by the quota.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

11,429,549

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact includes the amount of penalties, which, in accordance with the Code of Administrative Offences of the Republic of Kazakhstan, is \$35.9 per ton of carbon dioxide, which exceeds the assigned quota.

Cost of response to risk

373,149

Description of response and explanation of cost calculation

In order to prevent quota shortages, intra-holding procurement was carried out between two KMG subsidiaries at an exchange quotation price, which is regulated by the

Environmental Legislation of the Republic of Kazakhstan. The cost of one quota in 2021 on the exchange was \$1.2 USD.

Comment

To avoid further risks of fines and the need to buy quotas, which will become more expensive as carbon regulation tightens, KMG has developed and approved a Low-Carbon Development Program for the period 2022-2031, which implementation will reduce to 1.6 million tons of CO₂ by 2031.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation
Enhanced emissions-reporting obligations

Primary potential financial impact

Increased direct costs

Company-specific description

Currently, only carbon dioxide falls under the regulation of greenhouse gases. At the moment, the issue of including methane in the regulation of greenhouse gas emissions is being discussed. In Kazakhstan, when regulating methane, the most vulnerable sector is the oil and gas sector. In particular, KMG has a sufficient number of fugitive sources which are not currently metered. Methane emissions regulation, in turn, will require tracking all methane leaks and taking measures to eliminate them, which will require additional financial costs and re-equipment of the Company's technological Park.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

not available

Cost of response to risk

1,408,000

Description of response and explanation of cost calculation

This sum includes the cost of LDAR equipment and personnel training.

Comment

To reduce this risk and determine reliable methane leaks, KMG, as part of its Low Carbon Development Program, has set a goal to implement an LDAR system at its upstream assets.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Other, please specify

electricity tariff increase

Primary potential financial impact

Increased direct costs

Company-specific description

Electricity prices in Kazakhstan are among the lowest in the world.

Implementation of the best available techniques (BAT) provided for by the new

Environmental to the Code of the Republic of Kazakhstan, it will require additional costs for energy-producing organizations, in particular, for large fuel-burning plants. In

accordance with the principles .

According to the EU BAT, dust cleaning technologies should be provided for such installations, as well as the removal of sulfur oxides (SOx) and nitrogen oxides (NOx) in the flue tracts.

The introduction of appropriate measures will entail an additional increase in the cost of purchased electricity

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

108,695

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial effect includes the sum of the total costs of KMG for the purchase of electricity with an increase in the electricity tariff in the horizon until 2030

Cost of response to risk

1,783,593,478

Description of response and explanation of cost calculation

KMG has developed a Low-carbon Development Program, within the framework of which a number of model analyses were carried out to assess the impact of purchased electricity costs on the company's costs.

Based on the presented data of the model analysis, the cost of electricity in the country will inevitably grow, both under the influence of the national carbon regulation, and taking into account the need to cover additional capital and investment costs in the renewal of capacities and the introduction of renewable energy in the country's energy system

Comment

Considering the fact that in comparison with GDP per capita, the price of electricity in Kazakhstan is the lowest in the region, the prospect of price growth in the future is realistic.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

KMG has its own heat and electricity generation assets and buys these types of resources from third parties. Improvement of energy efficiency will allow the Company to reduce energy dependence on third parties and save financial resources. By improving operational efficiency, KMG plans to reduce its own consumption of fuel resources (gas, fuel oil), which can be sold to third parties.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

830,467,800

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Additional costs for the purchase of electricity from third parties, associated with tariffs that are increasing due to the tightening of carbon regulation, as well as the modernization and commissioning of new power assets.

Cost to realize opportunity

305,800,000

Strategy to realize opportunity and explanation of cost calculation

The possibility of improving operational efficiency, based on the recommendations of energy audits, proposals from the energy services of KMG subsidiaries and affiliates was assessed. A MACC analysis was carried out, which ranked the measures in terms of payback, taking into account the price of carbon. The implementation of the planned set of measures will reduce the energy intensity of the Company by 10%.

Comment

Improving the Company's energy efficiency is a minimum plan, with a more significant rise in the cost of energy resources, the MACC-analysis demonstrates that KMG is able to increase the number of energy efficiency measures.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

KMG plans to implement RES projects both for its own needs and for the sale of green energy to third parties. At the same time, producing gas at its own fields, KMG is able to independently carry out the construction of gas plants to compensate for the time of lower energy production from RES. This significantly increases the Company's competitiveness in comparison with Renewable Energy facilities, which have to seek balancing capacity in the general market or install batteries.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

235,671,574

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

It takes into account revenues from the sale of green energy and carbon offsets.

Cost to realize opportunity

450,000,000

Strategy to realize opportunity and explanation of cost calculation

The estimate is based on the assumption that construction of one MW of RES costs \$1,500,000. KMG plans to build at least 300 MW of RES.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Ability to diversify business activities

Primary potential financial impact

Other, please specify

Revenue increase through the sale of carbon credits and carbon offsets

Company-specific description

Due to the improvement of operational efficiency, subsidiaries and affiliates of KMG within the framework of carbon regulation and operation of the national ETS have a surplus of carbon credits. It is planned to sell these credits to obtain additional funds for further modernization of production facilities.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

950,958

Potential financial impact figure – maximum (currency)

56,552,146

Explanation of financial impact figure

In the minimal impact, the estimation is based on the amount surplus and the price of credits that KMG can sell.

In the maximum estimate we also take into account the possibility of selling carbon credits from the construction of Renewable Energy facilities.

Cost to realize opportunity

394,163

Strategy to realize opportunity and explanation of cost calculation

The costs include only the costs of validation and verification of offset projects, as KMG receives credits on a free basis, and RES projects will be built under the policy of diversification of the business and increasing the energy security of the Company.

Comment

KMG made a a breakdown into minimal and maximal effect, as KMG being a national company of Kazakhstan must obtain approval from the Government of the Republic of Kazakhstan for the types of activities it plans to carry out.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Other, please specify

Opportunity to generate additional revenue through the sale of new low-carbon products

Company-specific description

KMG has experience in the production of gray hydrogen, which is being used in the production of petroleum products. In order to reduce greenhouse gas emissions, KMG is studying the possibility of production of blue hydrogen (as KMG has gas resources) or green hydrogen (as RES construction are planned). In addition, KMG is considering selling carbon-neutral hydrogen to metallurgical companies in Kazakhstan.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Unknown

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

not available

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

KMG has formed a Competence Center in the field of Hydrogen energy on the basis of KM Engineering LLP, attracting its own scientists and scientists from universities and research centers engaged in the production of hydrogen with zero or low carbon dioxide emissions. Further, this group will have to assess the potential of using blue/green hydrogen on the assets of KMG and other Kazakhstani companies, assess the necessary production costs and possible revenues from the sale of such types of hydrogen

Comment

Detailed calculations of the financial costs of the opportunity will be carried out later, after the potential for project implementation is determined.

Identifier

Opp5

Where in the value chain does the opportunity occur?

Upstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Other, please specify

Reduction of carbon costs and revenue growth by increasing the oil recovery factor

Company-specific description

KMG started studying the use of CCUS technology to carbon capture and storage. KMG sees an opportunity to use carbon injection to increase the oil recovery factor of old fields. In addition, KMG believes that carbon injection and storage can be performed in exhausted wells, either from its own or from third parties.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

In the reporting year, KMG began geological studies at one of its subsidiaries and affiliates to assess the possible volume of carbon injection and evaluate the possibility of increasing the oil recovery factor through carbon injection. Therefore, detailed calculations of the financial effect of this possibility will be performed later.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

KMG, together with KMG Engineering and with the support of Chevron Corporation, is working on the implementation of a pilot project for the capture, storage and use of CO₂ (CCUS). At the present KMG completed the research and the technical and economic analysis aimed at assessing the technical potential and economic feasibility of the pilot project. In particular:

- the Company carried out the screening of concentrated sources of CO₂ emissions in Atyrau and Mangystau regions;
- search for available reservoirs (traps) located within a radius of up to 100 km from concentrated sources and corresponding to the requirements of CO₂ disposal has been performed;

Comment

Detailed calculations of the financial costs of the opportunity will be carried out later, after the potential for project implementation is determined.

Identifier

Opp6

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Implementation of the forest climate project - the first offset project based on natural solutions to minimize the carbon footprint and increase the ESG rating of the Company.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Not available

Cost to realize opportunity

177,800

Strategy to realize opportunity and explanation of cost calculation

As part of its ESG policy, KMG plans to implement a project to increase the forest cover of Kazakhstan. To do this, in 2023, it is planned to carry out survey work on the selection of land plots, tree crops and develop a working draft.

Comment

Detailed calculations of financial costs for the implementation of this opportunity will be carried out later, after the project implementation potential is determined.

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan

Yes, we have a climate transition plan which aligns with a 1.5°C world

Publicly available climate transition plan

Yes

Mechanism by which feedback is collected from shareholders on your climate transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

Shareholders of JSC NC KazMunayGas are JSC Sovereign Welfare Fund Samruk-Kazyna - 87.42%, Republican State Institution National Bank of Kazakhstan - 9.58%, and 3% - in free float on the KASE and AIX exchanges.

In accordance with the Agreement on transfer of shares of KazMunayGas into trust management from 12 October 2015 № 505 NB / 529-i, concluded between Samruk-Kazyna and the National Bank of the Republic of Kazakhstan, the Fund is the holder of all the voting shares of KMG. KazMunayGas, at the hearing of the Fund's portfolio companies, provides the majority shareholder with a semi-annual and annual performance report and receives feedback.

In 2022 in particular, on the performance report for 2021, information was provided on KMG's Low-Carbon Development Programme. In the first half year 2022 performance report, information was provided on the developed Action Plan for the implementation of the Low Carbon Development Programme.

According to the Corporate Standard on Strategic and Business Planning in Samruk-Kazyna Group of Companies, the strategic development planning of its portfolio companies, including KMG, should be consistent with the achievement of common strategic goals of the Fund and its portfolio companies.

In addition, 3 representatives of the majority shareholder are members of the KMG Board of Directors, which directly approved the KMG Low-Carbon Development Programme for the period 2022-2031.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your climate transition plan (optional)

 ПНУР_ENG_краткая (1).pdf

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Use of climate-related scenario analysis to inform strategy	
Row 1	Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
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<p>Transition scenarios Bespoke transition scenario</p>	<p>Company-wide</p>	<p>1.5°C</p>	<p>Three scenarios were considered in the model - the baseline, the green development scenario and the low-carbon development scenario.</p> <p>The green scenario assumes a reduction in GHG emissions while maintaining the current operating structure of assets through energy efficiency measures, electrification, and the use of renewable energy.</p> <p>In the low-carbon development scenario, in addition to the above measures, projects are added to actively introduce technologies for hydrogen production, carbon capture and storage, and active offset policy (development of climate projects). However, given the current situation in the country's readiness for new technologies, low carbon prices, certain gaps in the permit and legislative framework, poor infrastructure development, etc., these areas will require large investments, but they will not produce a significant effect in terms of reducing the carbon footprint by 2031.</p> <p>Considering the above, the most promising scenario until 2031 is the green development scenario with a focus on energy efficiency and renewable energy measures. At the same time, promising areas should be tested in a pilot mode to build competencies and own potential for subsequent scaling in case of favorable conditions. Within the framework of the Program, these measures are allocated in a separate block "Additional decarbonization measures"</p> <p>Based on the results of the analysis, as well as considering KMG's country policy and development forecasts, the achievable goal for the Company under the green development scenario is to reduce carbon dioxide emissions by 15% by 2031 from the level of emissions in 2019, or 1.6 million tons of CO₂.</p> <p>The largest costs are associated with the growth of payments for purchased electricity and with the tightening of carbon regulation. The difference in costs between the baseline and green scenarios will create support for investments in energy efficiency and decarbonization.</p>
<p>Physical</p>	<p>Company-</p>	<p>1.6°C – 2°C</p>	<p>In 2022, KMG plans to improve the level of climate</p>

<p>climate scenarios Customized publicly available physical scenario</p>	<p>wide</p>	<p>risk management and bring the disclosure of information in the reporting in accordance with the principles of TCFD. The work is planned to focus on stress-testing the Company's supply chains under various climate change scenarios, identifying appropriate priorities for climate change actions, including (i) assessing financial materiality, (ii) identifying appropriate science-based indicators and targets that lead to improved corporate climate change performance and (iii) preparing reports, in accordance with TCFD.</p> <p>We plan to adopt a set of simplified climate change scenarios and build scenarios for each priority area and the corresponding value chain. This simplified approach will include the following:</p> <ul style="list-style-type: none"> - A set of scenarios according to the RCP 2.6-4.5 IPCC AR5 scenarios, assuming rapid decarbonization and minimal physical impacts on climate over the next decade. - A set of scenarios according to scenarios RCP 6.0-8.5 AR5, which assume slower decarbonization and significant physical impacts on the climate. <p>Also, detailing the impact of these scenario parameters on the value chain will be worked out, in order to:</p> <ul style="list-style-type: none"> - Identify potential risks in each value chain in the form of loss of production and/or loss of value due to carbon transition and physical climate impacts to be prioritized in terms of their likely materiality and severity, and quantified in financial terms and based on available metrics (e.g., loss of profitability due to increased carbon regulation and taxation, reduced demand for oil and oil products). - Identify potential opportunities in each value chain corresponding to possible increases in production and/or value due to the carbon transition and the physical impacts of climate, including effective management of the risks , which should be prioritized in terms of their likelihood and, where possible, quantified in financial terms (e.g., additional revenue from renewable assets and related services).
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			<p>A climate stress test is planned according to the scenarios developed.</p> <ul style="list-style-type: none"> - Develop tools for integration into the financial model of KazMunayGas in order to analyze the impact on key financial indicators; - Perform sensitivity analysis on key physical risk variables; - Perform sensitivity analysis on key transition risk variables. <p>All this will ultimately help us prioritize climate action for low-carbon and climate-resilient business development.</p>
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C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

1. Increase in carbon payments and the cost of purchased electricity due to tightening of national regulation.
2. Impact of lower demand on revenue under the current 2025 oil and petroleum product sales plan.

Results of the climate-related scenario analysis with respect to the focal questions

As a result, the analysis, as in other cases, provides two options for modeling the growth of electricity prices in the country:

- soft scenario (assuming moderate growth in carbon unit prices and moderate amounts of capital investment);
- tight scenario, respectively (assuming a hard carbon unit price growth scenario) and more significant capital expenditures.

Assessment of the financial impact of regulatory options, the formation of the company's carbon budget to support decarbonization initiatives:

The most feasible direction of decarbonization for KMG until 2030 is operational improvements, as this direction is the most common and understandable among companies in the industry and allows the use of known tools to optimize equipment and management within the existing operating structures.

Based on the model analysis, the cost of electricity in the country will inevitably grow, both under the influence of national carbon regulation, and given the need to cover

additional capital and investment costs in capacity renewal and implementation of RES in the energy system of the country.

Reported carbon regulation risks, projected deficit of the carbon allowances, rising of the electricity prices (as noted in C2.3a, C2.4a), and an increase in the number of emergency power outages associated with outdated infrastructure of the national electricity grid and power generating facilities, KMG decided to increase its portfolio of renewable energy projects to reduce its carbon footprint as well as improve its energy security. In the medium term, the company will supply green energy both for its own needs and to the unified energy system of the country.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>KMG understands its role towards the fulfilment of the country's obligations under the Paris agreement given its role as one of the key national companies and contributors to the development of climate legislation in Kazakhstan. In connection with climate risks, tighter carbon regulation and increased demand for low-carbon products, in 2021 the Company's strategy until 2031 was renewed, where one of the 4 main strategic goals of the company was set as "Sustainable development and continuous reduction of carbon intensity of production". In order to achieve this goal, a Low-Carbon Development Program for 2022-2031 approved.</p> <p>Reported carbon regulation risks, projected deficit of the carbon allowances, rising of the electricity prices (as noted in C2.3a, C2.4a), and an increase in the number of emergency power outages associated with outdated infrastructure of the national electricity grid and power generating facilities, KMG decided to increase its portfolio of renewable energy projects to reduce its carbon footprint as well as improve its energy security. In the medium term, the company will supply green energy both for its own needs and to the unified energy system of the country.</p> <p>KMG has started developing a feasibility study and studying the wind potential in 2 regions, where it is planned to build wind farms with a total capacity of 1.12 GW.</p>

		<p>Our Romanian refinery produces Low-carbon products, which are supplied to European markets: Euro plus 10 ppm biobenzene and Euro 5 diesel blended with biodiesel. It has international certification ISCC (International Sustainability and Carbon Certificate) for fuels containing bio-components. In 2022 KazMunayGas International (KMGI) approved a Low-carbon Development Strategy. 4 strategic options have been defined for KMGI according to its diversification appetite – These have been assessed considering several criteria such as KMG strategic targets, KMGI's decarbonization targets, its capabilities, the long-term business model sustainability or the value creation potential – the Diversified downstream player option emerged as the recommended option. This option sets forth pursuit of gradual diversification, including into 2nd generation biofuels (bioethanol and biodiesel), renewable electricity production with ~200 MW installed capacity, expanding EV charging network, as well as entrance to energy supply after 2025</p>
<p>Supply chain and/or value chain</p>	<p>Not evaluated</p>	<p>KMG's Low-Carbon Development Program noted the need to improve procurement procedures in order to work more closely with suppliers to identify and further manage greenhouse gas emissions. Given that the rules of procurement procedures are developed by the parent company (Samruk-Kazyna JSC) and apply to all of its subsidiaries, the improvement of procurement rules will take several years.</p>
<p>Investment in R&D</p>	<p>Yes</p>	<p>In 2021, KMG began work on the development and implementation of a pilot project to capture, store carbon dioxide (CCUS) and determine the potential of CO2 injection to increase the oil recovery of depleted oil reservoirs, which will allow in the long term until 2031:</p> <ol style="list-style-type: none"> 1. Reduce the level of greenhouse gas emissions at KMG's industrial facility by capturing and injecting them into depleted oil reservoirs or aquifers. 2. To test the technology (working out the results for the formation of the legislative and permitting framework of the Republic of Kazakhstan to implement projects for carbon dioxide capture, storage (CCUS) and their subsequent scaling). <p>At the present KMG has completed the research and the technical and economic analysis aimed at assessing the technical potential and economic feasibility of the pilot project. KMG carried out the screening of concentrated sources of CO2 emissions in Atyrau and Mangystau regions. Search for available reservoirs (traps) located</p>

		<p>within a radius of up to 100 km from concentrated sources and corresponding to the requirements of CO2 disposal has been performed;</p> <p>Hydrogen Energy In 2022 the Department for Alternative Energy was established on the basis of KMG Engineering LLP, which will be a research hub / center of search for green fuels (including hydrogen and chemical compounds from hydrogen), whose development will significantly expand the scientific and production potential of both the company and the country, will contribute to increased technological growth and accelerate the formation of market foundations of hydrogen economy and become an investment in training of domestic staff. The work on the country market research and analysis of the development potential of low-carbon hydrogen energy in Kazakhstan has been completed. Within the framework of this work, as a case-stage and in-depth case study, an assessment of the potential of blue hydrogen production at the Pavlodar Petrochemical Plant was carried out, which includes a proposal to modernize the hydrogen production plant.</p> <p>Renewable energy KMG works with our partners (Total Eren and Eni) to build large-scale renewables projects. We plan to construct wind farms with a total capacity of 1.12 GW in Zhambyl and Mangystau regions. Therefore, KMG is currently conducting a feasibility study of wind potential in these areas.</p>
Operations	Evaluation in progress	<p>As an oil and gas company, we are subject to the regulatory requirements of the Environmental Code of the Republic of Kazakhstan (RoK) related to climate change, including the Kazakhstan Emissions Trading System. 14 KMG subsidiary entities are covered by Kazakhstan ETS and 2 subsidiary entities are covered by EU ETS.</p> <p>In addition, investors and the parent company are demanding the implementation of ESG principles in operations. This trend is on the rise and could result in increased operational costs for our company.</p> <p>Thus, taking into account the adopted Low-Carbon Development Program, KMG considers it advisable to focus its future activities on issues of improving operational efficiency and energy saving, as well as on the development of renewable energy projects portfolio. We aim to implement</p>

	<p>the Company's Energy Efficiency and Carbon Footprint Reduction Policy in order to achieve the climate goals in an orderly manner. The policy shall become a mandatory document for all employees of KMG and its subsidiaries and affiliates. We plan to achieve at least 10% reduction of energy and carbon intensity, and develop at least 300 MW of renewable power by 2031. As part of this strategy, we launched a prefeasibility study jointly with Eni for 120 MW hybrid power plant in Mangystau region around our key upstream assets and jointly with Total Eren for 1000 MW wind power plant in Zhambyl region.</p> <p>In order to integrate climate-related risks into our strategy, we aim to develop TCFD aligned governance and risk management processes.</p> <p>Also, in 2022, the Internal Carbon Pricing Program was approved. The main purpose of the Program is to assess and minimize the financial risks of the Company from the tightening of carbon regulation, as well as the redistribution of part of the investments from carbon-intensive projects to low-carbon ones. The program provides for the accounting of carbon costs implemented in the system of modelling and evaluation of investment projects.</p>
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C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Acquisitions and divestments Assets	<p>1. Acquisitions and divestments.</p> <p>Climate risks and opportunities have a significant impact on a company's financial planning. Change in the market structure - the development of renewable energy sources, transformation of the energy mix, increase of electric transport - leads to a decrease in oil demand in the energy sector for the long term. However, there is a growing demand for natural gas as an alternative reserve fuel in the electric power industry, as well as a raw material for polymers. Increasing gas production and sales by expanding APG processing capacities and building gas chemical complexes will allow us to increase revenue in the long term.</p> <p>2. Revenues.</p> <p>Revenues from the realization of KMG's energy transition opportunities will still be calculated. However, the development of renewable energy, offset policy and energy efficiency will provide a monetary financial effect</p>

		<p>in the amount of 160.19 million USD per year.</p> <p>3. Direct costs. To estimate the direct costs, KMG conducted modeling of the impact of carbon regulation. In the Business as Usual scenario, direct cost growth for KMG will increase by \$1,155.07 million per year. In this regard, the implementation of the Low Carbon Development Program will reduce direct costs by \$200 million compared to the Business as Usual scenario and generate additional income in the amount of 160.19 million USD per year.</p> <p>4. Capital Expenditures. The total capital cost of KMG's Low Carbon Development Programme was estimated at US\$755.8 million in 2021. In 2022, KMG has developed a Low Carbon Development Programme Action Plan, in which the costs have been calculated in more detail and amount to US\$931.2 million.</p> <p>Additionally, in 2022, KMG developed and approved an Internal Carbon Pricing Program. The main objectives of the Program are the redistribution of investments in low-carbon projects, as well as in projects to reduce greenhouse gas emissions and modernize enterprises. As part of the implementation of the Program in 2023, options for the introduction of carbon payments for our subsidiaries for exceeding the established thresholds for greenhouse gas emissions will be worked out in detail. It is assumed that these payments will be accumulated in a specially created Carbon Fund from which, in the future, funds will be distributed to finance the most effective low-carbon projects for the group of companies. This measure will: on the one hand, further stimulate subsidiaries to reduce emissions and comply with the established standards to ensure the overall goal of KMG to reduce GHG emissions by 15%, and will also create additional cash flow to finance low-carbon projects.</p> <p>5. Assets. As part of the energy transition strategy, KMG plans to develop renewable energy sources both through the construction of its own assets and through M&A transactions with existing projects.</p>
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C3.5

(C3.5) In your organization’s financial accounting, do you identify spending/revenue that is aligned with your organization’s climate transition?

Identification of spending/revenue that is aligned with your organization's climate transition	
Row 1	No, but we plan to in the next two years

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

Intensity target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Is this a science-based target?

No, and we do not anticipate setting one in the next two years

Target ambition

Year target was set

2021

Target coverage

Country/area/region

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Base year

2019

Base year Scope 1 emissions covered by target (metric tons CO₂e)

7,360,760

Base year Scope 2 emissions covered by target (metric tons CO₂e)

3,304,832

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO₂e)

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)

Base year total Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

10,665,592

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e)

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e)

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO₂e)

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO₂e)

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO₂e)

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO₂e)

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e)

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO₂e)

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO₂e)

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2031

Targeted reduction from base year (%)

15

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

9,065,753.2

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

7,551,481.58

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

3,278,949.47

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

10,830,431.05

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

-10.3034787005

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

According to the Low-Carbon Development Program, the emission reduction targets only account for tons of CO2.

Plan for achieving target, and progress made to the end of the reporting year

List the emissions reduction initiatives which contributed most to achieving this target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Is this a science-based target?

No, and we do not anticipate setting one in the next two years

Target ambition

Year target was set

2021

Target coverage

Business activity

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Intensity metric

Other, please specify

Metric tons of CO₂-e per thousand tons of produced hydrocarbons

Base year

2019

Intensity figure in base year for Scope 1 (metric tons CO₂e per unit of activity)

93

Intensity figure in base year for Scope 2 (metric tons CO₂e per unit of activity)

54.6

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

147.6

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

30

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

37

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3,

Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure

% of total base year emissions in all selected Scopes covered by this intensity figure

32

Target year

2031

Targeted reduction from base year (%)

10

Intensity figure in target year for all selected Scopes (metric tons CO₂e per unit of activity) [auto-calculated]

132.84

% change anticipated in absolute Scope 1+2 emissions

-15

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year for Scope 1 (metric tons CO₂e per unit of activity)

114.8

Intensity figure in reporting year for Scope 2 (metric tons CO₂e per unit of activity)

52.2

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for total Scope 3 (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for all selected Scopes (metric tons CO₂e per unit of activity)

167

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

-131.4363143631

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The target of carbon intensity reduction by 10% by 2031 has been set for upstream facilities in Kazakhstan, which are under our operational control. According to the Low-Carbon Development Program, the emission reduction targets only account for tons of CO₂.

Plan for achieving target, and progress made to the end of the reporting year

In the reporting year, the volume of production decreased compared to the level of 2019 (according to which the target was set).

At the same time, greenhouse gas emissions have increased due to the full capacity of their own power generation sources, as well as changes in environmental legislation (this year upstream companies took into account the emissions of contractors in their emissions, in connection with the requirements of the authorized body in the field of environmental protection).

In addition, a new methodology for calculating greenhouse gas emissions was approved, in which the coefficient of greenhouse gas emissions increased by 1.5 times compared to the previous methodology.

It should be particularly noted that the recalculation of emissions the base year (2019) has not been carried out. This work will be carried out in early 2024 and the data will be relected in the climate questionnaire CDP for 2023.

List the emissions reduction initiatives which contributed most to achieving this target

Target reference number

Int 2

Is this a science-based target?

No, and we do not anticipate setting one in the next two years

Target ambition

Year target was set

2021

Target coverage

Business activity

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Intensity metric

Other, please specify

metric tons of CO₂-e per thousand tons of crude oil

Base year

2019

Intensity figure in base year for Scope 1 (metric tons CO₂e per unit of activity)

229.9

Intensity figure in base year for Scope 2 (metric tons CO₂e per unit of activity)

100.4

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

**Intensity figure in base year for Scope 3, Category 11: Use of sold products
(metric tons CO2e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of
sold products (metric tons CO2e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 13: Downstream leased
assets (metric tons CO2e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons
CO2e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 15: Investments (metric
tons CO2e per unit of activity)**

**Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e
per unit of activity)**

**Intensity figure in base year for Scope 3, Other (downstream) (metric tons
CO2e per unit of activity)**

**Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of
activity)**

**Intensity figure in base year for all selected Scopes (metric tons CO2e per unit
of activity)**

330.3

**% of total base year emissions in Scope 1 covered by this Scope 1 intensity
figure**

50

**% of total base year emissions in Scope 2 covered by this Scope 2 intensity
figure**

49

**% of total base year emissions in Scope 3, Category 1: Purchased goods and
services covered by this Scope 3, Category 1: Purchased goods and services
intensity figure**

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure

% of total base year emissions in all selected Scopes covered by this intensity figure

50

Target year

2031

Targeted reduction from base year (%)

10

Intensity figure in target year for all selected Scopes (metric tons CO₂e per unit of activity) [auto-calculated]

297.27

% change anticipated in absolute Scope 1+2 emissions

-15

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year for Scope 1 (metric tons CO₂e per unit of activity)

235.8

Intensity figure in reporting year for Scope 2 (metric tons CO₂e per unit of activity)

91

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for total Scope 3 (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for all selected Scopes (metric tons CO₂e per unit of activity)

326.8

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

10.5964274902

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The target of carbon intensity reduction by 10% by 2031 has been set for 3 large refineries in Kazakhstan. According to the Low-Carbon Development Program, the emission reduction targets only account for tons of CO₂.

Plan for achieving target, and progress made to the end of the reporting year

In the reporting year, the volume of oil refining increased compared to the level of 2019 (according to which the target was set). Greenhouse gas emissions have increased accordingly. The increase is also due to changes in environmental legislation (a new methodology for calculating greenhouse gas emissions has been approved, in which the greenhouse gas emission coefficient has increased by 1.5 times compared to the previous methodology.)

It should be particularly noted that the recalculation of emissions the base year (2019) has not been carried out. This work will be carried out in early 2024 and the data will be relected in the climate questionnaire CDP for 2023.

List the emissions reduction initiatives which contributed most to achieving this target

Target reference number

Int 3

Is this a science-based target?

No, and we do not anticipate setting one in the next two years

Target ambition

Year target was set

2021

Target coverage

Site/facility

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Intensity metric

Other, please specify

metric tons of CO₂-e per thousand tons of crude oil

Base year

2019

Intensity figure in base year for Scope 1 (metric tons CO₂e per unit of activity)

38.49

Intensity figure in base year for Scope 2 (metric tons CO₂e per unit of activity)

15.9

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO₂e per unit of activity)

Intensity figure in base year for total Scope 3 (metric tons CO₂e per unit of activity)

Intensity figure in base year for all selected Scopes (metric tons CO₂e per unit of activity)

54.4

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

0.5

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

0.4

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure

% of total base year emissions in all selected Scopes covered by this intensity figure

0.5

Target year

2031

Targeted reduction from base year (%)

10

Intensity figure in target year for all selected Scopes (metric tons CO₂e per unit of activity) [auto-calculated]

48.96

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year for Scope 1 (metric tons CO₂e per unit of activity)

43.5

Intensity figure in reporting year for Scope 2 (metric tons CO₂e per unit of activity)

17.5

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

61

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

-121.3235294118

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The target of carbon intensity reduction by 10% by 2031 has been set for bitumen production facility in Kazakhstan.

According to the Low-Carbon Development Program, the emission reduction targets only account for tons of CO2.

Plan for achieving target, and progress made to the end of the reporting year

In the reporting year, the volume of oil refining increased compared to the level of 2019. Greenhouse gas emissions have increased accordingly,. The increase is also due to changes in environmental legislation (a new methodology for calculating greenhouse gas emissions has been approved, in which the greenhouse gas emission coefficient has increased by 1.5 times compared to the previous methodology.)
It should be particularly noted that the recalculation of emissions the base year (2019) has not been carried out. This work will be carried out in early 2024 and the data will be relected in the climate questionnaire CDP for 2023.

List the emissions reduction initiatives which contributed most to achieving this target

Target reference number

Int 4

Is this a science-based target?

No, and we do not anticipate setting one in the next two years

Target ambition

Year target was set

2021

Target coverage

Business activity

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Intensity metric

Other, please specify

metric tons of CO₂-e per thousand tons of crude oil

Base year

2019

Intensity figure in base year for Scope 1 (metric tons CO₂e per unit of activity)

3.76

Intensity figure in base year for Scope 2 (metric tons CO₂e per unit of activity)

5.51

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO₂e per unit of activity)

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

9.3

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

4

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

8

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3,

Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure

% of total base year emissions in all selected Scopes covered by this intensity figure

5

Target year

2031

Targeted reduction from base year (%)

10

Intensity figure in target year for all selected Scopes (metric tons CO₂e per unit of activity) [auto-calculated]

8.37

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year for Scope 1 (metric tons CO₂e per unit of activity)

4.88

Intensity figure in reporting year for Scope 2 (metric tons CO₂e per unit of activity)

5.22

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO₂e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

10.1

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

-86.0215053763

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The target of carbon intensity reduction by 10% by 2031 has been set for midstream facilities in Kazakhstan.

According to the Low-Carbon Development Program, the emission reduction targets only account for tons of CO2.

Plan for achieving target, and progress made to the end of the reporting year

In the reporting year, the volume of transported oil decreased compared to the level of 2019 (according to which the target was set).

At the same time, greenhouse gas emissions have increased due to changes in environmental legislation (a new methodology for calculating greenhouse gas emissions has been approved, in which the greenhouse gas emission coefficient has increased by 1.5 times compared to the previous methodology.)

It should be particularly noted that the recalculation of emissions the base year (2019) has not been carried out. This work will be carried out in early 2024 and the data will be relected in the climate questionnaire CDP for 2023.

List the emissions reduction initiatives which contributed most to achieving this target

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Target(s) to increase low-carbon energy consumption or production

Other climate-related target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number

Low 1

Year target was set

2021

Target coverage

Country/area/region

Target type: energy carrier

Electricity

Target type: activity

Consumption

Target type: energy source

Renewable energy source(s) only

Base year

2019

Consumption or production of selected energy carrier in base year (MWh)

211

% share of low-carbon or renewable energy in base year

0.01

Target year

2031

% share of low-carbon or renewable energy in target year

15

% share of low-carbon or renewable energy in reporting year

0.28

% of target achieved relative to base year [auto-calculated]

1.8012008005

Target status in reporting year

Underway

Is this target part of an emissions target?

Yes, the construction of at least 300 MW of renewable energy will allow KMG to get credit for 0.6 million tons of CO₂ emissions, which will ensure that by 2031 the target of a 15% reduction in carbon dioxide emissions from 2019 levels will be met.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

This target takes into account the consumption of energy from renewable sources by our assets in Kazakhstan, which are under our operational control.

Plan for achieving target, and progress made to the end of the reporting year

The Low-Carbon Development program was developed in 2021 for the 2022-2031 period; therefore, targets for 2021 have not been set. Starting from 2022, it is planned to track progress towards the goals defined by 2031.

At the same time, the share of Renewable Energy consumption increased to 0.28% in the reporting year.

KMG has developed a portfolio of projects related to the increase of the share of renewable energy. In particular, KMG has set a goal of commissioning Renewable Energy facilities with a total capacity of at least 300 MW. Preliminarily, the balance of RES portfolio is expected to look as follows: the share of Wind Power Plants - 80%, Solar Power Plants - 20%. The total investment for implementation of RES projects will be at least 450 million USD. The annual electric power generation by RES will reach 945 million kWh (by 2031).

The implementation of projects in this area will make it possible to achieve an additional reduction of CO₂ emissions by 0.6 million tons.

List the actions which contributed most to achieving this target

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2021

Target coverage

Business activity

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency

Other, please specify

MJ

Target denominator (intensity targets only)

toe

Base year

2019

Figure or percentage in base year

2,281.3

Target year

2031

Figure or percentage in target year

2,053.2

Figure or percentage in reporting year

2,780

% of target achieved relative to base year [auto-calculated]

-218.6321788689

Target status in reporting year

Underway

Is this target part of an emissions target?

No

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target of energy intensity reduction by 10% by 2031 has been set for upstream sector facilities in Kazakhstan, which are under our operational control.

Plan for achieving target, and progress made to the end of the reporting year

The Low-Carbon Development Program (LCDP) was developed in 2021 for the 2022-2031 period; therefore, the energy intensity reduction goals for 2021 have not been set. Starting from 2022, it is planned to track progress towards the goals defined by 2031.

The energy intensity target will be achieved through the improvement of energy efficiency and energy management system of the Company as well as using potential of renewable energy.

List the actions which contributed most to achieving this target

Target reference number

Oth 2

Year target was set

2021

Target coverage

Business activity

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency

Other, please specify

MJ

Target denominator (intensity targets only)

toe

Base year

2019

Figure or percentage in base year

3,732.4

Target year

2031

Figure or percentage in target year

3,359.2

Figure or percentage in reporting year

3,791

% of target achieved relative to base year [auto-calculated]

-15.7020364416

Target status in reporting year

Underway

Is this target part of an emissions target?

no

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target of energy intensity reduction by 10% by 2031 has been set for 3 large refineries in Kazakhstan.

Plan for achieving target, and progress made to the end of the reporting year

The Low-Carbon Development Program (LCDP) was developed in 2021 for the 2022-2031 period; therefore, the energy intensity reduction goals for 2021 have not been set. Starting from 2022, it is planned to track progress towards the goals defined by 2031.

The energy intensity target will be achieved through the improvement of energy efficiency and energy management system of the Company as well as using potential of renewable energy.

List the actions which contributed most to achieving this target

Target reference number

Oth 3

Year target was set

2021

Target coverage

Site/facility

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency

Other, please specify

MJ

Target denominator (intensity targets only)

toe

Base year

2019

Figure or percentage in base year

650.1

Target year

2031

Figure or percentage in target year

585.1

Figure or percentage in reporting year

994

% of target achieved relative to base year [auto-calculated]

-529.0769230769

Target status in reporting year

Underway

Is this target part of an emissions target?

no

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target of energy intensity reduction by 10% by 2031 has been set for bitumen production facility in Kazakhstan.

Plan for achieving target, and progress made to the end of the reporting year

The Low-Carbon Development Program (LCDP) was developed in 2021 for the 2022-2031 period; therefore, the energy intensity reduction goals for 2021 have not been set. Starting from 2022, it is planned to track progress towards the goals defined by 2031.

The energy intensity target will be achieved through the improvement of energy efficiency and energy management system of the Company as well as using potential of renewable energy.

List the actions which contributed most to achieving this target

Target reference number

Oth 4

Year target was set

2021

Target coverage

Site/facility

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency

Other, please specify

MJ

Target denominator (intensity targets only)

Other, please specify

cubic meters of gas

Base year

2019

Figure or percentage in base year

3,296.5

Target year

2031

Figure or percentage in target year

2,966.7

Figure or percentage in reporting year

% of target achieved relative to base year [auto-calculated]

Target status in reporting year

Underway

Is this target part of an emissions target?

No

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target of energy intensity reduction by 10% by 2031 has been set for gas processing plant in Kazakhstan.

Plan for achieving target, and progress made to the end of the reporting year

The Low-Carbon Development Program (LCDP) was developed in 2021 for the 2022-2031 period; therefore, the energy intensity reduction goals for 2021 have not been set. Starting from 2022, it is planned to track progress towards the goals defined by 2031.

The energy intensity target will be achieved through the improvement of energy efficiency and energy management system of the Company as well as using potential of renewable energy.

List the actions which contributed most to achieving this target

Target reference number

Oth 5

Year target was set

2021

Target coverage

Business activity

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency

Other, please specify

MJ

Target denominator (intensity targets only)

toe

Base year

2019

Figure or percentage in base year

120.9

Target year

2031

Figure or percentage in target year

108.9

Figure or percentage in reporting year

% of target achieved relative to base year [auto-calculated]

Target status in reporting year

Underway

Is this target part of an emissions target?

No

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target of energy intensity reduction by 10% by 2031 has been set for midstream assets in Kazakhstan.

Plan for achieving target, and progress made to the end of the reporting year

The Low-Carbon Development Program (LCDP) was developed in 2021 for the 2022-2031 period; therefore, the energy intensity reduction goals for 2021 have not been set. Starting from 2022, it is planned to track progress towards the goals defined by 2031. The energy intensity target will be achieved through the improvement of energy efficiency and energy management system of the Company as well as using potential of renewable energy

List the actions which contributed most to achieving this target

C-OG4.2d

(C-OG4.2d) Indicate which targets reported in C4.1a/b incorporate methane emissions, or if you do not have a methane-specific emissions reduction target for your oil and gas activities, please explain why not and forecast how your methane emissions will change over the next five years.

The absence of methane targets is due to the fact that methane is not subject to carbon regulation in Kazakhstan, and current carbon prices do not provide an incentive to expand the scope of voluntary reduction.

However, according to the Low-Carbon Development Program, KMG sets a goal of achieving zero routine gas flaring by 2031, which will lead to a methane reduction from flaring. At the same time, KMG aims to implement an LDAR system at subsidiaries, which will allow to identify methane leaks and develop measures to reduce emissions.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO₂e savings.

	Number of initiatives	Total estimated annual CO ₂ e savings in metric tonnes CO ₂ e (only for rows marked *)
Under investigation	3	939,730
To be implemented*	0	0
Implementation commenced*	17	124,246
Implemented*	49	136,703
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Low-carbon energy generation
 Other, please specify
 Solar and Wind

Estimated annual CO₂e savings (metric tonnes CO₂e)

939,730

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period

11-15 years

Estimated lifetime of the initiative

>30 years

Comment

As part of the Low-carbon Development Program, KMG has planned the construction of RES facilities with a total capacity of at least 300 MW.

KMG has started developing a feasibility study and studying the wind potential in the Zhambyl region, in which, together with Total Eren S.A., it is planned to build a 1000 MW wind farm with an energy storage system. KMG is carrying out similar work on the construction of a 120 MW hybrid plant (sun +wind) in the Mangystau region together with Eni.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

136,706

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Mandatory

Annual monetary savings (unit currency – as specified in C0.4)

3

Investment required (unit currency – as specified in C0.4)

22,488,345

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

In 2022, according to Plan Actions 49 energy saving and energy efficiency measures were implemented at subsidiaries and affiliates, aimed at modernizing technological equipment, introducing

energy-saving technologies, and optimizing heat generation and consumption.

In addition, energy audits were conducted, which helped to:

- get an analysis of the condition of power, heat and water supply systems;
- evaluate the condition of the technical equipment of industrial enterprises;
- reveal the causes of losses.

Based on the results of the energy audits, recommendations to improve the energy efficiency of the audited subsidiaries and affiliates were developed.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

124,246

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

In 2022 the subsidiaries launched a number of measures on process optimization, on replacement of technically obsolete burners, optimization of heat flows, replacement of electric motors, reduction of electricity consumption by technological and pumping equipment, work on installation of heat exchanger, installation and strapping of processlines. These measures will be implemented in next few years.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	<p>KMG's investment policy is focused on improving the Company's efficiency in all areas of its core activities by investing in effective, profitable and competitive strategic projects with a significant potential to generate free cash flow, considering the strategic objectives of the Company. The Company's tasks in support of its investment policy are:</p> <ol style="list-style-type: none"> 1) Formation of an optimal and cost-effective investment portfolio of the Company focused on the achievement of the Company's Strategic Goals by ranking and balancing investment projects. 2) Increasing the level of maturity in project management by applying the Stage Gate Process and increasing control over the proper implementation of projects on time, budget, with the specified level of quality and obtaining direct financial benefits and declared results. 3) As a part of the low-carbon strategy, KMG considers any investment projects through the lens of their potential impact on reduction of the carbon footprint. New projects are evaluated by the level of profitability index for the owner (PI) (except for projects at the stage of exploration, projects implemented by order of the President or the Government of the Republic of Kazakhstan and socially important projects).
Dedicated budget for energy efficiency	<p>In 2022, in accordance with the Rules for Determining the Tariff to support of renewable energy sources, our subsidiaries and affiliates purchased electric power in the amount of 11,845 thousand kW for their own needs, produced from renewable energy sources from the Financial Settlement Center for Renewable Energy LLP. Electricity generation by solar panels of subsidiaries and affiliated companies for street lighting of territories in 2022 amounted to 75 thousand kWh.</p>
Financial optimization calculations	<p>Cost-benefit analysis of greenhouse gas emission and/or energy efficiency projects is one of the methods we use to stimulate investment in emission reduction activities. This mechanism is particularly relevant for our shareholders and the Management Board, who are responsible for making decisions on cost optimization and allocation of funds. We scrutinize the economic benefits of energy efficiency projects by evaluating the payback period and return on investment. Decisions on organizational, technological or technical measures are therefore taken not only on the basis of environmental</p>

	and energy performance assessments, but also with consideration of the financial benefit/loss.
Employee engagement	KMG pays great attention to professional development of employees in the field of sustainable development and conducts training courses for employees of the corporate center and subsidiaries and affiliates. In 2022 with the expert support of Chevron New Energies employees, a 3-day workshop on "Carbon capture and storage Technology" was conducted for employees of KMG subsidiaries. In November 2022, a 2-day seminar "Energy Transfer and Greenhouse Gas emissions Management at the enterprise" was organized for 45 employees of subsidiaries and the corporate center who are involved in the processes of energy efficiency management and greenhouse gas emissions control
Partnering with governments on technology development	In 2022, the Ministry of Energy of the Republic of Kazakhstan, Samruk-Kazyna JSC, KazMunayGas JSC NC and Total Eren S.A signed an Agreement on principles for the construction of a 1 GW wind farm (WPP) in Zhambyl region. The agreement was signed following the results of the work within the framework of the previously signed Memorandum of Understanding between the parties from 2021.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Type of product(s) or service(s)

Biofuels

Bioethanol

Description of product(s) or service(s)

Our Romanian refinery produces Low-carbon products, which are supplied to European markets: Euro plus 10 ppm biobenzene and Euro 5 diesel blended with biodiesel. We believe that our commitment to the production and distribution of fuels blended with biocomponents is a good start for the production of low-carbon fuels. This will minimize negative environmental and human health impacts from the use of our products. In 2018, we were very proud to receive international ISCC (International Sustainability and Carbon Certificate) certification for our biocomponent fuel.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

No

Methodology used to calculate avoided emissions

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Functional unit used

Reference product/service or baseline scenario used

Life cycle stage(s) covered for the reference product/service or baseline scenario

Estimated avoided emissions (metric tons CO₂e per functional unit) compared to reference product/service or baseline scenario

Explain your calculation of avoided emissions, including any assumptions

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

C-OG4.6

(C-OG4.6) Describe your organization's efforts to reduce methane emissions from your activities.

Since 2017, KMG has been a member of the Global Methane Initiative (GMI) project network, demonstrating its commitment to the reduction of methane emissions from the oil & gas sector.

Within the framework of the World Bank initiative, KazMunayGas has already achieved great results, the volume of gas flaring in 2022 decreased by 89% compared to 2017.

The main volume of routine gas flaring occurs at Kazakhoil Aktobe. Where, at the same time, since 2017, the volume of routine gas flaring in KOA has also decreased by 89%.

KMG is currently committed to the goal of achieving zero routine gas flaring by 2030, but will make every effort to reach the goal before 2030

C-OG4.7

(C-OG4.7) Does your organization conduct leak detection and repair (LDAR) or use other methods to find and fix fugitive methane emissions from oil and gas production activities?

Yes

C-OG4.7a

(C-OG4.7a) Describe the protocol through which methane leak detection and repair or other leak detection methods, are conducted for oil and gas production activities, including predominant frequency of inspections, estimates of assets covered, and methodologies employed.

In **C-OG4.7** question, we chose "Yes" button, but actually it is "No, but we are planning to conduct"

Starting from 2014, KazMunayGas is actively cooperating with Carbon Limits to detect and measure methane leaks at the production facilities of its subsidiaries and affiliates. This project is implemented within the framework of the Methane Emission Reduction Program, which is one of the tools to help reduce greenhouse gas emissions in the Republic of Kazakhstan provided by Norway and is supported by the Ministry of Energy of the Republic of Kazakhstan. In 2015-2016, 3 surveys were conducted with the participation of Carbon Limits specialists in the detection and measurement of methane leaks in 4 SDEs in Atyrau, Aktobe and South Kazakhstan regions. The carried out work made it possible to detect and quantify methane leaks from various emission sources, the prevention of which could lead to potential financial savings.

Unfortunately, KMG does not have a unified protocol for the detection and repair methane leaks. However, given the targets of KMG to implement the LDAR system in our upstream sector, such a protocol will be developed in the future.

C-OG4.8

(C-OG4.8) If flaring is relevant to your oil and gas production activities, describe your organization's efforts to reduce flaring, including any flaring reduction targets.

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.

Management of greenhouse gas emissions and reduction of gas flaring are among the priority tasks for KMG Group of companies. According to the approved Environmental Policy, the Company strives to achieve zero routine gas flaring and reduce emissions into the atmosphere

from flares. One of our most important tasks in reducing greenhouse gas emissions is to increase the beneficial use and utilization of raw gas and to minimize flaring. Thanks to the implemented measures of the programs for the development and processing of raw gas, the use of gas for our own needs to generate heat and electricity has increased. The result of purposeful actions on KMG Group of companies for the period of 2017-2021 was the reduction of APG flaring by 83%. This allowed us to reduce emissions of pollutants and greenhouse gases generated during the combustion and spreading of raw gas. In 2022, the Company's level of rational use of raw gas was 99%. The flaring rate is 1.5 tons per 1,000 tons of produced UGC (2.1 in 2021), which is 29% lower than in 2021 and 84% lower than the average IOGP indicator for the oil&gas industry. According to our Low-Carbon Development Programme approved on November 2021, KMG aims to achieve zero routing flaring by 2031.

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

Yes, other structural change, please specify

KazMunayTeniz LLP has been withdrawn from the operational boundaries of the company

Name of organization(s) acquired, divested from, or merged with

KazMunayTeniz LLP has been withdrawn from the operational boundaries of the company

Details of structural change(s), including completion dates

Due to the fact that KazMunayTeniz LLP has been withdrawn from the company's operational boundaries, emissions over the past 3 years have been recalculated without taking into account KazMunayTeniz LLP

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology Yes, a change in boundary	<p>In 2022, a new national methodology for calculating greenhouse gas emissions was adopted. In the new method, the CO2 emission coefficients increased by an average of 1.5 times compared to the previous method. Accordingly, CO2 greenhouse gas emissions from fuel combustion at subsidiaries and affiliates of JSC NC "KazMunayGas" increased by 1.5 times.</p> <p>It should be noted that in the reporting year, the methane emission coefficients were changed due to the fact that inflated coefficients were previously used. In the reporting year, suitable coefficients were adopted, and therefore, methane emissions in CO2 equivalent decreased significantly.</p> <p>Also, regarding changes in the reporting boundaries: KazMunaiTeniz LLP has been withdrawn from the company's operational boundaries, therefore, emissions over the past 3 years have been recalculated without taking into account KazMunaiTeniz LLP</p>

C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	Yes	Scope 1 Scope 2, location-based Scope 2, market-based Scope 3	<p>The company's base year was adopted in 2019, and it has not changed, since KazMunaiTeniz LLP was not included in its coverage.</p> <p>And the previous years 2020-2022 were recalculated without taking into account KazMunayTeniz LLP.</p>	Yes

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO₂e)

8,890,714.502

Comment

2019 was established as the base year, as it is closest to the typical operations of KMG Group, unlike 2021, which was affected by the economic crisis and 2020, which was affected by the pandemic coronavirus infection.

In the new KMG Development Strategy for 2022-2031, the strategic KPI "Reduce KMG Group's carbon footprint by 15% by 2031 from 2019 levels" has been enshrined.

Scope 2 (location-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO₂e)

3,304,832

Comment

2019 was established as the base year, as it is closest to the typical operations of KMG Group, unlike 2021, which was affected by the economic crisis and 2020, which was affected by the pandemic coronavirus infection.

In the new KMG Development Strategy for 2022-2031, the strategic KPI "Reduce KMG Group's carbon footprint by 15% by 2031 from 2019 levels" has been enshrined.

Scope 2 (market-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO₂e)

3,359,945.3

Comment

2019 was established as the base year, as it is closest to the typical operations of KMG Group, unlike 2021, which was affected by the economic crisis and 2020, which was affected by the pandemic coronavirus infection.

In the new KMG Development Strategy for 2022-2031, the strategic KPI "Reduce KMG Group's carbon footprint by 15% by 2031 from 2019 levels" has been enshrined.

Scope 3 category 1: Purchased goods and services

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 2: Capital goods

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 5: Waste generated in operations

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 6: Business travel

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 7: Employee commuting

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

71,698,130,618

Comment

2019 was established as the base year, as it is closest to the typical operations of KMG Group, unlike 2021, which was affected by the economic crisis and 2020, which was affected by the pandemic coronavirus infection.

In the new KMG Development Strategy for 2022-2031, the strategic KPI "Reduce KMG Group's carbon footprint by 15% by 2031 from 2019 levels has been enshrined.

Scope 3 category 12: End of life treatment of sold products

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

American Petroleum Institute Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry, 2009

European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

Other, please specify

The National guidelines for the calculation of GHG emissions were used to assess direct emission amounts for our facilities located in Kazakhstan - 4 methodologies. GHG Protocol Scope 2 Guidance and CDP Technical Note: Accounting of Scope 2 emissions

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO₂e?

Reporting year

Gross global Scope 1 emissions (metric tons CO₂e)

8,076,435.63

Start date

January 1, 2022

End date

December 31, 2022

Comment

The volume of CO₂ equivalents has significantly dropped compared to last year (by 2,534,654.1 tons of CO₂ eq). The core reason is due to the change in the methodology for calculating methane emissions. In the reporting year, more suitable coefficients were adopted for calculating methane emissions. Considering that methane emissions have a global warming potential of 25 - CO₂ equivalent emissions have significantly decreased. Also, due to KazMunayTeniz LLP withdrawal from the company's operational boundaries, emissions decreased slightly. At the same time, emissions of net tons of CO₂ increased due to oil refining volume's increase, the beginning into nominal operation of its own gas turbine station, and a change in the methodology for calculating CO₂ emissions.

Past year 1

Gross global Scope 1 emissions (metric tons CO₂e)

10,338,933.035

Start date

January 1, 2021

End date

December 31, 2021

Comment

The volume of emissions for 2021 has been recalculated without taking into account KazMunayTeniz LLP, since the upstream assets of this company have been sold. Due to the methodology's change, the amount of greenhouse gas emissions for the period 2019-2021 will be recalculated in 2024, and will be reflected in the CDP climate questionnaire for 2023.

Past year 2

Gross global Scope 1 emissions (metric tons CO₂e)

10,072,661.159

Start date

January 1, 2020

End date

December 31, 2020

Comment

The volume of emissions for 2021 has been recalculated without taking into account KazMunayTeniz LLP, since the upstream assets of this company have been sold. Due to the methodology's change, the amount of greenhouse gas emissions for the period 2019-2021 will be recalculated in 2024, and will be reflected in the CDP climate questionnaire for 2023.

Past year 3

Gross global Scope 1 emissions (metric tons CO₂e)

8,890,714.502

Start date

January 1, 2019

End date

December 31, 2019

Comment

The amount of greenhouse gas emissions for 2019 remained unchanged. Due to the methodology's change, the amount of greenhouse gas emissions for the period 2019-2021 will be recalculated in 2024, and will be reflected in the CDP climate questionnaire for 2023.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Location-based Scope 2 emissions for our assets located in Kazakhstan and Georgia are calculated using available national energy production emissions factors. Market-

based Scope 2 emissions for our assets in Romania are calculated using RE-DISS residual mix factors.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO₂e?

Reporting year

Scope 2, location-based

3,278,949.47

Scope 2, market-based (if applicable)

3,217,033.4

Start date

January 1, 2022

End date

December 31, 2022

Comment

In 2022, Scope 2 emissions decreased by 60 thousand tons of CO₂-eq. compared to the previous year. This is due to the fact that a gas turbine power plant reached its full production capacity. As a result the volume of electricity purchases from third-party suppliers at one of the mining assets decreased.

Past year 1

Scope 2, location-based

3,339,396.1

Scope 2, market-based (if applicable)

3,313,408.8

Start date

January 1, 2021

End date

December 31, 2021

Comment

The amount of emissions for 2021 has been recalculated without taking into account KazMunaiTeniz LLP, since the mining assets of this company have been sold.

Past year 2

Scope 2, location-based

3,446,750.05

Scope 2, market-based (if applicable)

3,506,984.9

Start date

January 1, 2020

End date

December 31, 2020

Comment

The amount of emissions for 2021 has been recalculated without taking into account KazMunaiTeniz LLP, since the upstream assets of this company have been sold.

Past year 3

Scope 2, location-based

3,304,832

Scope 2, market-based (if applicable)

3,359,945.3

Start date

January 1, 2019

End date

December 31, 2019

Comment

The amount of greenhouse gas emissions for 2019 remained unchanged

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1, Scope 2, or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source of excluded emissions

Transport .

Scope(s) or Scope 3 category(ies)

Scope 1

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Relevance of market-based Scope 2 emissions from this source

Relevance of Scope 3 emissions from this source

Date of completion of acquisition or merger

Estimated percentage of total Scope 1+2 emissions this excluded source represents

1

Estimated percentage of total Scope 3 emissions this excluded source represents

Explain why this source is excluded

GHG emissions from mobile sources are excluded due to the regulatory requirements of Kazakhstan and EU Emission Trading Schemes. Analysis of data of fuel consumption by the company-owned vehicles allows us to make a conclusion that the GHG emissions from the mobile sources are insignificant in relation to our gross Scope 1 emissions (less than 1%).

Explain how you estimated the percentage of emissions this excluded source represents

Analysis of data of fuel consumption by the company-owned vehicles allows us to make a conclusion that the GHG emissions from the mobile sources are insignificant in relation to our gross Scope 1 emissions (less than 1%).

Source of excluded emissions

GHG emissions other than CO2 in Scope 2.

Scope(s) or Scope 3 category(ies)

Scope 2 (location-based)

Scope 2 (market-based)

Relevance of Scope 1 emissions from this source

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of Scope 3 emissions from this source

Date of completion of acquisition or merger

Estimated percentage of total Scope 1+2 emissions this excluded source represents

Estimated percentage of total Scope 3 emissions this excluded source represents

Explain why this source is excluded

Indirect GHG emissions in CO₂e were estimated without consideration of CH₄ and N₂O contributions due to the limitations associated with emission factors availability.

Explain how you estimated the percentage of emissions this excluded source represents

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Please explain

A very significant range of purchased goods and services for which it is not possible to accurately calculate indirect emissions, as there are no established emission calculation rates from different categories of goods (services) in the framework of national programs.

Capital goods

Evaluation status

Relevant, not yet calculated

Please explain

No data from manufacturers and no nationally established rates for calculating emissions from different categories of goods (services).

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not evaluated

Please explain

Fuel related activities occur only during the operation of vehicles. Greenhouse gas emissions from mobile sources are excluded due to the regulatory requirements of the emissions trading systems of Kazakhstan and the EU. Fuel consumption by mobile sources is insignificant in relation to fuel consumption by stationary sources (less than 1%).

Upstream transportation and distribution

Evaluation status

Not evaluated

Please explain

While GHG emissions from mobile sources are excluded under the regulatory requirements of the Kazakh and EU emissions trading systems, KMG suppliers also do not calculate GHG emissions from transportation.

Waste generated in operations

Evaluation status

Relevant, not yet calculated

Please explain

This can be calculated in the future, when the system of recording baseline data for all subsidiaries and affiliates of KMG will be implemented.

Business travel

Evaluation status

Relevant, not yet calculated

Please explain

This can be calculated in the future, when a system for recording the actual trips made by employees in kilometers, as well as tracking data on indirect emissions from hotel activities, will be implemented.

Employee commuting

Evaluation status

Not evaluated

Please explain

Because GHG emissions from mobile sources are excluded due to the regulatory requirements of the Kazakhstan and EU emissions trading systems, providers of employee home-to-work transportation also do not calculate GHG emissions from transportation.

Upstream leased assets

Evaluation status

Not evaluated

Please explain

Emissions from leased property are not classified in Scope 3 because the leased property is under the operational control of KMG and emissions from it are covered in Scope 1,2.

Downstream transportation and distribution

Evaluation status

Not evaluated

Please explain

Since GHG emissions from mobile sources are excluded by the regulatory requirements of the emissions trading systems of Kazakhstan and the EU, KMG suppliers also do not calculate GHG emissions from transportation.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

Company assumes that emissions associated with the processing of goods sold fall under the "use of goods sold" section of our primary Scope 3 emissions because the use of hydrocarbons involves processing. Emissions from goods processed by subsidiaries and affiliates of KMG are accounted in Scope 1.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

61,759,971.44

Emissions calculation methodology

Other, please specify

The latest GWP values reported in the Fifth IPCC Assessment Report

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

In 2022, KazMunayTeniz LLP was withdrawn from the operational boundaries of KMG. In this regard, the volume of greenhouse gas emissions for 2022 has been recalculated without taking into account KazMunayTeniz LLP. There is a decrease in CO2 emissions compared to last year due to a decrease in the volume of use of products sold. The Scope 3 emissions estimate does not include production data from refineries in Kazakhstan due to the specifics of our business model in Kazakhstan.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

No data is available on the disposal of products purchased from KMG by third-party customers. We have independently evaluated end-of-life emissions from our polymer products. These emissions are less than 4% of our Scope 3 gross emissions.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Emissions from leased property are not classified in Scope 3 because the leased property is under the operational control of KMG and emissions from it are covered in Scope 1, Scope 2.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

KMG assumes that emissions from the retail petrol station chain operated by franchisees are irrelevant compared to our Scope 3 emissions associated with "use of goods sold."

Investments

Evaluation status

Not relevant, explanation provided

Please explain

In terms of greenhouse gas emissions from those JVs in which the share of KMG investments is more than 50%, KMG reported 100% emissions in scope 1, 2, 3. We assume that the emissions associated with our investments have no operational

significance less than than 50% compared to our main area 3 emissions associated with “use of goods sold”.

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

January 1, 2021

End date

December 31, 2021

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

**Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
(metric tons CO2e)**

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

61,713,183.5

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

The volume of greenhouse gas emissions for 2021 has been recalculated without taking into account KazMunayTeniz LLP

Past year 2

Start date

January 1, 2020

End date

December 31, 2020

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

**Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
(metric tons CO2e)**

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

61,943,540.1

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

The volume of greenhouse gas emissions for 2021 has been recalculated without taking into account KazMunayTeniz LLP

Past year 3

Start date

January 1, 2019

End date

December 31, 2019

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

**Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
(metric tons CO2e)**

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

71,698,130.617

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO₂e)

Comment

The amount of greenhouse gas emissions for 2019 remained unchange.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO₂e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.00083

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO₂e)

11,293,469

Metric denominator

unit total revenue

Metric denominator: Unit total

13,589,495,989

Scope 2 figure used

Market-based

% change from previous year

30

Direction of change

Decreased

Reason(s) for change

Change in revenue

Change in methodology

Please explain

The intensity indicator decreased by 30% in the reporting year, as Scope 1+2 emissions in the equivalent of tons of CO₂ decreased due to changes in the Scope 1 methane emissions methodology, reducing Scope 2 emissions. At the same time, total revenue increased.

This indicates an improvement in the intensity indicator.

C-OG6.12

(C-OG6.12) Provide the intensity figures for Scope 1 emissions (metric tons CO₂e) per unit of hydrocarbon category.

Unit of hydrocarbon category (denominator)

Other, please specify

Thousand tonnes of hydrocarbon crude production

Metric tons CO₂e from hydrocarbon category per unit specified

114

% change from previous year

12

Direction of change

Increased

Reason for change

The intensity of emissions increased from 102 tons of CO₂ per thousand tons of produced hydrocarbons in 2021 to 114 tons of CO₂ per thousand tons of produced hydrocarbons in 2022. The increase in the intensity of greenhouse gas emissions is associated with a change in approaches to calculating greenhouse gas emissions, as well as the full capacity of its own gas turbine power plant at one of the mining assets.

Comment

The reported value corresponds to the emission rate data we provide to IOGP. Thus, the emission rate is estimated based on data provided by only seven upstream companies (in the upper segment)

Unit of hydrocarbon category (denominator)

Other, please specify

The reported value corresponds to the emission rate data we provide to IOGP.

Thus, the emission rate is estimated based on data provided by only seven upstream companies (in the upper segment)

Metric tons CO₂e from hydrocarbon category per unit specified

133

% change from previous year

15

Direction of change

Decreased

Reason for change

The intensity of emissions decreased from 157t CO2 equivalent per thousand tons of produced hydrocarbons in 2021 to 133t CO2 equivalent per thousand tons of produced hydrocarbons in 2022. The decrease in the intensity of emissions of tons of CO2 eq is associated with a change in approaches to calculating methane emissions. In the reporting year, more suitable methane emission coefficient were chosen. Since methane has a global warming potential of 25, emissions in equivalent have decreased significantly.

Comment

The reported value corresponds to the emission rate data we provide to IOGP. Thus, the emission rate is estimated based on data provided by only seven upstream companies (in the upper segment).

Unit of hydrocarbon category (denominator)

Other, please specify

Thousand tonnes of processed hydrocarbon crude

Metric tons CO2e from hydrocarbon category per unit specified

236

% change from previous year

5

Direction of change

Increased

Reason for change

The intensity increased compared to the previous year (from 225 to 236) tons of CO2 per thousand tons of refined oil due to changes in the methodology for calculating emissions for refineries (the CO2 emission coefficient was increased, and therefore emissions increased). The calculation is carried out for 3 refineries in Kazakhstan.

Comment

The reported value corresponds to the emission rate data, which we calculate by analogy using IOGP approaches. Therefore, the emission rate is estimated based on data provided by only our three refineries in Kazakhstan.

Unit of hydrocarbon category (denominator)

Thousand barrels of refinery throughput

Metric tons CO₂e from hydrocarbon category per unit specified

32

% change from previous year

7

Direction of change

Increased

Reason for change

The emissions intensity increased from 30 tons of CO₂e per thousand barrels of the actual capacity of our refineries in 2021 to 32 tons of CO₂e per thousand barrels in 2022. The increase is due to a change in the methodology for calculating emissions for refineries (the CO₂ emission coefficient was increased, and therefore emissions also increased). The calculation is carried out for 3 refineries in Kazakhstan.

Comment

Main strategic directions of development energy saving and energy efficiency of the Group KMG companies — modernization of technological equipment, introduction of energy-saving technologies, optimization of generation and consumption of thermal energy, as well as the development of own sources of generation.

C-OG6.13

(C-OG6.13) Report your methane emissions as percentages of natural gas and hydrocarbon production or throughput.

Oil and gas business division

Upstream

Estimated total methane emitted expressed as % of natural gas production or throughput at given division

0.41

Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

0.05

Details of methodology

The reported values are obtained by dividing the total methane emissions of our upstream companies by gas production and hydrocarbon production volumes, respectively. To calculate the indicator, methane emissions and production volumes were given in metric tons. The indicator decreased significantly compared to the previous year, due to a change in the methodology (coefficients) of methane and, as a result a decrease in methane emissions in the Upstream sector.

Oil and gas business division

Downstream

Estimated total methane emitted expressed as % of natural gas production or throughput at given division

Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

Details of methodology

The values presented are obtained by dividing the total methane emissions of our downstream companies by the volume of gas processing and the total volume of hydrocarbon processing, respectively. To calculate the indicator, the volumes of methane emissions and processing were given in metric tons.

In 2022, the coverage of the information provided includes three refineries in Kazakhstan, two refineries in Romania, a bitumen production plant, as well as a gas processing plant.

The indicator decreased significantly compared to the previous year, due to a change in the methodology (coefficients) of methane and, as a result a decrease in methane emissions in the downstream sector.

Oil and gas business division

Midstream

Estimated total methane emitted expressed as % of natural gas production or throughput at given division

0.59

Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

0.02

Details of methodology

The recalculation for the volume of gas transportation was not taken into account in connection with the withdrawal of gas transportation assets from the company's structure in 2021.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	7,551,481.58	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	411,475.77	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	113,478.27	IPCC Fifth Assessment Report (AR5 – 100 year)

C-OG7.1b

(C-OG7.1b) Break down your total gross global Scope 1 emissions from oil and gas value chain production activities by greenhouse gas type.

Emissions category

Combustion (excluding flaring)

Value chain

Upstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

2,276,696.46

Gross Scope 1 methane emissions (metric tons CH4)

299

Total gross Scope 1 emissions (metric tons CO2e)

2,361,407.25

Comment

Emissions relate to all upstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from upstream activities by product type.

In 2022, greenhouse gas emissions from combustion increased by more than 200 thousand tons of CO2, as one of the upstream sector companies had its own gas turbine power plant in nominal operation.

Emissions category

Flaring

Value chain

Upstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

85,111.08

Gross Scope 1 methane emissions (metric tons CH4)

127.97

Total gross Scope 1 emissions (metric tons CO2e)

122,605.825

Comment

Emissions relate to all upstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from upstream activities by product type.

In 2022 emissions from flaring has been reduced by 20% . This is due to the elimination of the inevitable need for combustion at the two oil feilds of upstream asserts.

Emissions category

Venting

Value chain

Upstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

0

Comment

In 2022, there are no emissions associated with the removal of gases.

Emissions category

Fugitives

Value chain

Upstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

1,606.25

Gross Scope 1 methane emissions (metric tons CH4)

9,637.01

Total gross Scope 1 emissions (metric tons CO2e)

271,442.52

Comment

Emissions relate to all upstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from upstream activities by product type. Volatile emissions (in particular methane) in 2022 decreased by almost 3 times compared to the previous year, due to a change in the methodology for calculating methane emissions. Suitable methane emission coefficient were adopted in the reporting year. Since methane has a global warming potential of 25, CO2 equivalent emissions have decreased by 4 times.

Emissions category

Process (feedstock) emissions

Value chain

Upstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

28,987.11

Gross Scope 1 methane emissions (metric tons CH4)

0.08

Total gross Scope 1 emissions (metric tons CO2e)

29,030.64

Comment

Emissions relate to all upstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from upstream activities by product type.

Emissions from contractors' drilling rigs were taken into account in the upstream sector emissions in relation to the requirements of the authorized agencies in the field of environmental protection in 2022. In previous years, these emissions were not included in Scope 1. Therefore, this category of emissions was added this year.

Emissions category

Other (please specify)

Value chain

Upstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

11,847.93

Gross Scope 1 methane emissions (metric tons CH4)

0.64

Total gross Scope 1 emissions (metric tons CO2e)

11,867.18

Comment

Emissions relate to all upstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from upstream activities by product type. Emissions from welding and other minor work were included in this category.

Emissions category

Combustion (excluding flaring)

Value chain

Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

76,197.6

Gross Scope 1 methane emissions (metric tons CH4)

0.36

Total gross Scope 1 emissions (metric tons CO2e)

76,302.52

Comment

Emissions relate to all midstream assets operated by KMG. Emissions from combustion in the transportation category have decreased.

Emissions category

Flaring

Value chain

Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

0

Comment

There are no emissions in this category.

Emissions category

Venting

Value chain

Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

0

Comment

There are no emissions in this category.

Emissions category

Fugitives

Value chain

Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0.003

Gross Scope 1 methane emissions (metric tons CH4)

0.03

Total gross Scope 1 emissions (metric tons CO2e)

0.9

Comment

Emissions relate to all midstream assets operated by KMG. Volatile emissions decreased compared to the previous year due to a change in the methodology for calculating methane emissions. Suitable methane emission coefficients were adopted in the reporting year. Since methane has a global warming potential of 25, CO2 equivalent emissions have decreased by 4 times.

Emissions category

Process (feedstock) emissions

Value chain

Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

0

Comment

There are no emissions in this category.

Emissions category

Other (please specify)

Value chain

Midstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

0

Comment

There are no emissions in this category.

Emissions category

Combustion (excluding flaring)

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

4,011,517.1

Gross Scope 1 methane emissions (metric tons CH4)

10.47

Total gross Scope 1 emissions (metric tons CO2e)

4,013,479

Comment

Emissions relate to all downstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from operations by product.

Emissions from fuel combustion at refineries increased by 140 thousand tons CO2 compared to the previous year due to an increase in company-wide petroleum refining volume. It should be noted that in the reporting year the emission categories were clarified, since last year some of the technical emission sources were attributed to combustion. Currently, all technical emissions not related to fuel combustion are attributed to technical emissions (feedstock processes).

Emissions category

Flaring

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

37,626.67

Gross Scope 1 methane emissions (metric tons CH4)

0.001

Total gross Scope 1 emissions (metric tons CO2e)

37,626.99

Comment

Emissions relate to all downstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from operations by product.

In 2022 CO2 emissions from flaring have hardly changed. Methane emissions (and accordingly in CO2 equivalent) have decreased, due to the change in the methodology for calculating emissions by flares, the new methodology does not provide for the calculation of methane emissions due to its insignificant volume.

Emissions category

Venting

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

0

Comment

There are no emissions in this category.

Emissions category

Fugitives

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

50.31

Gross Scope 1 methane emissions (metric tons CH4)

4,614.64

Total gross Scope 1 emissions (metric tons CO2e)

129,260.12

Comment

Emissions relate to all downstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from operations by product.

Volatile emissions have hardly changed compared to the previous year.

Emissions category

Process (feedstock) emissions

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

1,021,841.03

Gross Scope 1 methane emissions (metric tons CH4)

5.36

Total gross Scope 1 emissions (metric tons CO2e)

1,023,412.6

Comment

Emissions relate to all downstream assets operated by KMG. We cannot disaggregate greenhouse gas emissions from operations by product.

Technological emissions from oil refineries increased by 4 times. This is due to an increase in the volume of oil refining at one of the refineries, as well as due to the fact that in the reporting year clarifications were made in the categories of emissions, since last year some sources of technological emissions were attributed to combustion. Now

all technological emissions not related to fuel combustion are attributed to technological emissions (process feedstock)

Emissions category

Other (please specify)

Value chain

Downstream

Product

Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

0

Total gross Scope 1 emissions (metric tons CO2e)

0

Comment

There were no emissions in this category.

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/area/region.

Country/area/region	Scope 1 emissions (metric tons CO2e)
Kazakhstan	7,133,020.8
Romania	923,221
Georgia	20,193.83

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By activity

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Oil and gas exploration and production activities (upstream)	2,796,353.4

Oil and gas transportation activities (midstream)	76,303.45
Oil and gas refining activities (downstream)	5,203,778.79

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization’s total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Oil and gas production activities (upstream)	2,796,353.4	In the reporting year, CO2- eq emissions decreased significantly in all sectors of value chain due to a change in the methodology for calculating methane emissions, which affected the CO2 equivalent. Suitable methane emission coefficients were adopted in the reporting year. In the upstream sector CO2- eq. emissions decreased by 787 thousand tons of CO2-eq.
Oil and gas production activities (midstream)	76,303.4	In the reporting year, CO2- eq emissions decreased significantly in all sectors of value chain due to a change in the methodology for calculating methane emissions, which affected the CO2 equivalent. Suitable methane emission coefficients were adopted in the reporting year. In the midstream sector CO2- eq. emissions decreased by 95 thousand tons of CO2-eq.
Oil and gas production activities (downstream)	5,203,778.79	In the reporting year, CO2- eq emissions decreased significantly in all sectors of value chain due to a change in the methodology for calculating methane emissions, which affected the CO2 equivalent. Suitable methane emission coefficients were adopted in the reporting year. In the downstream sector CO2- eq. emissions decreased by 1651 thousand tons of CO2-eq.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/area/region.

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Kazakhstan	3,028,780.52	3,020,668.63
Romania	249,298.64	195,494.45

Georgia	870.32	870.32
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C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By activity

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Oil and gas exploration and production activities (upstream)	1,261,013.83	1,252,901.95
Oil and gas transportation activities (midstream)	213,055.68	213,055.68
Oil and gas refining activities (downstream)	1,804,879.96	1,751,075.77

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

Yes

C7.7a

(C7.7a) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.

Subsidiary name

Atyrau Refinery

Primary activity

Oil & gas refining

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

1,650,501.65

Scope 2, location-based emissions (metric tons CO₂e)

395,307.91

Scope 2, market-based emissions (metric tons CO₂e)

395,307.91

Comment

a refinery

Subsidiary name

PetroKazakhstan Oil Products

Primary activity

Oil & gas refining

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

1,420,132.21

Scope 2, location-based emissions (metric tons CO2e)

308,619.41

Scope 2, market-based emissions (metric tons CO2e)

308,619.41

Comment

a refinery

Subsidiary name

Pavlodar Refinery

Primary activity

Oil & gas refining

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

924,142.69

Scope 2, location-based emissions (metric tons CO2e)

835,543.65

Scope 2, market-based emissions (metric tons CO2e)

835,543.65

Comment

a refinery

Subsidiary name

Caspi bitum

Primary activity

Oil & gas refining

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

41,003.51

Scope 2, location-based emissions (metric tons CO2e)

16,110.35

Scope 2, market-based emissions (metric tons CO2e)

16,110.35

Comment

Bitumen Production Plant

Subsidiary name

Kazakhturkmunay

Primary activity

Oil & gas extraction

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

88,263

Scope 2, location-based emissions (metric tons CO₂e)

428.5

Scope 2, market-based emissions (metric tons CO₂e)

428.5

Comment

A company engaged in the extraction of hydrocarbon

Subsidiary name

Kazakhoil Aktobe

Primary activity

Oil & gas extraction

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

135,403.98

Scope 2, location-based emissions (metric tons CO₂e)

73,188.46

Scope 2, market-based emissions (metric tons CO₂e)

73,188.46

Comment

A company engaged in the extraction of hydrocarbon

Subsidiary name

Mangistaumunaigaz

Primary activity

Oil & gas extraction

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

714,397.12

Scope 2, location-based emissions (metric tons CO₂e)

180,783.24

Scope 2, market-based emissions (metric tons CO₂e)

180,783.24

Comment

A company engaged in the extraction of hydrocarbon

Subsidiary name

Embamunaigas

Primary activity

Oil & gas extraction

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

220,368.94

Scope 2, location-based emissions (metric tons CO2e)

98,887.75

Scope 2, market-based emissions (metric tons CO2e)

98,887.75

Comment

A company engaged in the extraction of hydrocarbon

Subsidiary name

Ozenmunaigas

Primary activity

Oil & gas extraction

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

493,104.94

Scope 2, location-based emissions (metric tons CO2e)

460,380.65

Scope 2, market-based emissions (metric tons CO2e)

460,380.65

Comment

A company engaged in the extraction of hydrocarbon

Subsidiary name

JV Kazgermunai

Primary activity

Oil & gas extraction

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

134,943.1

Scope 2, location-based emissions (metric tons CO2e)

115,209.29

Scope 2, market-based emissions (metric tons CO2e)

115,209.29

Comment

A company engaged in the extraction of hydrocarbon

Subsidiary name

Karazhanbasmunai

Primary activity

Oil & gas extraction

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

1,009,873.31

Scope 2, location-based emissions (metric tons CO₂e)

164,658.99

Scope 2, market-based emissions (metric tons CO₂e)

164,658.99

Comment

A company engaged in the extraction of hydrocarbon

Subsidiary name

Kazakh Gas Processing Plant

Primary activity

Oil & gas refining

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

244,777.72

Scope 2, location-based emissions (metric tons CO₂e)

143,840.69

Scope 2, market-based emissions (metric tons CO₂e)

143,840.69

Comment

Gas Processing plant

Subsidiary name

KazTransOil

Primary activity

Oil & gas pipelines & storage

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

56,109.62

Scope 2, location-based emissions (metric tons CO₂e)

212,185.36

Scope 2, market-based emissions (metric tons CO₂e)

212,185.36

Comment

Oil transportation company

Subsidiary name

Vega Refinery

Primary activity

Oil & gas refining

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

41,588

Scope 2, location-based emissions (metric tons CO2e)

3,292.44

Scope 2, market-based emissions (metric tons CO2e)

2,115.99

Comment

oil refinery in Romania

Subsidiary name

Petromidia Refinery

Primary activity

Oil & gas refining

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

881,633

Scope 2, location-based emissions (metric tons CO2e)

246,006.19

Scope 2, market-based emissions (metric tons CO2e)

193,378.46

Comment

oil refinery in Romania

Subsidiary name

Batumi Oil Terminal

Primary activity

Oil & gas pipelines & storage

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

20,193.83

Scope 2, location-based emissions (metric tons CO2e)

870.315

Scope 2, market-based emissions (metric tons CO2e)

870.315

Comment

A company that provides services for transshipment, transportation, forwarding, purchase and sale of oil, petroleum products and gas, as well as products of their processing.

Subsidiary name

Oil Services Company

Primary activity

Other professional services

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO₂e)

0

Scope 2, location-based emissions (metric tons CO₂e)

9,575.33

Scope 2, market-based emissions (metric tons CO₂e)

9,575.33

Comment

The company providing service

Subsidiary name

Ozenmunai services

Primary activity

Other professional services

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

0

Scope 2, location-based emissions (metric tons CO2e)

861.16

Scope 2, market-based emissions (metric tons CO2e)

861.16

Comment

The company providing service services

Subsidiary name

Oil Constraction Company

Primary activity

Other professional services

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

0

Scope 2, location-based emissions (metric tons CO2e)

1,415.31

Scope 2, market-based emissions (metric tons CO2e)

1,451.31

Comment

The company providing service

Subsidiary name

KazmunayGaz corporate center

Primary activity

Asset managers

Select the unique identifier(s) you are able to provide for this subsidiary

No unique identifier

ISIN code – bond

ISIN code – equity

CUSIP number

Ticker symbol

SEDOL code

LEI number

Other unique identifier

Scope 1 emissions (metric tons CO2e)

0

Scope 2, location-based emissions (metric tons CO2e)

11,784.48

Scope 2, market-based emissions (metric tons CO2e)

3,672.59

Comment

Corporate Center of JSC NC KazMunayGas. A business center located in Astana.

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization’s total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Oil and gas production activities (upstream)	1,261,013.83	1,252,901.95	In 2022, Scope 2 emissions decreased by 100 thousand tons of CO2-eq compared to 2021 due to full operation of its own gas turbine power plant at one of the upstream assets
Oil and gas production activities (midstream)	213,055.68	213,055.68	Scope 2 emissions in the midstream sector remained almost unchanged compared to 2021
Oil and gas production activities (downstream)	1,804,879.96	1,751,075.77	In 2022, emissions increased by 50 thousand tons of CO- eq compared to 2021 due to an increase of oil refining volume at one of the refineries

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption				
Other emissions reduction activities	135,000	Decreased	1	Due to the implementation of energy efficiency measures, direct emissions decreased by 135 thousand tons of CO2
Divestment	203,672	Decreased	1.5	Due to the withdrawal of KazMunayTeniz LLP, emissions decreased by 31 thousand tons of CO2 (203,672 tons of CO2-eq)
Acquisitions				
Mergers				
Change in output	459,196	Increased	3.3	In Scope 1 , emissions increased by 459 thousand tons of CO2-eq compared to the previous year due to an increase of oil refining volume at one of the refineries
Change in methodology	2,534,654	Decreased	18	Scope 1 CO2 eq. emissions have decreased in the company as a whole , due to changes in the methodology for calculating methane emissions .In the reporting year, methane coefficients were adopted that are more suitable for our facilities. And since methane has a global warming potential of 25 , CO2 equivalent emissions have significantly

				decreased . (2,534 thousand tons of CO2-eq)
Change in boundary	203,672	Decreased	1.5	Due to KazMunayTeniz LLP alienation , emissions decreased by 31 thousand tons of CO2 (203672 tons of CO2 eq)
Change in physical operating conditions				
Unidentified				
Other	61,759	Decreased	0.5	Scope 2 emissions have been reduced in reporting year by 61 thousand tons of CO2-eq. due to the increase in the share of own electric power generation, and therefore there is no need to purchase electricity from third-party suppliers. In addition, due to the purchase of I-REC certificates, emissions decreased by 8 thousand tons of CO2 eq.

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes

Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)		31,725,025.1	31,725,025.1
Consumption of purchased or acquired electricity		207,055.82	3,942,926.76	4,419,982.6
Consumption of purchased or acquired heat			28,152.7	1,374,277.1
Consumption of purchased or acquired steam			1,374,277.09	1,374,277.1
Consumption of self-generated non-fuel renewable energy		75.73		75.7
Total energy consumption		207,131.5	37,070,381.7	37,277,513.2

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
--	---

Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Other biomass

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Coal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Oil

Heating value

LHV

Total fuel MWh consumed by the organization

44,243

MWh fuel consumed for self-generation of electricity

12,567

MWh fuel consumed for self-generation of heat

29,299

MWh fuel consumed for self-generation of steam

2,377

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Gas

Heating value

LHV

Total fuel MWh consumed by the organization

30,571,162

MWh fuel consumed for self-generation of electricity

8,683,282

MWh fuel consumed for self-generation of heat

12,118,466

MWh fuel consumed for self-generation of steam

9,769,415

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Gas includes all types of gases ; natural gas, associated petroleum gas, refinery gas, LPG, dry gas, fuel gas

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

LHV

Total fuel MWh consumed by the organization

1,109,620

MWh fuel consumed for self-generation of electricity

216,409

MWh fuel consumed for self-generation of heat

732,310

MWh fuel consumed for self-generation of steam

160,900

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Other non-renewable fuel include fuel oil (masut), gasoline, diesel.

Total fuel

Heating value

LHV

Total fuel MWh consumed by the organization

31,725,025

MWh fuel consumed for self-generation of electricity

8,912,258

MWh fuel consumed for self-generation of heat

12,880,075

MWh fuel consumed for self-generation of steam

9,932,692

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	702,721	75	75	75
Heat	94,203	94,203		
Steam	5,535,880	5,535,880		
Cooling				

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Country/area of low-carbon energy consumption

Romania

Sourcing method

Other, please specify

Grid mix of renewable electricity

Energy carrier

Electricity

Low-carbon technology type

Low-carbon energy mix, please specify

solar and wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

187,224

Tracking instrument used

Country/area of origin (generation) of the low-carbon energy or energy attribute

Romania

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

According to the European residual balance data, 43.63% of the energy consumed by our Romanian assets was classified as renewable with the following breakdown: solar - 3.17%, wind - 10.2%, hydroelectric - 12.03%.

Country/area of low-carbon energy consumption

Georgia

Sourcing method

Other, please specify

Acquisition or production of low-carbon thermal, electrical or low-emission electrical energy

Energy carrier

Electricity

Low-carbon technology type

Low-carbon energy mix, please specify
solar and wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

7,986

Tracking instrument used

Country/area of origin (generation) of the low-carbon energy or energy attribute

Georgia

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

According to the IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation (2011), energy factors for river systems are in the range (20-95%) depending on geographical and climatic conditions, technology and productivity.

Country/area of low-carbon energy consumption

Kazakhstan

Sourcing method

Other, please specify

Acquisition or production of low-carbon thermal, electrical or low-emission electrical energy

Energy carrier

Electricity

Low-carbon technology type

Solar

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

11,921

Tracking instrument used

Country/area of origin (generation) of the low-carbon energy or energy attribute

Kazakhstan

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Solar energy from a renewable energy supplier. The RES consumption coefficient is taken as 100%, since this indicator is given only for RES

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area

Kazakhstan

Consumption of purchased electricity (MWh)

20,075.5

Consumption of self-generated electricity (MWh)

75.7

Consumption of purchased heat, steam, and cooling (MWh)

Consumption of self-generated heat, steam, and cooling (MWh)

Total non-fuel energy consumption (MWh) [Auto-calculated]

Country/area

Romania

Consumption of purchased electricity (MWh)

187,224

Consumption of self-generated electricity (MWh)

0

Consumption of purchased heat, steam, and cooling (MWh)

Consumption of self-generated heat, steam, and cooling (MWh)

Total non-fuel energy consumption (MWh) [Auto-calculated]

Country/area

Georgia

Consumption of purchased electricity (MWh)

7,986.4

Consumption of self-generated electricity (MWh)

0

Consumption of purchased heat, steam, and cooling (MWh)

Consumption of self-generated heat, steam, and cooling (MWh)

Total non-fuel energy consumption (MWh) [Auto-calculated]

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Waste

Metric value

419

Metric numerator

thousand tonnes

Metric denominator (intensity metric only)

% change from previous year

1.5

Direction of change

Increased

Please explain

For KMG group, the total mass of waste handled in 2022 amounted to 419 thousand tons, of which 382 thousand tons were classified as "hazardous", and 37 thousand tons were classified as "non-hazardous".

95% of the newly formed waste were utilized and recycled.

693.7 thousand tons of historical waste were utilized, sites of their disposal sites were recultivated.

C-OG9.2a

(C-OG9.2a) Disclose your net liquid and gas hydrocarbon production (total of subsidiaries and equity-accounted entities).

	In-year net production	Comment
Crude oil and condensate, million barrels	139.2	The crude oil production volumes covered 8 upstream assets under KMG operational control
Natural gas liquids, million barrels		
Oil sands, million barrels (includes bitumen and synthetic crude)		
Natural gas, billion cubic feet	108.6	The natural gas production volumes covered 8 upstream assets under KMG operational control

C-OG9.2b

(C-OG9.2b) Explain which listing requirements or other methodologies you use to report reserves data. If your organization cannot provide data due to legal restrictions on reporting reserves figures in certain countries/areas, please explain this.

According to the reserves audit report prepared by the international independent consulting firm DeGolyer and MacNaughton in accordance with the PRMS international standard, KMG's proved plus probable hydrocarbon reserves (2P) were 707 mln toe (5,478 mln boe) as at 31 December 2022. 2P reserves increased by 9% year-on-year. The increase is mainly attributable to comprehensive initiatives in hydrocarbon reserves management, including recalculations of the reserves of the UVS of the Kalamkas fields, etc., an increase in the share of the Kashagan field from 8.44% to 16.88% (on September 15, 2022, 50% of the share of KMG Kashagan BV was repurchased from Samruk-Kazyna JSC, as well as by improving macroeconomic parameters (increase in oil prices).

C-OG9.2c

(C-OG9.2c) Disclose your estimated total net reserves and resource base (million boe), including the total associated with subsidiaries and equity-accounted entities.

	Estimated total net proved + probable reserves (2P) (million BOE)	Estimated total net proved + probable + possible reserves (3P) (million BOE)	Estimated net total resource base (million BOE)	Comment
Row 1	5,479	6,294	9,831.4	Net reserves are defined as that portion of gross reserves that is assigned to KMG's retained interest after deducting all interest owned by others and interest that is not owned by KMG but which KMG

				controls
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C-OG9.2d

(C-OG9.2d) Provide an indicative percentage split for 2P, 3P reserves, and total resource base by hydrocarbon categories.

	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)	Comment
Crude oil/ condensate/ natural gas liquids	81	81	70	
Natural gas	15	15	28	
Oil sands (includes bitumen and synthetic crude)	0	0	0	

C-OG9.2e

(C-OG9.2e) Provide an indicative percentage split for production, 1P, 2P, 3P reserves, and total resource base by development types.

Development type

Onshore

In-year net production (%)

91

Net proved reserves (1P) (%)

76

Net proved + probable reserves (2P) (%)

69

Net proved + probable + possible reserves (3P) (%)

72

Net total resource base (%)

77

Comment

Development type

Shallow-water

In-year net production (%)

9

Net proved reserves (1P) (%)

24

Net proved + probable reserves (2P) (%)

31

Net proved + probable + possible reserves (3P) (%)

28

Net total resource base (%)

23

Comment

This indicator takes into account the Kashagan B.V. fields.

C-OG9.3a

(C-OG9.3a) Disclose your total refinery throughput capacity in the reporting year in thousand barrels per day.

Total refinery throughput capacity (Thousand barrels per day)	
Capacity	429

C-OG9.3b

(C-OG9.3b) Disclose feedstocks processed in the reporting year in million barrels per year.

	Throughput (Million barrels)	Comment
Oil	124.6	
Other feedstocks	5,108	data on other feedstocks are presented for natural gas
Total	5,232	

C-OG9.3c

(C-OG9.3c) Are you able to break down your refinery products and net production?

Yes

C-OG9.3d

(C-OG9.3d) Disclose your refinery products and net production in the reporting year in million barrels per year.

Product produced	Refinery net production (Million barrels) *not including products used/consumed on site
Liquified petroleum gas	8.66
Gasolines	46.3
Kerosenes	4.86
Fuel oils	21.5
Asphalt and tar	2.75
Petroleum coke	1.81
Still gas	1.83
Other, please specify Benzene	0.07
Other, please specify Paraxylene	0.56
Other, please specify heating oil	0.13
Other, please specify Vacuum gasoil	1.85
Other, please specify Technical (industrial) sulfur	0.88
Diesel fuels	54.92
Other, please specify bitumen	2.41
Other, please specify Sales gas	4,973.9
Other, please specify aviation fuel	2.48
Other, please specify pentane-hexane fraction	0.4
Other, please specify hydrocarbon solvent	0.01
Other, please specify propylene	0.9

C-OG9.3e

(C-OG9.3e) Please disclose your chemicals production in the reporting year in thousand metric tons.

Product	Production, Thousand metric tons	Capacity, Thousand metric tons
Other, please specify benzene	9.3	133
Other, please specify PP (polypropylene)	118.2	560
Other, please specify propylen	125.5	80
Other, please specify LDPE	46.6	60

C-OG9.5a/C-CO9.5a

(C-OG9.5a/C-CO9.5a) Break down, by fossil fuel expansion activity, your organization's CAPEX in the reporting year and CAPEX planned over the next 5 years.

	CAPEX in the reporting year for this expansion activity (unit currency as selected in C0.4)	CAPEX in the reporting year for this expansion activity as % of total CAPEX in the reporting year	CAPEX planned over the next 5 years for this expansion activity as % of total CAPEX planned over the next 5 years	Explain your CAPEX calculations, including any assumptions
Exploration of new oil fields	3,000,000	0.27	3.2	The figure for exploration new fields is indicated for both oil and gas fields. Separate accounting is not conducted.
Exploration of new natural gas fields				
Expansion of existing oil fields	10,000,000	0.9	2.2	The figure for expansion of existing fields is indicated for both new oil and gas fields. Separate accounting is not

				conducted.
Expansion of existing natural gas fields				

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	<p>Hydrogen energy KMG established the Department for Alternative Energy (former- Hydrogen Energy Competence Center) in 2022 (on the basis of KMG Engineering LLP). Currently, the Advisory consulting company, with the participation of the KMG Hydrogen Energy Competence Center, has completed work on a country market research and analysis of the development potential of low-carbon hydrogen energy in Kazakhstan. Within the framework of this work, as a case-stage and in-depth case study, an assessment of the potential of blue hydrogen production at the Pavlodar Petrochemical Plant was carried out, which includes a proposal to modernize the hydrogen production plant.</p> <p>Renewables KMG has started developing a feasibility study and studying the wind potential in the Zhambyl region, in which, together with Total Eren S.A., it is planned to build a 1000 MW wind farm with an energy storage system. KMG is carrying out similar work on the construction of a 120 MW hybrid plant (sun +wind) in the Mangystau region together with Eni.</p>

C-CO9.6a/C-EU9.6a/C-OG9.6a

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (unit	Average % of total R&D investment planned over the	Explain how your R&D investment in this technology area is aligned with your climate commitments

			currency as selected in C0.4) (optional)	next 5 years	and/or climate transition plan
Energy efficiency in transport	Applied research and development				CNG filling station construction project in the western region of Kazakhstan is ultimately aimed at the promotion of natural gas use as an alternative transportation fuel. With the expansion of CNG filling station network we expect more customers to convert their vehicles to use more affordable and eco-friendly CNG instead of conventional fuels such as gasoline or diesel. Eco-fuel is widely sold in our filling stations in Europe. Moreover, we have introduced the EV charging station one of the filling stations in Romania where free charging service is available to all customers who own electric or hybrid vehicles
Carbon capture, utilization, and storage (CCUS)	Applied research and development	20	338,810		In 2021, KMG began work on the development and implementation of a pilot carbon capture, utilization and storage (CCUS) project and determination of the potential of CO2 injection to increase the oil recovery of depleted oil reservoirs, which will allow in the medium term until 2031: 1. Reduce greenhouse

				<p>gas emissions at KMG's facilities by capturing and injecting into depleted oil reservoirs or aquifers.</p> <p>2. to test the technology (the results for the formation of the legislative and permitting framework of the Republic of Kazakhstan to implement projects for carbon capture, utilization, storage (CCUS) and their subsequent scaling).</p> <p>At the present KMG completed the research and the technical and economic analysis aimed at assessing the technical potential and economic feasibility of the pilot project. In particularly:</p> <ul style="list-style-type: none"> - the Company carried out the screening of concentrated sources of CO₂ emissions in Atyrau and Mangystau regions; - search for available reservoirs (traps) located within a radius of up to 100 km from concentrated sources and corresponding to the requirements of CO₂ disposal has been performed; - the search for available reservoirs (traps) located within a radius of up to 100 km from concentrated sources and meeting the minimum requirements for CO₂ disposal was carried out;
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					<ul style="list-style-type: none"> - in relation to sources of CO2 emissions, groups of oil fields were identified that meet the criteria for oil injection in order to increase the oil recovery coefficient; - the optimal location of the project implementation has been determined; - according to the oil fields of the selected location, work is being completed on the calculation of profiles for the oil recovery coefficient, considering the level of oil miscibility, reservoir pick-up, etc. - a conceptual design (composition and location of the main equipment) of the ground infrastructure is being developed and an enlarged assessment of capital costs is being carried out (+50%/-20%). After the completion of this stage of work (the third quarter of 2023), KMG plans to consider the possibility of implementing a CCUS pilot project at the Upstream block Scientific and technical council and put this question to the Scientific and technical council of the Fund with subsequent inclusion in the list of R&D projects.
Hydrogen	Applied research and		363,582		In 2022 the Department for Alternative Energy

	development			<p>was established on the basis of KMG Engineering LLP, which will be a research hub / center of search for green fuels (including hydrogen and chemical compounds from hydrogen), whose development will significantly expand the scientific and production potential of both the company and the country, will contribute to increased technological growth and accelerate the formation of market foundations of hydrogen economy and become an investment in training of domestic staff.</p> <p>Establishment of the Department for Alternative Energy enables scientists and researchers from universities and research institutes to work together to implement projects for production, storage, transportation, and use of hydrogen.</p> <p>The work on the country market research and analysis of the development potential of low-carbon hydrogen energy in Kazakhstan has been completed. Within the framework of this work, as a case-stage and in-depth case study, an assessment of the potential of blue hydrogen production at the Pavlodar</p>
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					Petrochemical Plant was carried out, which includes a proposal to modernize the hydrogen production plant.
Other, please specify Smart system	Applied research and development				<p>Today, digital technologies are permeating all sectors of the economy, offering fundamental improvements in efficiency and safety. The use of digital technologies contributes to:</p> <ul style="list-style-type: none"> • reduction of capital and operating expenses; • improved profitability amid volatile oil prices; • increasing efficiency, including through data analysis; • predicting failures; • ensuring safety at work. <p>Given the growing relevance of digitalization in the world, in order to ensure the country's competitiveness, a state program is being implemented in Kazakhstan "Digital Kazakhstan". Within the framework of the Digital Kazakhstan program of the KMG group of companies, the Smart Field project is being implemented. The Smart field project is an automated oil and gas field management system that</p>

					<p>allows achieving maximum efficiency by integrating isolated systems into a single information system. The production monitoring system allows to respond to technological failures timely and appropriately, as well as to make decisions on well intervention and workover based on the results of costbenefit analysis. Since its implementation, the project allowed to automate production processes, provided additional oil production and significantly improved the energy efficiency performance. Additionally, we also aim to reduce carbon footprint by introducing renewable energy sources at our smart fields. We have already deployed solar panels on one of our fields to support the monitoring, measurement and lighting systems. The payback period of smart field projects is 8 years.</p>
Other, please specify Methane detection and reduction	Applied research and development				<p>KMG collaborates with Carbon Limits, USAID, and UNDP to research best methods for mitigating methane leakage.</p>

					Pilot projects on the detection and direct measurement of methane leaks at production facilities of KMG subsidiaries are implemented within the program on reduction of methane emissions. KMG expects substantial financial savings in case of full commercialisation of those projects in our production facilities.
Other, please specify Other energy efficiency measures in the oil and gas value chain	Applied research and development				Costs consider works for replacing outdated technological equipment at trunk pipeline sections.

C-OG9.7

(C-OG9.7) Disclose the breakeven price (US\$/BOE) required for cash neutrality during the reporting year, i.e. where cash flow from operations covers CAPEX and dividends paid/ share buybacks.

36.5

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

 Verification stat KMG_eng.pdf

Page/ section reference

Verification statement № KZ.11002300.00.00.00031, 2023, June 21, page 1

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

 Verification stat KMG_eng.pdf

Page/ section reference

Verification statement № KZ.11002300.00.00.00031, 2023, June 21, page 1

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

Page/ section reference

Verification statement № KZ.11002300.00.00.00031, 2023, June 21, page 1

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Use of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

 Verification stat KMG_eng.pdf

Page/section reference

Verification statement № KZ.11002300.00.00.00031, 2023, June 21, page 1

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.2


(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?




Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

 Verification stat KMG_eng.pdf

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C1. Governance	Other, please specify corporate documents , historical environmental information	ISAE 3000 standad "Assurance Engagements Other than Audits or Reviews of Historical Financial Information"	This module was chosen due to the fact that KMG strives to create best practices for building climate management business processes, as the success of our climate initiatives depends on it. At the same time, KMG plans to verify the entire CDP questionnaire in the future Verification will be carried out annually.  1
C2. Risks and	Other, please	ISAE 3000 standad	The energy transition and climate

opportunities	specify corporate documents , risk management process	"Assurance Engagements Other than Audits or Reviews of Historical Financial Information"	change create serious challenges and opportunities for the Company. Their correct identification and development of measures to mitigate risks and increase their capabilities are the key to the sustainability of KMG. In this regard, this section is subject to verification in order to attract third-party organizations and evaluate the correctness of the solutions we have chosen. At the same time, KMG plans to verify the entire CDP questionnaire in the future. Verification will be carried out annually.  1
C3. Business strategy	Other, please specify corporate documents , historical environmental information	ISAE 3000 standad "Assurance Engagements Other than Audits or Reviews of Historical Financial Information"	In 2021 KMG developed and approved its Low-Carbon Development Program. in 2022 the company has developed a detailed plan for its implementation. In this regard, this module has been selected for verification in order to determine whether our documents meet our goals. Verification will be carried out annually.  1
C4. Targets and performance	Other, please specify corporate documents , historical environmental information	ISAE 3000 standad "Assurance Engagements Other than Audits or Reviews of Historical Financial Information"	KMG verified this section because the Company intended to assess the validity of the selected goals and objectives for compliance with the Company's climate policy. Verification will be carried out annually.  1
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	ISO 14064-3:2019/ ST RK ISO 14064-3:2019 standard "Greenhouse gases - Part 3: Specification and guidance for the	In accordance with European and national legislation, each subsidiary carries out a separate verification of the annual emissions inventory with the involvement of a third party. The verified inventories for each individual

		verification and validation of greenhouse gas statements"	subsidiaries and affiliates cover 100% of KMG NC JSC's emissions. While preparing the consolidated report, the initial information from subsidiaries and affiliates, summary calculations of consolidated data, application of GWP factors adopted in the V assessment report of the IPCC and calculations of coverage Scopes 2 and 3 are verified 📎 ₁
C6. Emissions data	Year on year change in emissions (Scope 3)	ISO 14064-3:2019/ ST RK ISO 14064-3:2019 standard "Greenhouse gases - Part 3: Specification and guidance for the verification and validation of greenhouse gas statements"	In accordance with European and national legislation, each subsidiary carries out a separate verification of the annual emissions inventory with the involvement of a third party. The verified inventories for each individual subsidiaries and affiliates cover 100% of KMG NC JSC's emissions. While preparing the consolidated report, the initial information from subsidiaries and affiliates, summary calculations of consolidated data, application of GWP factors adopted in the V assessment report of the IPCC and calculations of coverage Scopes 2 and 3 are verified 📎 ₁

📎₁ Verification stat KMG_eng.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

Kazakhstan ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

100

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

661,867

Allowances purchased

266,000

Verified Scope 1 emissions in metric tons CO₂e

923,221

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Facilities we own and operate

Comment

Information is provided on refineries located in Romania which received 661,867 quotas according to the EU ETS schem but emissions amounted to 923,221 tons of CO₂. So 266,000 additional quotas were purchased.

Kazakhstan ETS

% of Scope 1 emissions covered by the ETS

99.7

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

6,959,970

Allowances purchased

217,756

Verified Scope 1 emissions in metric tons CO₂e

6,608,172

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Facilities we own and operate

Comment

Quotas for plant operators were allocated for a period of 1 years for the period of validity of the National Plan, 12 subsidiaries and affiliates of KMG are included in the quota system of the Republic of Kazakhstan. Data on allocated quotas for 2022 in this section is presented in tons of CO₂ per year, in accordance with the National Quota Allocation Plan for 2022. Some subsidiaries and affiliates received in 2023 additional quotas from the government on a free basis in the amount due to an increase in production capacity and the launch of new stationary sources. Subsidiaries and affiliates are forecasting a deficit / surplus of quotas based on the results of the National Quota Allocation Plan. In 2022, according to the National Quota Allocation Plan 12 subsidiaries and affiliates of KMG received 6,959,970 tons of CO₂ quotas from the government on a free basis. 6,608,172 tons of CO₂ were verified. According to the results of 2022, 217,256 tons of CO₂ additional quotas were received in 2023.

In addition, Kaztransoil JSC will receive 27,967 tons of CO₂ at free basis. It is planned to purchase an additional 217,756 quotas.

Also a number of subsidiaries and affiliates are planning to sell surplus quotas for the reporting year.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

KMG actively monitors the current legislation on carbon regulation, as well as the trends of its tightening. To reduce the risks associated with carbon regulation, KMG's climate strategy is represented by a number of directions:

1. GHG emission reduction by improving the Company's energy efficiency, developing RES and setting its offset policy;
2. GHG management improvement through introducing the Company's own emission monitoring and inventory system, implementation of the corporate GHG cadastre;
3. Consultations with authorized government bodies and business associations on possible changes to the law and the development of adaptive measures;

4. Studying opportunities to develop new low-carbon products and services to keep the Company competitive.

The development and implementation of the corporate system of monitoring and inventory of greenhouse gas emissions will allow to automate the calculations, make their forecasts and take objective measures to reduce, so as not to exceed the issued allowances.

As part of the ongoing consultations, KMG expects that in the future the Government of the Republic of Kazakhstan will regulate methane emissions. To be prepared for this challenge, KMG has planned to implement an LDAR system. Based on the pace of tightening of state regulation of greenhouse gases, different scenarios for the company's development are being developed.

In addition, given the goal of the Republic of Kazakhstan to achieve carbon neutrality, as well as the desire of world markets to purchase products with a low carbon footprint, KMG is engaged in research on the application of CCUS in Kazakhstan. A center of competence for hydrogen energy has also been formed. The possibility of biofuel production for transport is being studied.

Apart from the implementation of the Action Plan of the Low-Carbon Development Program, KazMunaiGas is also elaborating other aspects of the internal carbon policy, in particular the use of internal carbon pricing mechanisms.

in 2022, modeling of the carbon footprint of projects, as well as related financial aspects, including estimated costs and revenues from participation in Kazakhstan ETS and potential revenues from the implementation of offset projects, became an obligatory part of a comprehensive feasibility study of new capital projects. To evaluate the financial aspects of projects, a shadow carbon price is used, which is calculated and predicted in accordance with the price of quotas within the framework of Kazakhstan ETS. This assessment allows us to support the long-term formation of a portfolio of assets that contributes to achieving the goal of reducing the company's carbon footprint, as well as to assess the costs and sustainability of projects to external carbon regulation.

Besides to the mandatory use of a shadow price when evaluating projects, in 2022 KazMunaiGas developed and approved an Internal Carbon Pricing Program that describes conceptual approaches to the implementation of internal carbon payments and the creation of the company's Carbon Fund. These measures are being considered to further encourage subsidiaries and dependent organizations to reduce greenhouse gas emissions, as well as to form an additional source of financing for low-carbon projects. Since there is no such experience in Kazakhstan, in 2023 a detailed development of a mechanism for the introduction of internal carbon collection and the creation of a Carbon Fund is expected, taking into account compliance with current tax legislation, internal regulations of the company and the procedure for interaction with other stakeholders for enterprises that are covered by the Internal Carbon Pricing Program.

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Type of internal carbon price

Shadow price

How the price is determined

Alignment with the price of allowances under an Emissions Trading Scheme

Objective(s) for implementing this internal carbon price

Drive low-carbon investment

Navigate GHG regulations

Stakeholder expectations

Stress test investments

Scope(s) covered

Scope 1

Pricing approach used – spatial variance

Uniform

Pricing approach used – temporal variance

Evolutionary

Indicate how you expect the price to change over time

Scenarios of changes in the shadow price level are based on KMG's forecasts for further changes in quotas prices in Kazakhstan ETS. The reduction of free quotas issued under the National Plan the total carbon budget of Kazakhstan, the inflation and exchange rate are taken into account. As part of the current National Quota Allocation Plan for 2022-2025, an annual reduction in the volume of free quotas is provided for by 1.5%. KMG assumes that in order to achieve of Kazakhstan's NDC goals by 2030, within the framework of coming National Plan from 2026 the reduction will exceed 6% annually. It means covering 75% of companies' emissions with quotas by 2030. Annual inflation is estimated at 6-10%. The expected prices for carbon quotas will be: 3.16\$ by 2026, 10.53\$ by 2030, 19 \$by 2040, 43.2\$ by 2050. Due to the fact that further plans to reduce the volume of free quotas after 2025 have not been approved these indicators are dynamic and subject to revision as the data is updated.

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)

1.05

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)

1.05

Business decision-making processes this internal carbon price is applied to
Capital expenditure

Mandatory enforcement of this internal carbon price within these business decision-making processes

Yes, for all decision-making processes

Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan

The use of a shadow price when evaluating capital investments in new projects and acquisitions helps the company to form a more stable portfolio of assets to external carbon regulation, as well as to invest in assets that will meet KazMunayGas' goal of reducing greenhouse gas emissions by 15% by 2031.

For instance, in 2022, the possibility of transfer to trust management (operational control) was considered KazMunayGas of the gas turbine power plant "Karabatan". During the review of the project within the framework of a comprehensive technical and economic assessment, one of the mandatory conditions of which is now the assessment of the carbon footprint of the project and financial aspects related to carbon regulation, it was revealed that the company's costs for compliance with carbon regulation will amount to more than 44 billion tenge (95.65 million US dollars). As a result, the company abandoned the project. The reverse example, when taking into account the shadow carbon price allowed to increase the profitability of low-carbon projects was the evaluation of the project for the construction of the Mirny wind power plant with a capacity of 1 GW and a hybrid power plant (solar + wind + gas) in the Mangystau region with a capacity of 120 MW. Both projects, in addition to the profit from generating clean electricity, will also generate income from the sale of offset units, as well as ensure the consumption of KMG's nearby subsidiaries with clean energy, which will reduce Scope 2 emissions in the company as a whole.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers/clients

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Other, please specify

Other, please specify (In the Low-Carbon Development Program, KMG has identified the necessity of implementing sustainable procurement to reduce emissions in Scope 3. In this regard, it is planned to explore the suppliers' activities.)

% of suppliers by number

0

% total procurement spend (direct and indirect)

0

% of supplier-related Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

In 2022, the Company pledged funds for services to develop a methodology for the inventory of greenhouse gas emissions at the Scope 3 level in 12 categories. Particularly, within the framework of these works KMG will carry out a comparative analysis of the disclosure of information on indirect non-energy emissions of Scope 3 by comparable and competitors. Also, the Company will carry out an inventory, analysis and evaluation of indirect emissions of Scope 3 in the KMG group of companies. In 2023, this work has started

Impact of engagement, including measures of success

In the future, according to the Low-Carbon Development Program, the Company will establish minimum requirements for energy indicators for Goods, Works and Services and carbon footprint requirements. This will encourage KMG suppliers to reduce their emissions.

Comment

KMG plans to develop and approve a document on attracting suppliers that meet the greenhouse gas emission targets of KMG's low-carbon development program for the period 2022-2031. Further, we plan to report on the progress of greenhouse gas emissions in the company's supply chain.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Education/information sharing

Run an engagement campaign to education customers about your climate change performance and strategy

% of customers by number

0

% of customer - related Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

KMG plans to collect data on our clients and use it to calculate out clients' carbon footprint.

Also, we plan to provide measures to reduce the carbon intensity of our products, including the possibility of providing new low-carbon products (renewable energy, CCUS, green or blue hydrogen, etc.).

Impact of engagement, including measures of success

Increase of low-carbon products consumption including green electricity. KMG will contribute to the development of the national renewable energy generation providing around 11% of total RES installed capacity in Kazakhstan by 2031.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

No, but we plan to introduce climate-related requirements within the next two years

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan

In order to ensure a system approach in climate change strategy, KMG has developed and approved Low-Carbon Development Programme until 2031, which defines a unified decarbonization framework for the Company as an integral component of corporate governance.

The key objective of the Programme is to identify KMG's climate ambitions, systematise the main carbon footprint reduction approaches and measures, including, inter alia:

- (i) Analysis of available potential and identification of KMG's climate goals.
- (ii) Identification of key areas of the company's decarbonisation development and measures to achieve the goals.
- (iii) Capacity-building and awareness-raising.

Timely and effective implementation of the Programme will require a monitoring and coordinating body, which will, among other things, be charged with the duties to coordinate climate change activities that are consistent with the Programme, to provide support to the SDEs, to check KMG's investment projects for compliance with the decarbonisation and sustainable development policy. Having said that, by the decision of the Board of Directors dated December 9, 2021, changes were made to the structure of the central office of JSC NC "KazMunayGas" and the Low-Carbon Development Department was created.

In order to determine specific measures to achieve the target indicators of the Program, the KMG Low-Carbon Development Department, together with the structural divisions of KMG and subsidiaries and affiliates, plans to develop an Action Plan for the implementation of the Program in 2022. For the purpose of overall coordination of these activities, working groups will be formed at the level of SDEs with the involvement of all interested units (approved by orders of the first heads of SDEs).

Low-carbon development issues are included in the updated KazMunayGas Development Strategy for 2022-2031 (Strategic goal-4 "Sustainable development and progressive reduction of the carbon intensity of production"), and are also reflected in the KPIs of members of the management board and SDEs covered within the scope of the Program.

In 2022 KMG planned to initiate financial disclosure related to climate change in accordance with the recommendations of the TCFD. In 2023 this work has started.

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Development of Strategy of the Republic of Kazakhstan to achieve carbon neutrality until 2060.

Category of policy, law, or regulation that may impact the climate

Climate change adaptation

Focus area of policy, law, or regulation that may impact the climate

International agreement related to climate change adaptation

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

Kazakhstan

Your organization's position on the policy, law, or regulation

Support with major exceptions

Description of engagement with policy makers

KMG participated in the working group to develop a draft of the Strategy to achieve carbon neutrality of the Republic of Kazakhstan until 2060, sent its comments and suggestions for the development of the oil & gas industry to the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan, Ministry of Energy of the Republic of Kazakhstan and business associations representing the interests of KMG, while taking into account its own goals for low-carbon development.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

KMG suggested keeping the goal of reducing greenhouse gas emissions by 2030 from the level of emissions in 1990 at 15%, instead of 25%, suggested by the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan. As a result of the international conference "Ways to achieve the goals of the Paris Agreement and the carbon neutrality of Kazakhstan," it was decided to finalize the draft Doctrine (Strategy) to achieve carbon neutrality of the Republic of Kazakhstan until 2060, particularly taking into account the proposals of KMG.

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

The strategy for achieving carbon neutrality until 2060 was approved by Presidential Decree in February 2023. The strategy has been developed taking into account global climate trends and in compliance with international obligations and takes into account the need to adapt Kazakhstan's economy to global climate trends, such as the introduction of a mechanism for cross-border carbon regulation (MTG), the dissemination of ESG principles, the promotion and attraction of "green" investments, energy-efficient production, electrification and others.

According to the Strategy, the oil and gas industry, whose emissions account for 2.7% of national emissions, will be reduced by reducing methane leaks, using more energy-efficient technologies and improving production processes.

JSC NC "KazMunayGas" in 2021 approved a low-carbon Development Program, the main goal of which is to reduce emissions by 15% by 2031 from the level of 2019.

Specify the policy, law, or regulation on which your organization is engaging with policy makers

National Carbon Plan 2022-2025

Category of policy, law, or regulation that may impact the climate

Climate change adaptation

Focus area of policy, law, or regulation that may impact the climate

Other, please specify
Emissions Trading System

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

Kazakhstan

Your organization's position on the policy, law, or regulation

Support with major exceptions

Description of engagement with policy makers

Regarding the impact of the draft National Carbon Plan 2022-2025, KMG provided an official position to the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan on the need for revision of the National Plan. Working meetings were also held with the supervising Vice-Minister and the Minister on this issue. In addition, KMG sent clarifications with financial calculations on the costs of carbon regulation to the Ministry of Energy of the Republic of Kazakhstan with a request to support the Company's position. Also, KMG's position was sent to business associations representing KMG's interests to form the industry position.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

KMG disagreed with the proposal of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan to reduce the amount of carbon credits in 2022 by 26% compared to 2021. As arguments KMG noted that the national legislation and planning process of large companies do not allow the possibility of implementing large capital projects in one year. As a result, sharp reductions in credits would push up the price of carbon, but would not provide real emission reductions. KMG has presented its Low-Carbon Development Program, which involves significant investment in decarbonization until 2026. In this regard, in order to reduce the financial burden from the implementation of the Program and the purchase of credits, KMG proposed to keep the reduction factor at 1.5% from the previous year, as it is prescribed in the Environmental Code of the Republic of Kazakhstan. This proposal was supported by the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan.

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

Specify the policy, law, or regulation on which your organization is engaging with policy makers

The Law of the Republic of Kazakhstan "On Support of the Use of Renewable Energy Sources"

Category of policy, law, or regulation that may impact the climate

Low-carbon products and services

Focus area of policy, law, or regulation that may impact the climate

Electricity grid access for renewables

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

Kazakhstan

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

KMG participated in the discussions as a member of the working group under the auspices of the Ministry of Energy of the Republic of Kazakhstan.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

KMG developed and initiated different approaches how to improve corporate PPA mechanism to support new RES projects.

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

International Association of Oil and Gas Producers (IOGP)

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

IOGP actively supports the enhancement of the industry's performance on minimising methane emissions from upstream oil and gas production, including flaring and venting. Since May 2018, IOGP has been a Supporting Organisation to the Methane Guiding Principles. Their Environmental Performance Indicators Report, which presents methane emissions per region, contributes to the improvement of accuracy and transparency. KMG use provided information for comparison with benchmarks on GHG emissions reductions.

Over the years of membership in IOGP, KMG has studied and used international best practices and best practices of IOGP, which helped to improve the performance and

overall management system of KMG in the field of Fire safety, occupational safety and the environment, as well as increased the capabilities and rating of KMG at the international level.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

24,105

Describe the aim of your organization's funding

We aim to study best energy transition practices among oil & gas companies to use in our strategy.

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Caspian Environmental Protection Initiative «CEPI»

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

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.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Other, please specify

The National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken"

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

Membership in the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" in accordance with the Law of the Republic of Kazakhstan "On the National Chamber of Entrepreneurs of the Republic of Kazakhstan" is mandatory for all Kazakh business entities. At the same time, the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" is bound to represent the position of its members, including KMG.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

7,000

Describe the aim of your organization's funding

Membership fees are mandatory in accordance with the Law of the Republic of Kazakhstan "On the National Chamber of Entrepreneurs of the Republic of Kazakhstan"

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Other, please specify

ASSOCIATION OF LEGAL ENTITIES "KAZAKHSTAN ASSOCIATION OF OIL-GAS AND ENERGY SECTOR ORGANIZATIONS "KAZENERGY"

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

KAZENERGY Association unites more than 80 major oil & gas and energy sector companies of Kazakhstan. Closely interacting with state bodies, business representatives and public structures, it promotes sustainable development of the oil & gas and energy complexes of the Republic of Kazakhstan.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

35,000

Describe the aim of your organization's funding

Keeping KMG informed of legislative changes in progress and representing KMG's position in the dialogue with state bodies

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Other, please specify

Association of Legal Entities «RES Association «Qazaq Green»

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

Association is a non-profit organisation, promoting renewable energy in Kazakhstan and uniting investors, developers, equipment manufacturers, international financial institutions and universities. The Qazaq Green Association provides KMG qualified support on the implementation of RES projects, promotion our interests, obtaining up-to-date information on Kazakhstan RES legal framework, making proposals to government bodies in order to update current regulation, as well as obtaining information and analytical support.

Association is accredited by the Ministry of Energy of the Republic of Kazakhstan, the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan, National Chamber of Entrepreneurs of the Republic of Kazakhstan 'Atameken' and considered as one of the key expert centers for renewable energy development in Kazakhstan for both government agencies and the business community.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Kazakhstan Association of Regional Environmental Initiatives "Ecojer"

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

KMG Group of Companies joined to the Kazakhstan Association of Regional Environmental Initiatives "Ecojer" in 2021. The purpose of the Association is to consolidate the business community and civil society to protect common interests in the field of environmental protection. The Association strives to achieve a balance between the directions of state policy, the interests of the public and the needs of economic development.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

10,869

Describe the aim of your organization's funding

Keeping KMG informed of legislative changes in progress of environmental protection activities – taking into account a balanced approach between the directions of state policy, the interested public and the need to develop economic potential.

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In voluntary sustainability report

Status

Complete

Attach the document

 KMG_sustainability EN_2022.pdf

Page/Section reference

33-48

66-69

139-149

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Comment

Sustainability Report 2022


Publication

In other regulatory filings

Status

Complete

Attach the document

 ПНУР_ENG_краткая (1).pdf

Page/Section reference

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment

Low-Carbon Development Program of JSC NC KazMunayGas for 2022-2031


Publication

In mainstream reports

Status

Complete

Attach the document

 KMG_Annual Report R2022_ENG (1).pdf

Page/Section reference

144-148;
186-230;
236-251

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures

Comment

Annual report 2022

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	Global Reporting Initiative (GRI) Community Member Task Force on Climate-related Financial Disclosures (TCFD) UN Global Compact Other, please specify Global Methane Initiative	<p>Task Force on Climate-related Financial Disclosure TCFD With the support of the European Bank for Reconstruction and Development, within the framework of the memorandum of cooperation signed in June 2022, a project was launched in 2023 to introduce climate reporting in accordance with the recommendations of the TCFD . It is planned that the work will focus on stress testing of the Company's supply chains in various scenarios of climate change, determining the appropriate priorities for action in the field of climate change, including the assessment of financial materiality, the definition of appropriate evidence-based indicators and goals that lead to improved results of corporate actions in the field of climate change.</p> <p>UN Global Compact A demonstration of our commitment to the principles of sustainable development is membership in the UN Global Compact, as well as the annual publication of the Sustainable Development Report on the UN State Duma website as a Message on the progress made by KMG in promoting the Principles of the Global Compact and the 17 Global Sustainable Development Goals</p> <p>Global Methane Initiative Since 2017, KMG has been a member of the Global Methane Initiative project network. KMG supports the Global Methane Initiative (GMI) and regularly discloses information about its environmental activities to all interested parties to the parties within the framework of the Sustainable Development Report. In 2017, KMG joined the GMI Project Network as part of KMG's methane Emission Reduction activities, which represents a growing community of private sector entities, financial institutions and other governmental and non-governmental organizations interested in projects to reduce methane emissions, as well as to recover and use methane.</p>

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, both board-level oversight and executive management-level responsibility	<p>As part of the work of the Committee of the Board of Directors on Health, Safety, Environment and Sustainable Development, five meetings were held in 2022, at which 40 issues related to sustainable development were discussed. Two meetings of the Committee discussed issues related to biodiversity conservation on measures taken to prevent electric shock to birds at the facilities of JSC NC KazMunayGas group of companies.</p> <p>In addition, as part of the Environmental Policy the Company's management made a commitment:</p> <ul style="list-style-type: none"> - Take into account the impact on biodiversity and preserve animal migration routes when planning and carrying out production activities; - Not to carry out activities in specially protected natural areas of high importance as a habitat of rare and endangered and valuable animal species, to assess risks when carrying out works in environmentally sensitive areas; - Apply a hierarchy of mitigation measures for impacts on biodiversity when planning and implementing operations, considering four key actions: avoidance, minimization, restoration and offsetting potential significant direct impacts; - Participate in research programs and industry partnerships to further develop knowledge and innovative solutions to environmental and biodiversity protection; - Prevent illegal hunting, fishing and other use of flora and fauna by our employees and employees of our contractors and subcontractors in contract areas <p>An ESG risk rating was approved by KMG's Board of Directors as a corporate KPI for 2022, reflecting the Company's intent to manage material ESG risks and commitment to sustainability principles in the international oil and gas market.</p>

		Sustainalytics assessed KMG’s ESG risk management at 28.4. The Company’s risk of exposure to ESG factors is medium. KMG maintained the rating despite materialised occupational health risks. The Company got high praise from experts for its engagement with local communities in the regions of operation, tax transparency, and commitment to preserving the environment and biodiversity
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C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Adoption of the mitigation hierarchy approach Commitment to not explore or develop in legally designated protected areas Commitment to respect legally designated protected areas Commitment to avoidance of negative impacts on threatened and protected species	SDG

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment

Yes

Value chain stage(s) covered

Upstream

Downstream

Tools and methods to assess impacts and/or dependencies on biodiversity

Other, please specify

Biodiversity assessment

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

Biodiversity assessment is carried out, for example, during developing a report on possible impacts (EIA), in accordance with the requirements of the Environmental Code of the Republic of Kazakhstan, including information on the components of the natural environment and other objects that may be subject to significant impacts of the proposed activity, including biodiversity (including flora and fauna, genetic resources, plant and wildlife habitats, wildlife migration routes, ecosystems).

When planning activities, measures are taken to prevent negative impacts on biodiversity, aimed at avoiding any impacts on biodiversity from the very early stage of planning activities and throughout the entire period of its implementation, as well as measures to mitigate the consequences of negative impacts on biodiversity, aimed at creating favorable conditions for the conservation and restoration of biodiversity.

In addition, the production sites periodically monitor the flora and fauna in accordance with the environmental control program.

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment

No and we don't plan to within the next two years

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity-sensitive areas in the reporting year?

Yes

C15.4a

(C15.4a) Provide details of your organization's activities in the reporting year located in or near to biodiversity -sensitive areas.

Classification of biodiversity -sensitive area

Key Biodiversity Area (KBAs)

Country/area

Kazakhstan

Name of the biodiversity-sensitive area

State natural reserve of local importance "Kokzhide-Kumzhargan"
Sands and underground waters of Kokjide

Proximity

Adjacent

Briefly describe your organization's activities in the reporting year located in or near to the selected area

The impact of production on biodiversity is associated with exploration works, background environmental studies, drilling and testing of well and includes noise, vibration, traffic, land relief transformation.

At the present stage of activity in these areas, the anthropogenic impact is insignificant, and does not interfere with the free movement of wild animals and birds in their habitats

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity

Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area

Project design
Scheduling
Operational controls
Restoration
Biodiversity offsets

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

In order to prevent contamination of groundwater, work is being carried out on regular monitoring of the state of the environment, both in the area of activity of the Group's companies and in the area of the Kokzhide sand massif adjacent to the Contract Territory.

Classification of biodiversity -sensitive area

Key Biodiversity Area (KBAs)

Country/area

Kazakhstan

Name of the biodiversity-sensitive area

Kenderli-Kayasan Nature Reserve and Ustyurt State Reserve;

Proximity

Up to 5 km

Briefly describe your organization's activities in the reporting year located in or near to the selected area

The impact of production on biodiversity is associated with exploration works, background environmental studies, drilling and testing of well and includes noise, vibration, traffic, land relief transformation.

At the present stage of activity in these areas, the anthropogenic impact is insignificant, and does not interfere with the free movement of wild animals and birds in their habitats

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity

Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area

Project design
Scheduling
Operational controls
Restoration
Biodiversity offsets

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

In the state protected area in the Northern part of the Caspian Sea, the following types of work have an impact on the environment during drilling: installation of a drilling rig, drilling and testing of wells, shipping.

In order to compensate for the inevitable damage caused to fish resources and for replenish the biodiversity of the Caspian Sea, Zhenis Operating LLP together with the Atyrau Sturgeon Hatchery carried out work on the cultivation of juvenile sturgeon fish with a weight of 1.5 grams in the amount of 28 123 pcs. with their subsequent release into the Ural River.

Classification of biodiversity -sensitive area

Key Biodiversity Area (KBAs)

Country/area

Kazakhstan

Name of the biodiversity-sensitive area

A special environmentally sensitive zone of the Kazakhstan sector of the Caspian Sea.

Proximity

Up to 10 km

Briefly describe your organization's activities in the reporting year located in or near to the selected area

The impact of production on biodiversity is associated with exploration works, background environmental studies, drilling and testing of well and includes noise, vibration, traffic, land relief transformation.

At the present stage of activity in these areas, the anthropogenic impact is insignificant,

and does not interfere with the free movement of wild animals and birds in their habitats.

Indicate whether any of your organization’s activities located in or near to the selected area could negatively affect biodiversity

Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area

- Project design
- Scheduling
- Operational controls
- Restoration
- Biodiversity offsets

Explain how your organization’s activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

In the state protected area in the Northern part of the Caspian Sea, the following types of work have an impact on the environment during drilling: installation of a drilling rig, drilling and testing of wells, shipping.

In order to compensate for the inevitable damage caused to fish resources and for replenish the biodiversity of the Caspian Sea, Zhenis Operating LLP together with the Atyrau Sturgeon Hatchery carried out work on the cultivation of juvenile sturgeon fish with a weight of 1.5 grams in the amount of 28 123 pcs. with their subsequent release into the Ural River.

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity-related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Education & awareness Law & policy

C15.6



(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

Does your organization use indicators to monitor	Indicators used to monitor
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	biodiversity performance?	biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	State and benefit indicators

C15.7

(C15.7) Have you published information about your organization’s response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In other regulatory filings	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Risks and opportunities	Corporate Standard on Environmental Impact Assessment; Environmental Policy of KMG; The Company discloses information on biodiversity conservation on an annual basis in the Sustainability Report.  1, 2
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Risks and opportunities	Corporate Standard on Environmental Impact Assessment; Environmental Policy of KMG; The Company discloses information on biodiversity conservation on an annual basis in the Sustainability Report (pp.126-131)  3

 ¹KazMunayGas Environmental Policy.pdf

 ²Corporate Standard on Environmental Impact Assessment.pdf

 ³KMG_sustainability EN_2022.pdf

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

As the largest national oil and gas producer in Kazakhstan, we significantly contribute to the economic growth of the country. Company understands the extent of our environmental impact and the responsibility we have towards society.

KMG also understands its role towards the fulfilment of the country's obligations under the Paris agreement given its role as one of the key national companies and contributors to the development of climate legislation in Kazakhstan.

As a member of the UN Global Compact, KMG recognizes the importance of climate change mitigation actions and intends to contribute to the achievement of SDG 13 "Climate Action". Climate change response and adaptation measures are incorporated in our strategic documents and corporate policies.

In 2021, the KMG Development Strategy for a ten-year period was approved. Four strategic goals are built through the prism of sustainable development priorities. One of KMG's strategic goals "Sustainable development and gradual reduction of carbon intensity of production" provides for the improvement of the sustainable development system, which will ensure the integration of ESG principles into the Company's key business processes.

In 2021, the Low-Carbon Development Program of JSC NC "KazMunayGas" for the period 2022-2031 (hereinafter - the Program) was developed and approved by the Board of Directors. The Program was developed in accordance with the legislation of the Republic of Kazakhstan, the KMG Charter, the Development Strategy of JSC NC "KazMunayGas" for the period 2022-2031, the Emissions Management Policy in the group of companies of JSC NC "KazMunayGas", as well as other internal documents of KMG. This Program defines a unified low-carbon development framework as an integrated component of corporate governance and systematizes the Company's activities in the field of carbon footprint reduction.

By 2031, KMG aims to reduce its scope 1 and 2 emissions intensity by 10% compared to 2019 and achieve zero routine flaring. KMG plans to increase the use of renewable energy, improve energy efficiency of its operations and introduce a methane leak detection and repair system. The integration of the low-carbon agenda into the company's development strategy will not only contribute to the reduction of greenhouse gas emissions, but will also increase the investment attractiveness and competitiveness of the company in the context of the energy transition.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row	Deputy Chairman of the Management Board (for the Gas Projects	Board/Executive board

1	and Low-carbon Development area)	
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SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company’s annual revenue for the stated reporting period?

	Annual Revenue
Row 1	

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

Greiner AG

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Business unit (subsidiary company)

Allocation level detail

Emissions in metric tonnes of CO₂e

881,633

Uncertainty (±%)

Major sources of emissions

Основные источники: технологические выбросы и выбросы связанные с сжиганием топлива, а также факел.

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Requesting member

Greiner AG

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Allocation level detail

Emissions in metric tonnes of CO₂e

246,006.193

Uncertainty (±%)

Major sources of emissions

Emissions are associated with the purchase of electrical and thermal energy received from third-party suppliers

Verified

Yes

Allocation method

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Requesting member

Greiner AG

Scope of emissions

Scope 3

Scope 2 accounting method

Scope 3 category(ies)

Category 11: Use of sold products

Allocation level

Allocation level detail

Emissions in metric tonnes of CO₂e

8,033,054.146

Uncertainty (±%)

Major sources of emissions

emissions are associated with the use of sold products

Verified

Allocation method

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member

Greiner AG

Group type of project

Type of project

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

Estimated lifetime CO2e savings

Estimated payback

Details of proposal

Requesting member

Greiner AG

Group type of project

Type of project

Emissions targeted

Estimated timeframe for carbon reductions to be realized

Estimated lifetime CO2e savings

Estimated payback

Details of proposal

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

Yes

SC2.2a

(SC2.2a) Specify the requesting member(s) that have driven organizational-level emissions reduction initiatives, and provide information on the initiatives.

Requesting member

Greiner AG

Initiative ID

Group type of project

Type of project

Description of the reduction initiative

Emissions reduction for the reporting year in metric tons of CO₂e

Would you be happy for CDP supply chain members to highlight this work in their external communication?

Yes

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Yes, I will provide data

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.

Name of good/ service

Description of good/ service

Type of product

SKU (Stock Keeping Unit)

Total emissions in kg CO₂e per unit

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions

SC4.2b

(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.

Name of good/ service

Please select the scope

Please select the lifecycle stage

Emissions at the lifecycle stage in kg CO₂e per unit

Is this stage under your ownership or control?

Type of data used

Data quality

If you are verifying/assuring this product emission data, please tell us how

SC4.2c

(SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit

SC4.2d

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms