



SUSTAINABILITY REPORT

2018

SUSTAINABILITY THROUGH CHANGES

SUSTAINABILITY THROUGH CHANGES

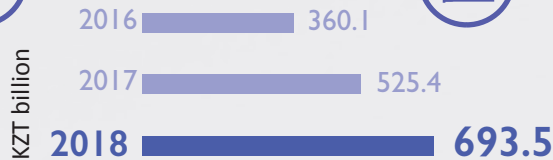


KEY PERFORMANCE INDICATORS IN 2018

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



PROFIT



PROCUREMENT



ENVIRONMENTAL INDICATORS



Water withdrawal,
million m³



CO₂ emissions,
million tons



Energy resources saving,
thousand Gj

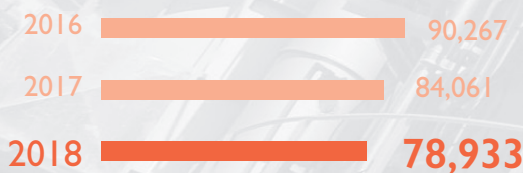


Level of recovery of associated
petroleum gas, %

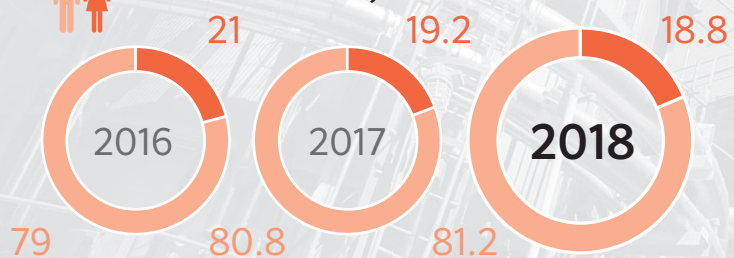
Year	Water withdrawal, million m ³	CO ₂ emissions, million tons	Energy resources saving, thousand Gj	Level of recovery of associated petroleum gas, %
2016	81.3	7.6	113.2	86
2017	84.4	8.5	119.5	85
2018	93.7	9.3	167.6	93



EMPLOYEES*



BY GENDER, %



* Actual number of employees at the end of 2018, details on p. 120



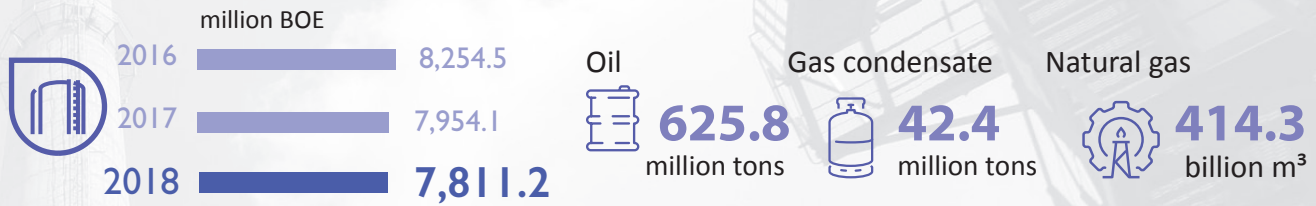
Social support expenses



Number of fatal incidents



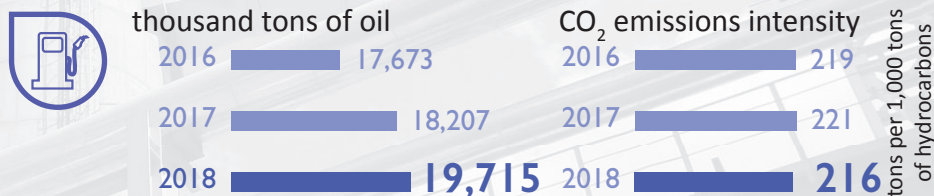
OIL AND GAS RESERVES (A,B,C1)



OIL AND GAS PRODUCTION



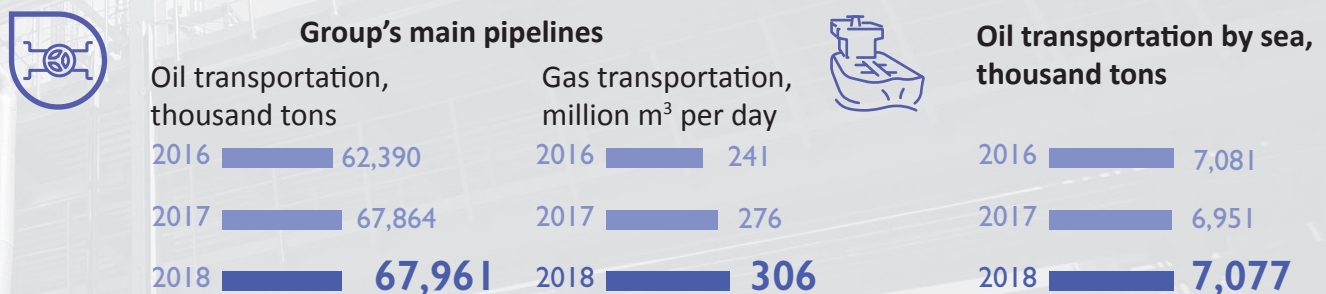
REFINING



MARKETING

Refueling
>100 thousand
vehicles a day

OIL AND GAS TRANSPORTATION



SERVICE



more than **10.5 thousand vehicles** are used daily at our production facilities

CONTENT

ABOUT THE REPORT	4
MESSAGE FROM THE CHAIRMAN OF THE MANAGEMENT BOARD	6



ABOUT THE COMPANY	8
Mission and Strategic Objectives	14
Corporate Key Events	15
Transformation and Digitalization in the Company	16



CORPORATE GOVERNANCE AND SUSTAINABILITY 18

Sustainability is our Strategic Goal	29
Stakeholder Interaction	30
Key Areas of Interaction	31
Identification of Material Topics of the Report	34
Ethics and Fair Practices	37
Mechanisms for Seeking Advice on Unethical Conduct	39
Information Belief System and "Hot Line"	40
Initiatives and Memberships	42

ADDRESS BY THE CHAIRMAN OF THE BOARD OF DIRECTORS 44



CONTRIBUTION TO ECONOMIC DEVELOPMENT 46

Low-carbon Development	48
Economic Performance	51
Procurement Practices	54
Anti-corruption	55



ENVIRONMENTAL RESPONSIBILITY AND SAFETY IN THE WORKPLACE 58

Our Approach	60
Workplace Safety	64
Health Care and Workplace Hygiene	66
Industrial Safety	68
Environmental Index	71
Compliance with the Requirements	93
HSE Training	94



SOCIAL RESPONSIBILITY 96

Employment	98
Human Rights	102
Staff Development	104
Personal Evaluation	107
Equal Possibilities	107
Our Communities	108



ANNEXES 112

Independent Assurance Report on the Sustainability Report 2018	114
Annex 1 Reporting Boundaries, Changes, Notes Supplements, Assumptions and Description of Methodology for Data Collection, Consolidation and Calculation	116
Annex 2 Key Sustainable Development Indicators	121
Annex 3 GRI Content Index	126
Annex 4 Abbreviations and Acronyms	135
Contact Information	137

Interactive version:



About the Report

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

KMG Sustainability Report (hereinafter – the Report) highlights the company’s approach to sustainable development, social, economic and environmental responsibilities, as well as key events and indicators for reporting period.

The Report is a corporate governance tool for us and a significant component of stakeholder interaction. In order to achieve consistency of our sustainable development goals, we believe it is crucial to regularly report and provide stakeholders with comprehensive information on the aspects of activities significant for them and receive feedback on the Report.

JSC NC “KazMunayGas” prepares the reports on its activities in the field of corporate social responsibility every year since 2008, starting from 2012 it publishes reports in accordance with the GRI reporting framework.

This report has been prepared in accordance with the GRI Standards: Core option.

The Report presents consolidated information on JSC NC “KazMunayGas” and its subsidiaries and affiliates (referred to in the Report as KMG, the Company, the Group of Companies) for the 2018 calendar year. The Report covers KMG subsidiaries and affiliates, in which fifty or more percent of the voting shares (interests) directly or indirectly belong to KMG on the right of ownership or trust management, as well as legal entities, whose activities are under the KMG control (*detailed scope of the reporting sections is provided in the Annex 1 to the Report*). The financial position and results of the Company’s operations are presented using the company’s consolidated data with organizational support from the relevant Blocks of the Company. When preparing this Report, the KMG’s management and audited consolidated financial statements

prepared in accordance with the international financial reporting standards were used.

This Report has been prepared in accordance with Global Reporting Initiative Sustainability Reporting Standards (GRI Standards, 2016) as well as GRI G4 Oil and Gas Sector Disclosures. To ensure data comparison and comparability capabilities, quantitative indicators are presented in dynamics over several years.

All KMG Sustainability Reports are available in Kazakh, Russian and English on the company’s website.



The KMG Sustainability Report is approved by decision of the KMG Board of Directors and communicated to the stakeholders through publication on the corporate website and distribution of the printed version.





Since 2006, KMG has been a member and active participant of the UN Global Compact (hereinafter – UNGC) and adheres to ten UNGC principles and 17 Sustainable Development Goals (hereinafter – SDG).

Annual Sustainability Report of the Company reflects our communication on Progress under the United Nations Global Compact and is available through the link.



The Report sections graphically indicate the SDGs for which the Company is taking measures to achieve and implement them. Integrating SDGs with the reporting data will make it possible to assess more effectively the progress in achieving the SDG objectives and focus efforts on improvement of Company’s performance in implementing the principles of sustainable development. ■

Recognizing the principles of the UN Global Compact, the Company declares its commitment to adhere in its activities to the following principles:

Human Rights		Principle 1	Business community should support and respect the protection of internationally proclaimed human rights.
		Principle 2	Business community should not be involved in violation of human rights.
Labour		Principle 3	Business community should support the freedom of association and the effective recognition of the right to collective bargaining.
		Principle 4	Business community should advocate liquidation of all forms of forced and compulsory labour.
		Principle 5	Business community should advocate eradication of child labour.
		Principle 6	Business community should advocate liquidation of discrimination in the area of labour and employment.
Environment		Principle 7	Business community should support a prudent approach to environmental issues.
		Principle 8	Business community should adopt initiatives to promote greater environmental responsibility.
		Principle 9	Business community should facilitate the development and dissemination of environmentally friendly technologies.
Anti-Corruption		Principle 10	Business community should counteract corruption in all its forms, including extortion and bribery.



Message from the Chairman of the Management Board

GRI 102-10, 102-14, 102-44

Dear readers,

I am glad to present to your attention the KMG Sustainability Report for 2018.

Consistently implementing new changes in business processes, we strive to ensure compliance of our activities with the principles of sustainable development, consistency of our economic, environmental and social goals.

In 2018, we approved a new Strategy for the Company's development for a ten-year period. And one of the important strategic goals of the Company was to revise our management policy taking into account the components of sustainable development and to set performance targets for the new level of development. This initiative is fully consistent with the strategic goals and our shareholder – the Fund "Samruk-Kazyna". Sustainable development for us is a significant component of corporate governance.

Over the past 4 years, we have done tremendous work in the field of occupational health, industrial safety and the environment, at that 2018 was the best year in terms of safety and health. We achieved our goal to join the top 20 global industry companies in terms of safety by 2020 in terms of the fatality rate, and by 2020 the Company expects to join the top in terms of injury rate.

Now, we focus on transparency of environmental reporting. This is also one of the new initiatives that



will have a positive impact on our goodwill and reputation of our company. The more transparent we are, the more attractive we are to investors and other stakeholders. For the second year in a row, KMG holds the highest place in the Rating of openness of oil and gas companies of Kazakhstan in the field of environmental responsibility.

Last year, the Company was focused on improving financial stability and we managed to cover losses and significantly improve our financial performance. In 2018, the KMG external debt was also reduced, limits on investments were set and the regulations were adopted for project deadlines. We were also able to bring non-core activities into the market environment, which allowed us to reduce duplicate functions, such as KMG-Retail LLP (gasoline stations network), Kazakh-British Technical University JSC, and KMG-Service Georgia. A significant event of the year was the completion of the modernization of oil refineries. The plants fully provided the domestic market with their own oil products of environmental class K4, K5 (Euro-4, Euro-5 standards), a contract was signed for increasing the export of Kazakh gas to China from 5 billion to 10 billion cubic meters per year, work on gasification of the regions of the Republic was continued.

During the year, we continued to actively implement the Transformation Program. According to the new management model, one of the major sub-holdings, KMG Exploration and Production, merged with us in 2018. Now production assets are managed directly by KMG. The holding structure continues to improve business processes, simplify the management system and improve the quality of works performed.

As one of the largest employers in the country, we strive for high social orientation, which is based on the principles of partnership with employees and trade unions. We are focused on promoting productive employment, ensuring decent work and working conditions, training and education of employees, promoting the development in the regions where we operate.

Next year we are aimed at ensuring our investment attractiveness by increasing the transparency of activities, the level of environmental and social responsibilities of business, as well as improving the indicators of long-term sustainability.

Sincerely, Alik Aidarbayev

ABOUT THE COMPANY





Consistently implementing new changes in business processes, we strive to ensure compliance of our activities with the principles of sustainable development, consistency of our economic, environmental and social goals.



- Digital transformation
- Production processes automatization
- Processes re-engineering



- Management system change
- Corporate culture development
- Corporate values introduction
- Financial stability improvement



- Ecological reporting transparency
- Labor safety indicators leadership

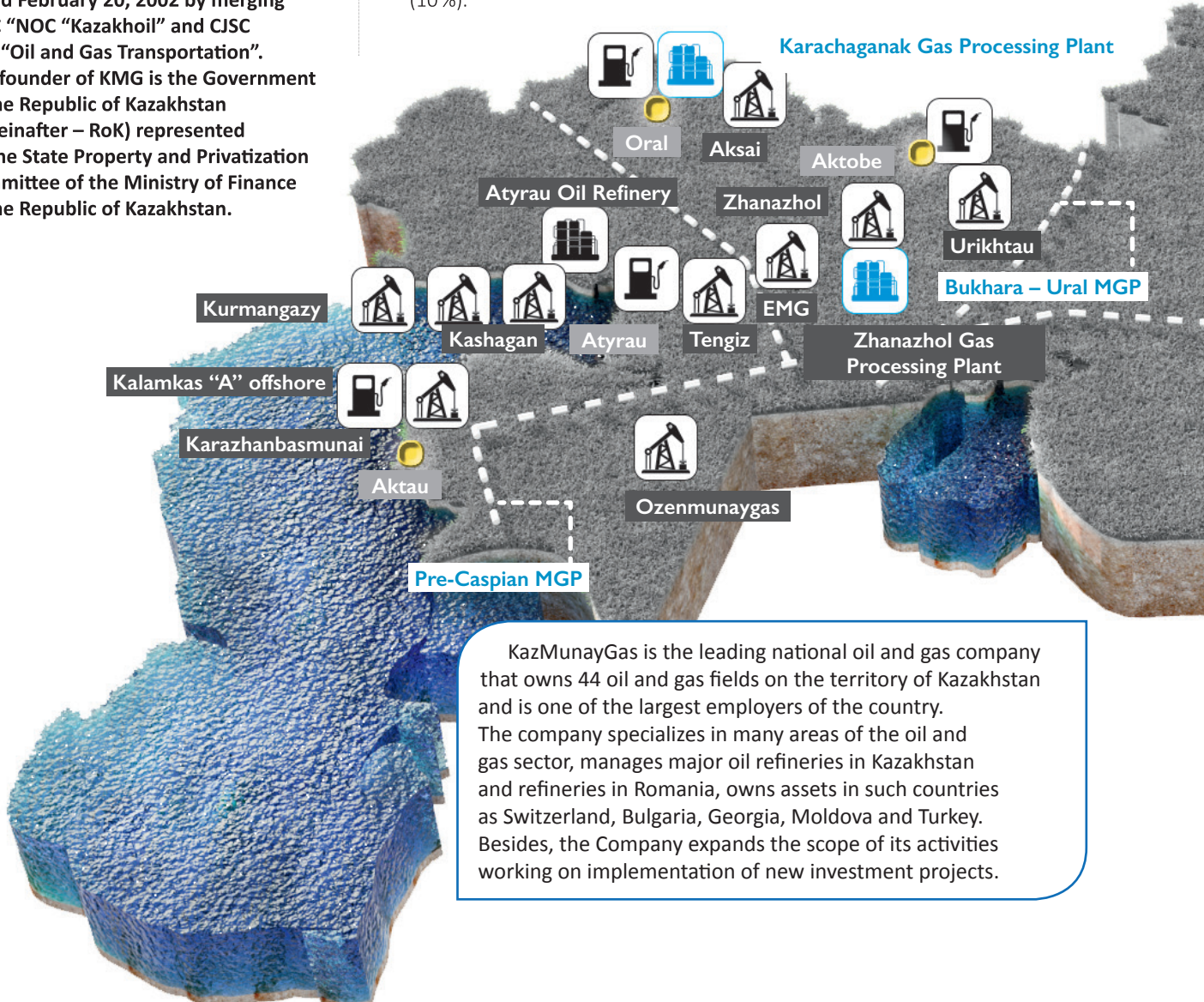
About the Company

GRI 102-1, 102-2, 102-4, 102-5, 102-6, 102-7, 102-9

Joint Stock Company National Company “KazMunayGas” is a unique vertically integrated oil and gas operator that carries out a full production cycle from exploration and production of hydrocarbons, their transportation and refining to provision of specialized services and represents the interests of the state in the oil and gas industry of Kazakhstan.

KMG was formed by the decree of the President of Kazakhstan dated February 20, 2002 by merging CJSC “NOC “Kazakhoil” and CJSC “NC “Oil and Gas Transportation”. The founder of KMG is the Government of the Republic of Kazakhstan (hereinafter – RoK) represented by the State Property and Privatization Committee of the Ministry of Finance of the Republic of Kazakhstan.

KMG shareholders: Joint Stock Company National Wealth Fund “Samruk-Kazyna” (90%) and the RoK National Bank (10%).



KazMunayGas is the leading national oil and gas company that owns 44 oil and gas fields on the territory of Kazakhstan and is one of the largest employers of the country. The company specializes in many areas of the oil and gas sector, manages major oil refineries in Kazakhstan and refineries in Romania, owns assets in such countries as Switzerland, Bulgaria, Georgia, Moldova and Turkey. Besides, the Company expands the scope of its activities working on implementation of new investment projects.

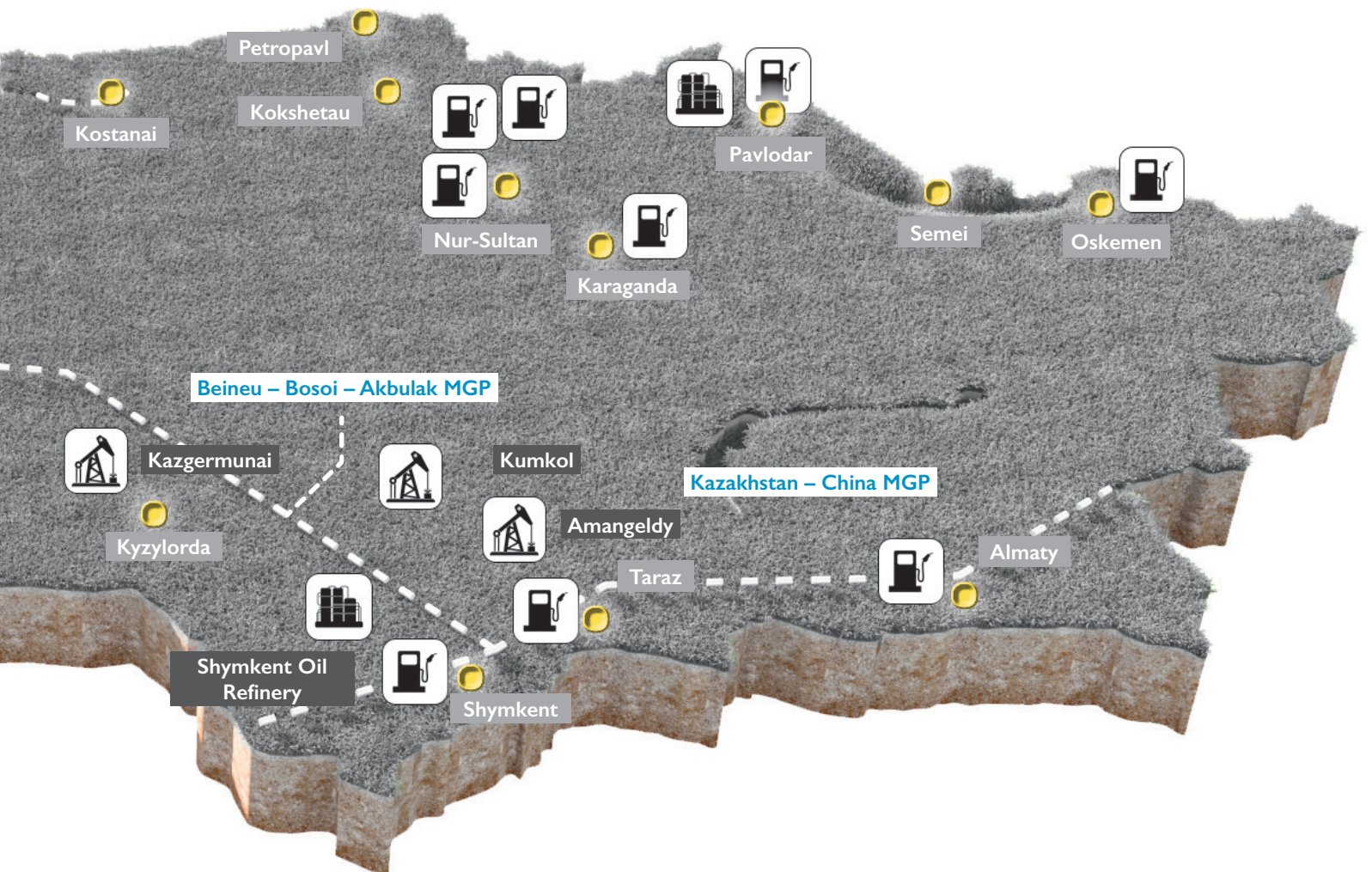
Location of KMG production assets and value chain

KMG ships diesel fuel for field agricultural works, and also provides social and production facilities and institutions with fuel oil during the heating period. The remaining volumes of oil products are sold to third-party buyers in the domestic market and for export.

All volumes of light oil products are sold in bulk in the domestic market of Kazakhstan. According

to the results of 2018, the share of deliveries to the domestic market amounted to 75% of the total sales of KMG oil products.

In the structure of export deliveries of oil products in 2018, the shipment of dark oil products to Europe prevailed, small volumes of oil products were supplied to Russia and China.



KMG OIL AND OIL PRODUCTS VALUE CHAIN

Sustainability Report

1 
EXPLORATION



2 
DEVELOPMENT AND PRODUCTION



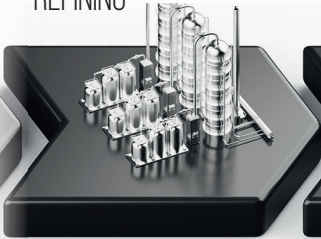
3 
TRANSPORTATION



4 
SALES



5 
REFINING



6 
LOGISTIC AND STORAGE

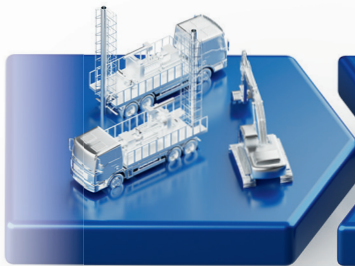


7 
OIL PRODUCTS SALES



KMG GAS VALUE CHAIN

1 
EXPLORATION



2 
DEVELOPMENT



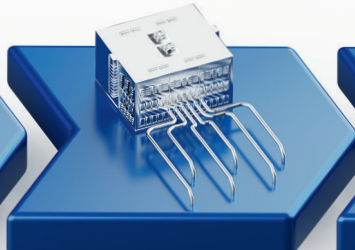
3 
PRODUCTION



4 
REFINING



5 
TRANSPORTATION



6 
SALES



Wholesale distribution of KMG oil products produced by RoK refineries (2018 actual)*, thousand tons

2018 actual	Domestic market	Export	Total
Gasolines	701	–	701
Diesel fuel	954	–	954
Jet fuel	34	–	34
Fuel oil	192	414	606
Vacuum gas oil	0	200	200
Heating oil	43	34	66
Calcinated coke	–	25	25
Total coke	44	33	77
Sulfur	9	4	13
Benzene	–	5	5
Bitumen	53	–	53
Paraxylene	–	2	2
Liquefied gas	128	–	128
HGU raw materials	4	–	4
Total 2018	2,162	717	2,868

* total sales volumes of petroleum products are specified for 2018 out of resources of KMG EP and KMG

As required by the Technical Regulations of the Customs Union, motor fuels corresponding to environmental classes K4, K5 have been produced at domestic refineries since 2018.

K4, K5 (EURO 4, EURO 5)

Herewith:

- Volume fraction of benzene of not more than 1% for the environmental class K4, K5;
- Mass fraction of sulfur is not more than 50 mg/kg for class K4, and not more than 10 mg/kg for class K5;

- Concentration of lead is not more than 5 mg/dm³, for environmental class K4, K5.

The Company provides information on the quality of products manufactured at the Kazakhstani refineries through press releases in the media. Stakeholders can also familiarize themselves with the necessary information on the quality of fuel produced on the official websites of the refineries: **PPCP** https://www.pnhz.kz/product/quality_of_product/ **Atyrau Refinery** <https://www.anpz.kz/production/product/> **PKOP** http://www.petrokazakhstan.kz/rus/pages/processing_subdivision.html.

Balance of production and consumption main types of fuels and lubricants in RoK**

Name	2018 actual, thousand tons		
	GASOLINES	DIESEL FUEL	KEROSENE
Production	3,943	4,434	388
Consumption	4,217	4,865	647
Import	408	377	261

More details on the Company's operations and financial results are set out in the Annual Report for 2018.



** the difference between production and consumption + import is the carry-over balance for the last year

MISSION AND STRATEGIC OBJECTIVES

GRI 102-16

MISSION

Maximizing the Shareholders' benefits from participation in the development of the national petroleum industry

VISION

A highly efficient national and competitive integrated oil and gas producing and transporting company meeting the highest standards of safety operations and corporate governance

STRATEGIC GOALS

Value creation and financial sustainability strengthening

Increasing the level of manageability of subsidiaries and affiliates / JV

Corporate governance and sustainability

STRATEGIC RESULTS FOR KMG

Growth of free cash flow and return on investment

Implementation of a two-level management system

Environmentally responsible company

Ethics, compliance, corporate culture

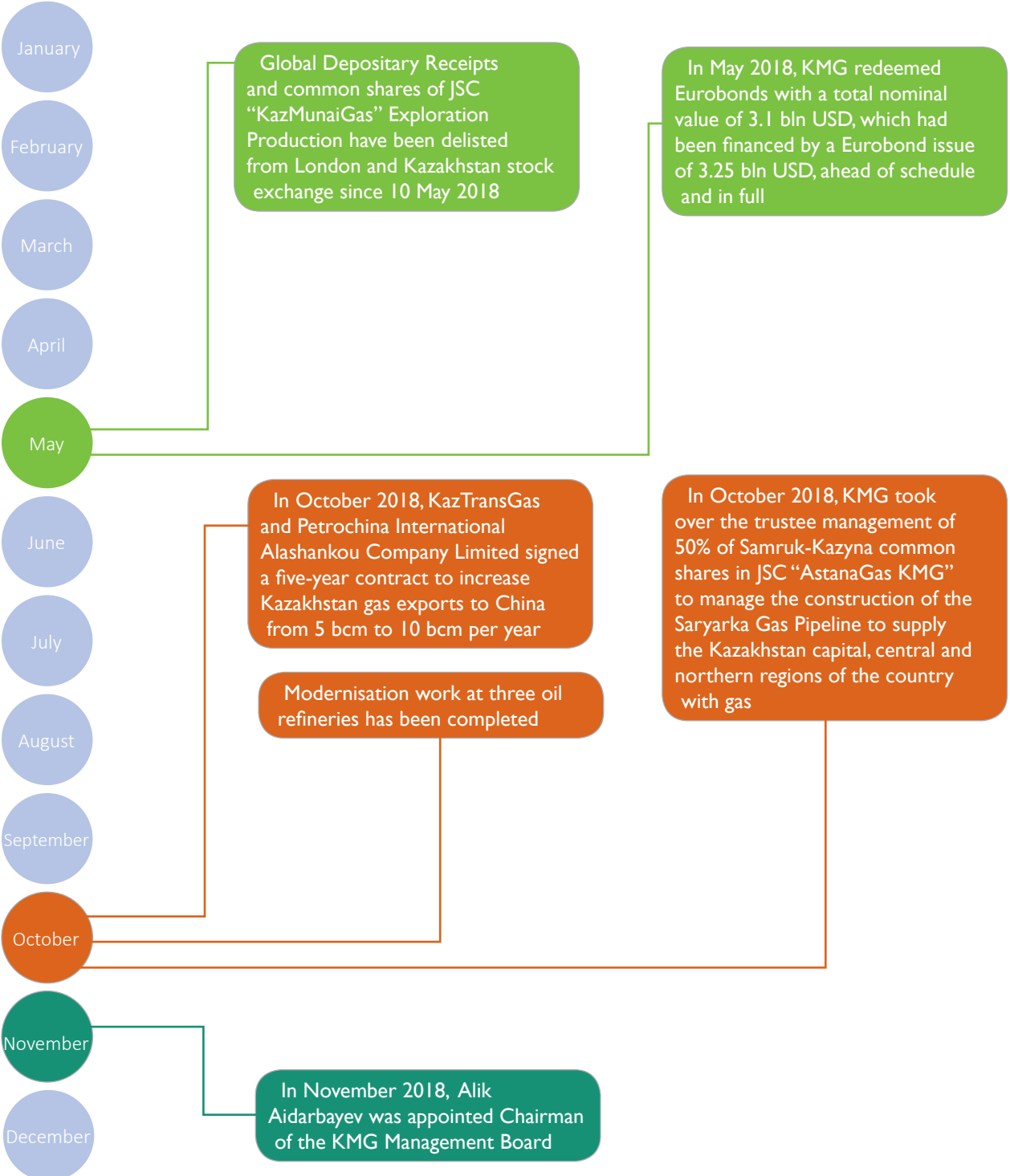
STRATEGIC RESULTS FOR SHAREHOLDERS

Increase in dividends to Shareholders

CORPORATE KEY EVENTS

2018

GRI 102-44



TRANSFORMATION AND DIGITALIZATION IN THE COMPANY



GRI 102-10

In 2018, the implementation stage of the Program of transformation of JSC NC “KazMunayGas” continued. The project activities were carried out in accordance with the initiatives announced by JSC “Samruk-Kazyna”.

In the framework of implementation of the new KMG operating model, which enables outsourcing of non-core support functions, the Shared Services Centre on Information Technology of JSC NC “KazMunayGas” on the basis of LLP “KMG – Kumkol” was officially launched.

The most important project of transformation in the area of systematic and methodological changes (hereinafter referred to as SMC) in KMG operations is the Transformation of Key Business Functions and ERP Implementation. The methodological component of the project was completed in the reporting period.

Another major SMC project is the Introduction of Procurement Category Management (hereinafter referred to as PCM*). KMG was tasked to cover by PCM at least 80% of expenditures for annual procurement under managed categories by 2022. For this purpose, it was necessary to develop and approve procurement category management strategies (hereinafter referred to as PCMS) for 67 categories.

In 2018, 7 PCMS were approved, including ‘Procurement of Motor Transport Services for KMG Group in RoK’, ‘Technical Gases’, ‘IT Equipment’, ‘Additives and Reagents’, ‘Pump Rental Services’, ‘Split Service in Drilling’, ‘Procurement of Special Machinery Services’. 9 strategies were implemented: ‘Production and Drilling Pipes’, ‘Oil Pumps’, ‘Diesel Fuel’, ‘Procurement of Motor Transport Services for KMG Group in Nur-Sultan’, ‘Catalyst for Catalytic Cracking’, ‘Technical Gases, Stage-1 (POCR)’, ‘Cars and Buses’, ‘Medical Insurance’, ‘Electric power’.

During the implementation of the project on introduction of PCM in KMG, a specific Centre of Competence was

* Procurement Category Management is an integrated approach to procurement, which allows to take into account the features of certain categories in a specific business area. Categorical management involves the analysis of purchase prices, the supplier market and the development of a procurement strategy based on the data.

established in the form of a department of category management and provision of large projects with goods, works and services (hereinafter referred to as GWS). This unit solves the problem of reducing procurement costs, improving the quality of procured GWS through standardization and unification of procured goods and services. Based on the standards of the Fund Samruk-Kazyna, KMG developed its own Regulations for GWS Procurement.

The process of procurement category management brings considerable benefits to the Company. For example, in the framework of the PCMS ‘Procurement of Motor Transport Services for KMG Group in Nur-Sultan’, the planned economic effect for 2018–2020 is KZT 867 million. Under the PCMS ‘Production and Drilling Pipes’, it is planned to receive benefits in the amount of KZT 1.3 billion during 5 years.

In 2018, two SMC transformation projects were implemented – “Introduction of New Model for Investment Portfolio Management in JSC NC “KazMunayGas” and “Introduction of New Risk Management Model: Improvement of Internal Control System and Implementation of the Business Continuity Management System”.

The first project was implemented on the basis of SAP PPM software. The project is aimed at the transition of KMG to a fundamentally new business process of investment management – portfolio management. This approach allows to collect a pool of investment projects of SDEs/divisions of KMG and select high-performance projects once a year. It also ensures the selection of high-performance investment projects, taking into account KMG costs of other capital investments (current CAPEX) and financial opportunities to the Company.

In addition, the system implementation will make it possible to receive timely and reliable information on disbursement of capital investments under investment projects. This will greatly contribute to the control over approved project budgets, making timely decisions to ensure successful implementation of projects that

eventually will improve the KMG Corporate Centre control over the progress in investment projects.

The second project ensures better compliance with requirements of the Corporate Governance Code, a positive impact on KMG's corporate governance rating, improvement of the attractiveness of the Company for investors in accordance with expectations of stakeholders. The project establishes a methodological foundation for operation in the Company of three mandatory and interrelated systems – risk management, internal control and management/business continuity management.

The introduction of such a methodology will ensure timely prevention of process risks through the introduction of control procedures and the identification of fraud risks through the enhancement of business processes. The project addresses areas of operational inefficiency. The manageability and controllability of key business processes, the degree of reliability of financial statements required for decision-making, planning and control of achievement of KMG objectives and reasonable assurance of reliability of its formation will improve. In addition, the potential threats should be identified and their impact on the KMG operation should be assessed with the aim of further improvement of sustainability and their response to the threats. This will enable the protection of the key stakeholders, reputation, brand and the efficient business operations. Finally, the level of risk culture of the Company's employees will improve due to involvement in the risk management process.

In 2018, the first pool of KMG digitization projects was pre-approved. The implementation of current digital initiatives continued in all basic areas of Company operations. Thus, in oil production, such a basic project was Digital Oil Field. In 2016 an oil and gas field management system was implemented as a pilot project at the Uaz

oil field of JSC "Embamunaygas" for ensuring maximum production performance. As a result, stable operation of wells were achieved by means of automation systems and the electricity consumption was reduced. In 2017-2018, the project was replicated at the facilities of the Provrva group of fields of JSC "Embamunaygas" where the further expansion in 2019 at the fields of JSC "Ozenmunaygas" and "Kazgermunay" JV LLP.

In the downstream segment, a project is being implemented at the Pavlodar and Atyrau oil refineries with the aim of extending the period between overhauls. It is aimed at ensuring the necessary level of maintenance, reliability and mechanical integrity of refinery equipment. Owing to this initiative, due to automation and introduction of new management processes, it will be possible to perform scheduled overhauls of refineries once in three years and accordingly less frequently to stop production.

Upon completion of the project, it is expected that the reliability of equipment will increase by 8%, repair costs will reduce by nearly 10%. It is also planned to reduce inventory by 10%; unscheduled downtime of equipment and the scope of emergency work will also be lower.

In accordance with the updated vision of the Transformation Program presented by the Fund Samruk-Kazyna, a new portfolio of KazMunayGas transformation projects will be formed in 2019. Criteria for selection of projects for the portfolio were developed taking into account the specifics of KMG. In particular, transformation initiatives should support the achievement of the Company's strategic objectives and KPIs. The Program portfolio will include projects aimed at reengineering of production and corporate business processes, the culture of high efficiency and digital solutions for the Business and etc. ■

CORPORATE GOVERNANCE AND SUSTAINABILITY



One of the important strategic goals of the Company was to revise our management policy taking into account the components of sustainable development and to set performance targets for the new level of development. Sustainable development for us is a significant component of corporate governance.



Management system change

In 2018 we continued to actively implement the Transformation Program. According to the new management model, one of the major sub-holdings, KMG Exploration and Production, merged with us in 2018. Now production assets are managed directly by KMG.



Corporate culture development

In 2018, we approved a new Code of Business Conduct (hereinafter – the Code) which enshrines KMG’s corporate values, defines the most important principles and rules of business conduct and stakeholder relations, and is a set of corporate ethics requirements to be followed by all employees of the Company.



CORPORATE GOVERNANCE

GRI 102-18

Transparency of the corporate governance and organization structure is essential for ensuring accountability of these bodies and those involved. These reporting elements contain information about how the organization creates its supreme corporate governance body, forms its structure taking into account its goals, and how these goals relate to the economic, environmental and social impacts of the organization.

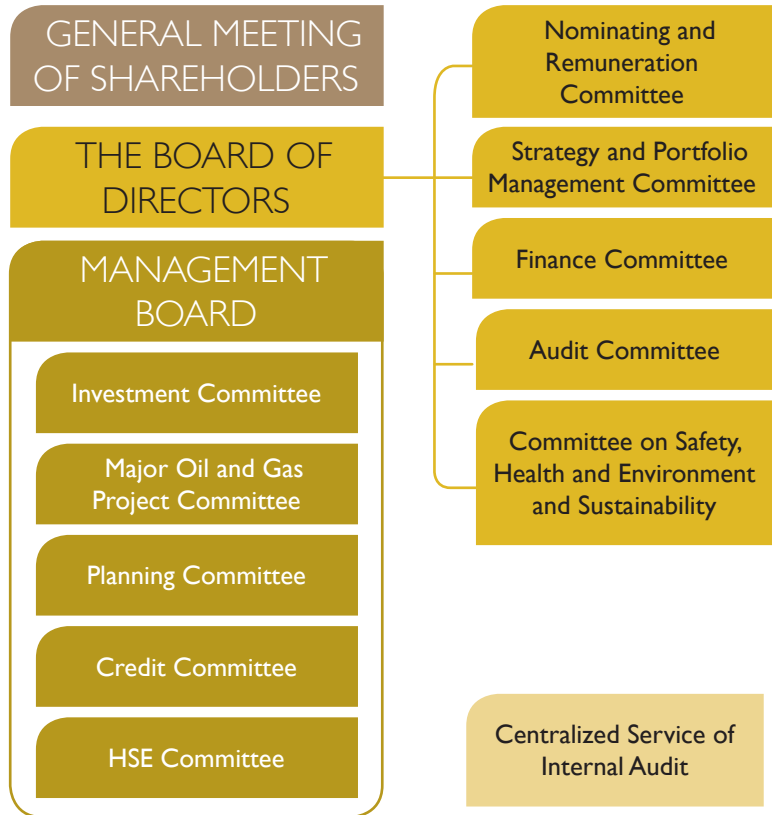
Corporate Governance Structure

In accordance with the KMG Charter, KMG corporate governance bodies are:

- 1) Supreme Body – General Shareholders Meeting,
- 2) Management Body – Board of Directors,
- 3) Executive Body – Management Board.

The Board of Directors performs general management of KMG activities, defines priority areas of activities, development strategy of the company, and is responsible to the General Meeting of Shareholders for implementation of its leadership functions. Management of current activities is carried out by the Management Board, which in turn reports to the Board of Directors.

The KMG corporate governance structure



Committees of the Board of Directors

To consider the most important issues and prepare recommendations to the Board of Directors, KMG establishes committees of the Board of Directors. In 2018, the following Committees operated under the Board of Directors:

1. **Nominating and Remuneration Committee** established for the tasks of succession planning of the Board of Directors and the Management Board, assessment of the activities of KMG authorities, ensuring effective personnel policy, remuneration

system, as well as social support, professional development and training of KMG officials and employees;

2. **Strategy and Portfolio Management Committee**, formerly known as the Strategy and Innovation Committee, established for such issues as the development strategy and investment policy, priority areas of KMG's activities, improving the investment attractiveness of KMG, planning financial and economic activities and monitoring the transformation of KMG;

3. **Finance Committee** established for the purpose of effective financial policy, by assessing a financial condition, monitoring a financial structure and strategy, as well as monitoring the implementation of investment projects;
4. **Audit Committee** which functions are aimed at effective control over financial and economic activities, the performance of systems of internal control, risk management and corporate governance, audit and financial reporting;
5. **Committee on Safety, Health and Environment and Sustainability** established in 2018 to consider a range of issues on safety, health and the environment, the implementation of the principles of sustainability and socio-economic development, social obligations and programs, ensuring business continuity and environmental efficiency. This Committee is responsible for initiating, in-depth consideration and decision-making on the economic, environmental and social aspects of the impact of the organization.

Delegation of Powers

GRI 102-19

Delegation of powers to solve economic, environmental and social problems from the Supreme body of corporate governance to top executives and other employees is carried out within the framework of corporate governance in accordance with the KMG Charter and the Corporate Governance Code. Corporate governance is the responsibility of the Board of Directors, with the Corporate Secretary monitoring and advising the Board of Directors, the Executive body and other bodies on proper implementation of the Corporate Governance Code, the development of medium-term plans to improve corporate governance and their implementation. A set of issues on sustainability, including the delegation of solutions of the economic, environmental and social problems, is detailed in the action plans for improving corporate governance.

GRI 102-20

In accordance with the Corporate Governance Code, the Board of Directors and the Management Board, within their competencies, ensure the development of an appropriate system for sustainability and its implementation, with all employees and officials at all levels contributing to sustainability.

SUSTAINABLE DEVELOPMENT GOALS



Principle 1

Business communities shall support and respect protection of internationally recognized human rights.



Principle 2

Business communities shall make sure that they are contributory infringer of human rights.

Principle 4

Business community should advocate liquidation of all forms of forced and compulsory labour.



Principle 6

Business community should advocate liquidation of discrimination in the area of labour and employment.

Principle 7

Businesses should support a precautionary approach to environmental challenges.



Principle 8

Undertake initiatives to promote greater environmental responsibility.

Principle 10

Businesses should work against corruption in all its forms, including extortion and bribery.



Responsibility for Economic, Environmental and Social Issues

At the level of the Executive body, the responsibility for addressing sustainability issues is as follows:

- Managing Director for Strategy is responsible for creation and implementation of a sustainable development management system that allows to follow the principles and objectives of sustainable development, integration of the management system in the field of sustainable development into key processes, the Development Strategy and the decision-making processes of KMG;
- Managing Director on occupational health and environment is responsible for development and enforcement of the KMG's HSE strategy and policy, as well as for ensuring occupational safety, health, environment and environmental safety;
- Managing Director on human resources is responsible for implementation of the processes and management of human, personnel and social aspects of sustainability;

- Deputy Chairman of the Management Board – Financial Director is responsible for resolving a range of issues related to the economic component of sustainability, including the promotion of economic development of the presence regions and the share of local content in procurements.

The above persons are accountable to the Management Board and/or its Chairman. Accountability of responsible persons for economic, environmental and social issues is governed in detail by regulatory documents, procedures of internal control and continuity of the Company's activities. Thus, in accordance with the development plans, issues are regularly submitted to the Management Board, which in turn is accountable to the Board of Directors. Comprehensive control over performance of the appropriate functions and measures to improve corporate governance is carried out within the powers of the Audit Committee of the KMG Board of Directors.

Advising Stakeholders on Economic, Environmental and Social Issues


GRI 102-21

Consultations on economic, environmental and social issues between stakeholders and the Supreme corporate governance body of the Company are conducted in various ways on an ongoing basis. Thus, in 2018, the sustainability issues were considered 11 times within the framework of meetings of the Board of Directors, as well as 5 times at consultative and consultative meetings in the context of the competence of the Strategy and Innovation Committee. Current and operational issues are reviewed by the Management Board every week. Officials and responsible persons of various authorities and levels of management, including representatives of shareholders, external consultants, partners and other stakeholders, are involved in such meetings.

Advising an extensive list of stakeholders on economic, environmental and social issues

is carried out through the Company's website, the public relations service (press service), as well as through the release of the annual Sustainability Report, which is the KMG central communication channel with external and internal stakeholders on sustainability. At the same time, there are various ways of communication in KMG, which allow properly building a dialogue with stakeholders and the Company. For example, information for the investment community is placed in detail on a special portal <http://ir.kmg.kz>, employment issues are posted on <http://work.kmg.kz>, the system of confidential information is arranged through the belief system channel (doverie@kmg.kz), there is also a functional interaction on the activities of the Ombudsman ombudsman@kmg.kz, health and environmental protection hse@kmg.kz, and sustainability sustainability@kmg.kz.

Composition of the Board of Directors and its Committees

GRI 102-22, 102-23

As of the date of this Report, the Board of Directors includes:

1. **Walton Christopher John**, Chairman of the Board of Directors;
2. **Baljeet Kaur Grewal**, Representative of Interests of JSC “Samruk-Kazyna”;
3. **Uzakbay Karabalin**, Representative of Interests of JSC “Samruk-Kazyna”;
4. **Almasadam Satkaliyev**, Representative of Interests of JSC “Samruk-Kazyna”;
5. **Whyte Stephen James**, Independent Director;
6. **Dyer Philip John**, Independent Director;
7. **Viana Palha Da Silva Luis Maria**, Independent Director;
8. **Anthony Espina**, Representative of Interests of JSC “Samruk-Kazyna”;
9. **Alik Aidarbayev**, Chairman of the KMG Management Board.

As of the date of this Report, the composition of the Committees is as follows:

Strategy and Portfolio Management Committee

1. Whyte Stephen James, Chairman of the Committee
2. Walton Christopher John
3. Uzakbay Karabalin
4. Grewal Baljeet Kaur
5. Dyer Philip John
6. Viana Palha Da Silva Luis Maria
7. Anthony Espina

Nominating and Remuneration Committee

1. Viana Palha Da Silva Luis Maria, Chairman of the Committee
2. Dyer Philip John
3. Walton Christopher John
4. Whyte Steven James
5. Uzakbay Karabalin
6. Anthony Espina

Finance Committee

1. Walton Christopher John, Chairman of the Committee
2. Whyte Steven James
3. Grewal Baljeet Kaur
4. Dyer Philip John
5. Viana Palha Da Silva Luis Maria
6. Anthony Espina

Audit Committee

1. Dyer Philip John, Chairman of the Committee
2. Whyte Steven James
3. Viana Palha Da Silva Luis Maria

Committee on Safety, Health and Environment and Sustainability

1. Dyer Philip John, Chairman of the Committee
2. Walton Christopher John
3. Whyte Steven James
4. Uzakbay Karabalin
5. Viana Palha Da Silva Luis Maria

The Board of Directors consists of four independent directors, four – representatives of the shareholder, and the Chairman of the KMG Management Board. Members of the Management Board, except for the Chairman of the Management Board, may not be elected to the Board of Directors, and the Chairman of the Management Board may not be elected as a Chairman of the Board of Directors. Members of the Board of Directors are elected for a term of up to three years. KMG Board of Directors includes of one woman – Grewal Baljeet Kaur, three of the nine members of the Board of Directors are citizens of the Republic of Kazakhstan. The Board of Directors includes two people in the age group from 30 to 50 years and seven people older than 50 years. The Board of Directors and its Committees maintain a balance of skills,



experience and knowledge to ensure that independent, objective and effective decisions are made for the benefit of KMG and that

all shareholders are treated fairly and in accordance with the principles of sustainability.

Nominating and Selection of the Board of Directors

GRI 102-24

Procedure for Nominating and Selection of Candidates to the Board of Directors

The procedure for Nominating and selection of candidates to the members of the Board of Directors is determined by the Charter and other regulatory documents, by the General Shareholder Meeting together with the Chairman of the Board of Directors and Chairman of the Nominating and Remuneration Committee, and also due to the principles of transparency, fairness and professionalism in implementing the sourcing and recruitment of candidates. Members of the Board of Directors are elected from among those proposed for election as

representatives of shareholders and other persons. Candidates to the Board of Directors members should have the knowledge, skills and experience necessary to perform their functions and ensure long-term value growth and sustainability, as well as an impeccable business reputation. Chairman of the Board of Directors is elected by the General Shareholder Meeting. Independent Directors are selected in accordance with the approved Rules for Selection of Independent Directors of Companies belonging to the Samruk-Kazyna Group.

Conflict of Interests

GRI 102-25

Procedures to Prevent Conflicts of Interests

The inadmissibility of a conflict of interest is one of the fundamental principles of sustainable development and is enshrined in the Code of Corporate Governance.

The Company also approved the Policy for the settlement of conflicts of interest among employees and officials of KazMunaiGas NC JSC, which was developed for the purposes of creating a uniform system for managing real and potential conflicts of interest in KMG, as well as

determining the requirements for the behaviour of employees and/or officials the compliance with which will ensure honest and impartial performance of their official duties (or duties within any corporate elected bodies, such as committees, commissions, etc.) and impartial decision making.

Each employee and/or official, while performing his/her official duties, is obliged to put KMG's interests above his/her private interests.

Disclosure of Conflicts of Interest

In the case of a conflict of interest, an employee and/or official shall be obliged to immediately and fully disclose the information (to declare) about a real or potential conflict of interest, as well as to actively contribute to resolution thereof.

A possible source of disclosure of the information about a conflict of interest may be third parties (the so-called "whistle blowers" that are employees who report violations or abuses).

The information on a conflict of interest should be disclosed by an employee and/or an official of KMG only in writing and in the most understandable form.

At the same time, KMG undertakes to keep confidential the process of disclosing the information about a conflict of interest and the process of settlement thereof (at the request of an employee and/or official), to protect an employee and/or official from prosecution in connection with a conflict of interest that was disclosed and settled by him/her in a timely manner.

Role of the Board of Directors in Defining Goals, Values, Mission and Strategy

GRI 102-26

The Board of Directors shall determine the priority areas of activities, approve and monitor implementation of the development strategy, which includes goals, values, mission, as well as policies and tasks in relation to economic, environmental and social impacts, in consultation with shareholders on the basis of proposals developed by the Executive body.

Thus, in 2018, the Board of Directors approved a new KMG Development Strategy for 2018–2028, which defines corporate governance

and sustainability as one of the three strategic goals of the Company for the next ten years. Implementation of the strategic goal "Corporate Governance and Sustainability" should be resulted in establishment of a management system that ensures achievement of improved indicators of corporate social responsibility, health, safety and environment, improving the economic impact in the presence regions, combating corruption, improving the quality of relations with stakeholders, improving the rating of corporate governance and corporate culture of ethics.

Competence and Evaluation of the Board of Directors

Collective Knowledge of Members of the Board of Directors


GRI 102-27

Members of the Board of Directors strive to regularly improve their skills and professionalism, including in the management of economic, environmental and social aspects. The Nominating and Remuneration Committee regularly reviews the current balance of skills and knowledge of the Board of Directors members and develops a training plan.

On an annual basis, the Company holds a Forum of Directors General devoted to safety and environmental protection, with the participation of members of the Board of Directors, the Management Board of KMG, the CEOs of KMG subsidiaries, with

the involvement of external consultants and industry experts. On a periodic basis, field sessions of the Board of Directors are held in the places of production activities. Also, since 2018, separate plans are being developed to train KMG management and employees on sustainability, ethics and compliance, along with other ongoing seminars and sessions in the context of corporate governance components. Information on improving the skills and knowledge of members of the Board of Directors is posted on the company's website http://www.kmg.kz/rus/kompaniya/korporativnoe_upravlenie/treningi_chlenov_soveta_direkt/.

Assessment of Performance of the Board of Directors


GRI 102-28

In accordance with the Corporate Governance Code, the Board of Directors annually assesses its activities, performance of the Committees, Chairman and members of the Board of Directors. The assessment is carried out every three years by an independent consultant. In 2018, as required by the Code, an independent consultant of PricewaterhouseCoopers conducted an interim corporate governance diagnosis at KMG, which included an assessment of performance of the Board of Directors and the Executive body. The diagnostic results were reviewed in accordance with the established procedure by the KMG shareholder, at the meetings of the Nominating and Remuneration Committee and directly by the Board of Directors. In addition, an independent consultant developed a Plan to improve KMG's Corporate Governance for 2018–2020 based on the diagnostic

results, which identifies specific and clear steps to improve performance of the KMG's management bodies. A procedure for performance assessment of the Board of Directors is governed by the Regulations on Performance Assessment of the Board of Directors, Committees of the Board of Directors, Chairman, members of the Board of Directors and Corporate Secretary of KMG.

The corporate governance diagnostics and an accompanying plan includes the following components:

1. Performance of the Board of Directors and the Executive body,
2. Risk management, internal control and audit,
3. Sustainability,
4. Rights of shareholders and fair treatment of shareholders,
5. Transparency.

Management of Economic, Environmental and Social Impacts

GRI 102-29

KMG's Board of Directors plays a key role in managing economic, environmental and social impacts, risks and associated prospects. The Company regularly assesses risk on a quarterly basis and at the end of the year in accordance with the approved methodology for risk management, including economic, environmental and social risks. Based on the identified risks, the appropriate action plans for their prevention, monitoring and elimination are developed and implemented. In particular, the Board of Directors is responsible for determining the corporate risk management policy, approving the register and risk map, the action plan for critical risk management, the overall risk appetite, the levels of tolerance for each key risk, approving the risk report

and documents in the field of ensuring the continuity of KMG activities.

In particular, in 2018, independent consultants identified a number of system improvements based on the results of corporate governance diagnostics, which subsequently increased the corporate governance rating from "B" to "BB". Namely, the company has implemented key recommendations for development of a comprehensive system for determining risk appetite, critical evaluation of the risk management plan, discussion of risks at meetings of the Executive body Committee on risks and a number of other activities.

Role of the Board of Directors in Risk Management

Effectiveness of the Risk Management Process

GRI 102-30

The KMG Board of Directors annually approves the Risk Register, Risk Map, and Risk Management Plan of the Company. According to the Company's Risk Register and Map for 2018, 34 risks were identified and assessed in these areas. The measures have been developed for each risk to manage them, and the risk owners have been identified. Constant monitoring of the dynamics of key risks and the implementation of measures to reduce them, as well as informing

the Management Board and the Board of Directors of KMG by sending quarterly reporting on risks is performed. In 2019, we plan to update the risk register and supplement it with risks related to climate change and water scarcity. We have changed the approach to risk management in the field of health, safety and environmental protection and now all leaders of KMG business areas are the owners of these risks.

Consideration of Economic, Environmental and Social Issues

GRI 102-31

Until 2018, a frequency of consideration of economic and social impacts (except labor protection issues), as well as related risks and opportunities was formed based on an annual Action Plan of the Board of Directors. However, since 2018, such issues are considered regularly in the framework of the company's current activities.

Safety, health and environmental protection is our most important aspect in the field of sustainability, it is one of the main priorities of the KMG Strategy and HSE Policy. HSE questions are heard monthly at the meetings of the Management Board and BoD of KMG, increasing the responsibility of managers and specialists. A practice of personal accountability of Directors General of subsidiaries to the KMG BoD of KMG has been introduced for every fatal case in the workplace.

In December 2018, the Board of Directors established an independent Committee on Safety, Health and Environment and Sustainability. Prior to that, this function was performed by the Strategy and Innovation Committee.

Further, in accordance with the decision of the Board of Directors, in December 2018, the Board of Directors established the Committee on Safety, Health and Environment, and Sustainability to assist the Board of Directors on the following issues:

- Safety, health and environmental protection.
- Implementation of the principles of sustainability in strategic planning and socio-economic development of KMG.
- Social obligations and programs of KMG within the framework of concluded contracts for subsoil use.

- KMG business continuity management.
- KMG environmental efficiency.

Starting from 2019, the meetings of this Committee are scheduled on a quarterly basis, the Committee consists of five independent directors. Thus, the Board of Directors holds an expanded discussion and analyses of economic, environmental and social impacts, as well as related risks and opportunities, four times a year.

More information about GRI disclosures 102-15, 102-30, 102-31, 102-33, 102-34, 102-35, 102-36, 102-37, 102-38, 102-39 (risk management, BoD activity, BoD remuneration) is specified in the Annual Report http://ir.kmg.kz/storage/files/272ede75d8454f06/KMG_ANNUAL_REPORT_2018_ENG.pdf.



Offsite meeting of the Board of Directors

SUSTAINABILITY IS OUR STRATEGIC GOAL

GRI 102-16

In 2018, the Board of Directors approved a new KMG Development Strategy until 2028 (hereinafter – the Strategy), which defines corporate governance and sustainability as one of the three strategic goals of the Company for the next ten years. Implementation of the strategic goal “Corporate Governance and Sustainability” should be resulted in establishment of a management system that ensures achievement of improved indicators of corporate social responsibility, health, safety and environment, improving the economic impact in the presence regions, combating corruption, improving the quality of relations with stakeholders, improving the rating of corporate governance and corporate culture of ethics.

The Action Plan for implementation of the Strategy includes in the corporate key performance indicators (KPI) the indicators related to implementation of sustainability components in the Company and its business units. Next year sustainability KPIs are planned to be integrated in the system of strategic and medium-term planning and KPI tree of the Company.

In order to implement and introduce the sustainability system, a Guide on Sustainability Management System for the KMG Group of Companies will be developed in 2019.

When planning KPIs for 2019, KPIs for sustainability is reflected as follows:

Sustainability indicators	Description
Economic indicators	Financial and economic KPIs are included in the maps of Deputy Chairmen of the Management Board
Environmental responsibility	Relevant KPIs to achieve full utilization of historical oil wastes are provided for the HSE Managing Director and the HSE Co-Managing Director, as well as the General Director of “Embamunaygas” JSC, “Ozenmunaygas” JSC.
Social responsibility	Relevant KPIs on social stability, labor resources, etc. are included in KPI Map of the Managing Director for human resources. In 2019, an indicator of contractors’ safety management and contractors’ reporting transparency is planned to be introduce as KPI. Contractors make up more than 50% of our workforce, and improving their safety will ultimately affect KMG’s overall performance.

In 2018, the Company underwent an independent diagnostics of the corporate governance system assessment. Assessment of the “Sustainability” component includes such areas as the purpose and KPI of sustainability, corporate ethics, a system of confidential reporting, the process of combating the legalization of illegally obtained income, the involvement of suppliers and owners of contracts, social programs, environmental objectives, purpose of occupational health and safety system for sustainability and reporting.

In the overall assessment of the corporate governance system, the “Sustainability” component as one of the five components occupies 20%.

Our key performance indicator for sustainability is an achievement of the following main goals:

1. The Company ensures the consistency of its economic, environmental and social objectives for long-term sustainable development, which includes the growth of the Company’s long-term value.
2. The Company implements a system that allows consistent and continuous follow the principles of sustainable development.

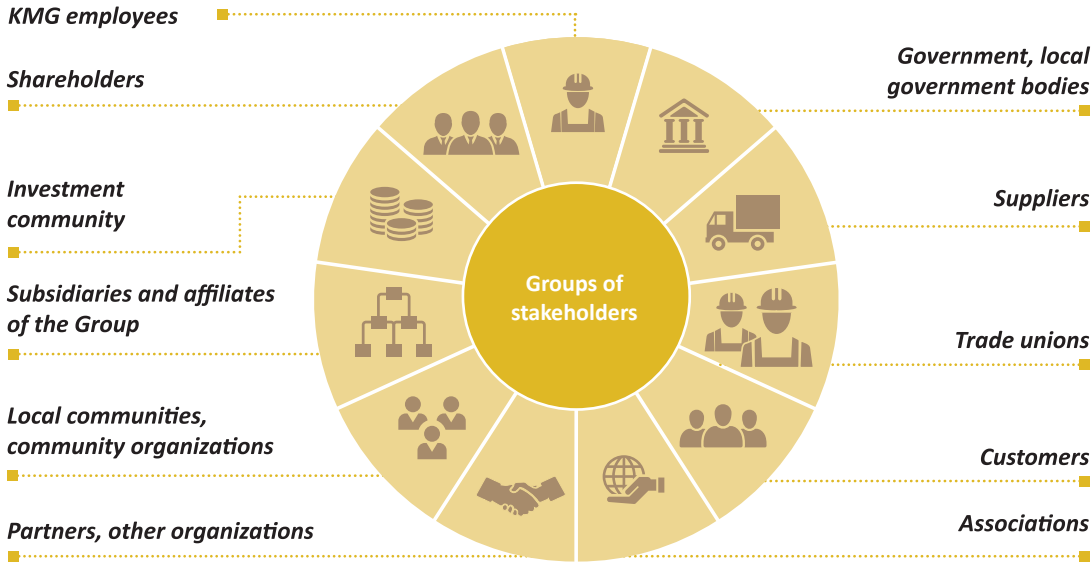
In 2018, a rating of B (average level) was achieved for the above goals.

STAKEHOLDER INTERACTION

GRI 102-40, 102-42, 102-43

KMG carries out a full production cycle from the exploration and production of hydrocarbons, their transportation and processing to the sale of oil and oil products both inside Kazakhstan

and abroad, and represents the interests of the state in the oil and gas sector. Due to its complex structure and activities, KMG interacts with a wide range of stakeholders.



Identification of stakeholders

KMG on an ongoing basis takes measures to establish a dialogue and long-term cooperation and management of relations with the Stakeholders.

In KMG, a Stakeholder Map has been prepared, taking into account risks and ranking, taking into account the dependence (direct or indirect), obligations, situation (paying special attention to high-risk areas), influence, various (diverse)

perspectives. Plans of stakeholder interaction for effective implementation of the tasks are drawn up.

In identifying and interacting with stakeholders, KMG applies best practices for stakeholder engagement, including international standards, such as the AA1000SES Stakeholder Engagement Standard.

Methods of stakeholder interaction include the following:

Interaction level	Interaction methods
<p>Consultations Bilateral interaction; Stakeholders answer the questions of the Fund and organizations</p>	<p>Questionnaires; focus groups; meetings with stakeholders; public meetings; seminars; providing feedback through means of communication; advisory councils</p>

Interaction level	Interaction methods
Negotiations	Collective negotiations based on the principles of social partnership
Involvement Bilateral or multilateral interaction; building expertise and knowledge from all sides; stakeholders and organizations operate independently	Multilateral forums; consulting panels; consensus-building process; the process of joint decision-making; focus groups; feedback schemes
Cooperation Bilateral or multilateral interaction; joint building of experience and knowledge, decision-making and measures	Joint projects; joint ventures; partnership; joint initiatives of stakeholders
Delegation of authority Stakeholders participate in the management	Integration of issues of interaction with stakeholders in management, strategy and operations

KEY AREAS OF INTERACTION

GRI 102-43

IR / Investor relations

Classification of stakeholders:

- Holders of bonds;
- Investment banks;
- Rating agencies;
- Potential investors of KMG;
- Kazakhstan Stock Exchange JSC;
- Depository of financial statements of the National Bank of the Republic of Kazakhstan;
- Other professional market participants.

Disclosure of information about the activities of KMG occurs in accordance with the applicable requirements of stock exchanges, which are addressed by KMG securities and the requirements of the legislation of the Republic of Kazakhstan regarding disclosure of information.

The list of KMG investors is replenished on a regular basis after meetings, conferences, road shows. The list consists of investment banks and KMG bond holders, as well as professional market participants who showed interest in KMG

activities. As for the internal structural units, depending on the specifics of the issue, the IR team interacts with the financial and production blocks (upstream, midstream and downstream), as well as directly with SDEs, if necessary.

Maintenance of communications with the investment community is provided through the following IR activities:

- Quarterly conference calls with investors on the results of the company's activities for the previous quarter;
- Road-shows, meetings with investors;
- Answers to inquiries about the activities of KMG from interested investors, investment banks / companies, financial analysts, etc. by e-mail ir@kmg.kz or by phone;
- Publication of periodic IR materials on financial and production results of KMG – press releases, presentation for investors, brochure on KMG, KMG factsheet, Annual report;
- Maintaining the “Investors” section of the KMG website <http://www.ir.kmg.kz>.

Investor interaction

Period	Event	Place
January, 2018	Road show with investors (non-deal road-show)	Frankfurt, London, Boston, New York
February, 2018	Meetings with investors in the framework of conferences	Miami
March, 2018	Conference call with investors on the results of financial and operational results for 2017	Nur-Sultan
June, 2018	Conference call with investors on the results of financial and operational results for Q1 2018	Nur-Sultan
September, 2018	Meetings with investors in the framework of conferences	London
September, 2018	Conference call with investors on the results of financial and operational results for Q2 2018	Nur-Sultan
October, 2018	Road show with investors (non-deal road-show)	Frankfurt, London, New York
December, 2018	Conference call with investors on the results of financial and operational results for Q3 2018	Nur-Sultan

PR / Public Relations:

Classification of stakeholders:

- Kazakhstani and foreign media;
- Foreign mass media;
- Local and regional communities;
- Board of Directors;
- Government bodies;
- General public.

In compliance with the principles of transparency and openness, the Company interacts with all the republican and regional media, including placing information on the official website of the Company for access to all interested parties, distributing information messages, providing answers to media inquiries, organizing press conferences with an invitation all interested media and so on.

Maintaining communications with the media and the general public is ensured through the following PR activities:

- Publication of press releases, information messages, articles on the Company's website and in the media;
- Providing answers to media inquiries;
- Conducting forums, production meetings, info-sessions, etc. with the invitation of the media;

- Organization of briefings and interviews with the Company's management.

Frequency of interaction depends on important events in the Company, planned PR activities, requests.

The Company improves a system of external communications aimed at developing a dialogue with external audiences and informing stakeholders about significant events in the KMG activities, building reputation and promoting the KMG brand.

The Company's key tool for information disclosure and feedback to external audiences is the official website <http://www.kmg.kz>. The Department of Public Relations promptly provides comprehensive and detailed information on corporate projects, comments on important topics of the industry-wide information agenda at the request of media representatives.

KMG regularly holds press conferences and briefings with the Company's top management and leading mass media, and organizes press tours to production facilities for journalists.

Basic principles of KMG information policy:

- frequency, consistency and timeliness of information;
- equal, unhindered and easy access for all stakeholders;
- objectivity, reliability, completeness and comparability of the disclosed data;

GR / Government Relations:

Classification of stakeholders:

- Authorized bodies of the RoK.
- International organizations / Partners.
- Foreign embassies, agencies.
- Profile structural subdivisions of KMG SDEs and “Samruk-Kazyna” JSC.

GR is the only structural unit of KMG, which performs centralized collection and preparation of consolidated information on the general activities of KMG and SDEs. GR subdivision provides execution of requests / requests of the Administration of the President of the Republic of Kazakhstan, the Government of the Republic of Kazakhstan, the Parliament of the Republic of Kazakhstan, “Samruk-Kazyna” JSC and the state bodies of the Republic of Kazakhstan by sending a meaningful letter of reply. There are no principles for the selection of interested parties for interaction with government bodies in GR-activities.

Interaction with state bodies is carried out by:

- sending a meaningful letter of reply to the request of government agencies;
- assisting KMG structural divisions on initiative issues (proposals concerning the activities of the KMG Group, on issuing permits, regulatory and licensing documents, for participation in joint working groups);
- preparation and compilation of information on the general activities of KMG for submission to the Administration of the President of the RoK, the Parliament of the Republic

- neutrality of information, i.e. exclusion of the possibility of priority satisfaction of the interests of one audience over another;
- reasonable balance between the Company’s openness and its commercial interests.

Interaction with mass media is governed by the KMG Regulations of Information Disclosure.

of Kazakhstan, the Government of the RoK, “Samruk-Kazyna” JSC and other state bodies;

- preparation of information materials for the meetings of the Oil and Gas Council under the President of the RoK, the Interdepartmental Commission for the Development of the Oil and Gas and Energy Industries under the chairmanship of the Prime Minister of the RoK;
- Coordination of participation of management and representatives of KMG in:
 - events of state significance, in official visits of the Head of State abroad;
 - in intergovernmental events, work of the Intergovernmental Commissions and committees for cooperation with foreign countries, major international events (conferences, forums) in RoK and abroad.

International organizations / Partners, foreign embassies, agencies:

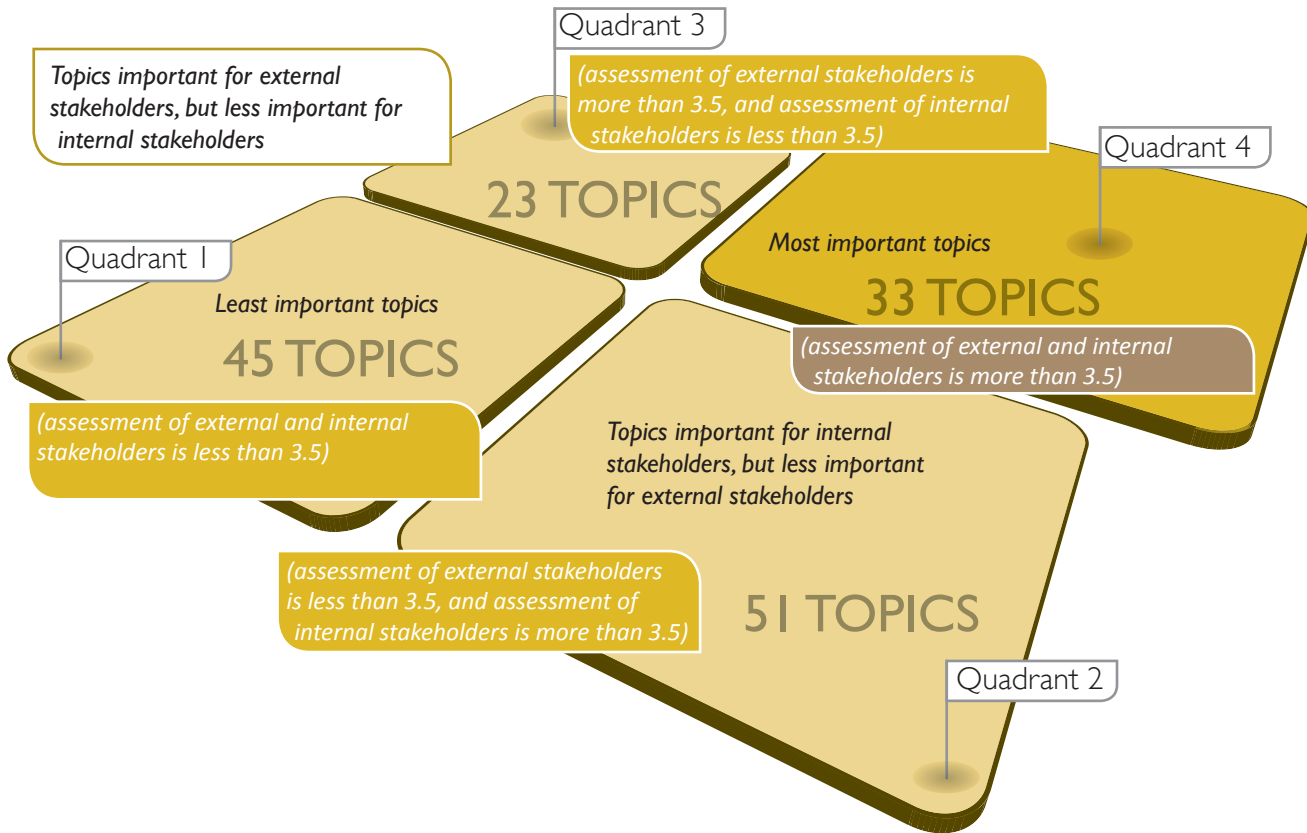
- Protocol-organizational and information support for meetings and negotiations of the Chairman of the Board of KMG with representatives of foreign states, international organizations and foreign companies.
- Profile structural subdivisions of KMG SDEs and “Samruk-Kazyna” JSC.
- A frequency of interaction depends on the questions posed, the type of GR activities and GR tasks. The interaction takes place promptly through calls, Electronic document management system (EDMS), e-mail.

IDENTIFICATION OF MATERIAL TOPICS OF THE REPORT

GRI 102-46, 102-47

To assess and disclose material topics, the Report analyzed information on both external and internal stakeholders. Based on the results of the procedures, a materiality matrix was

constructed of 152 potential topics. This matrix is divided into 4 conditional zones (quadrants) according to the level of importance of those or other topics as presented below.



To select the most significant topics from the general list of potential topics, certain procedures were carried out aimed at prioritizing and ranking topics. In other words, so-called “filters” were applied.

Internal filters are:

- Workshop or seminar for KMG employees;
- Online survey of KMG management.

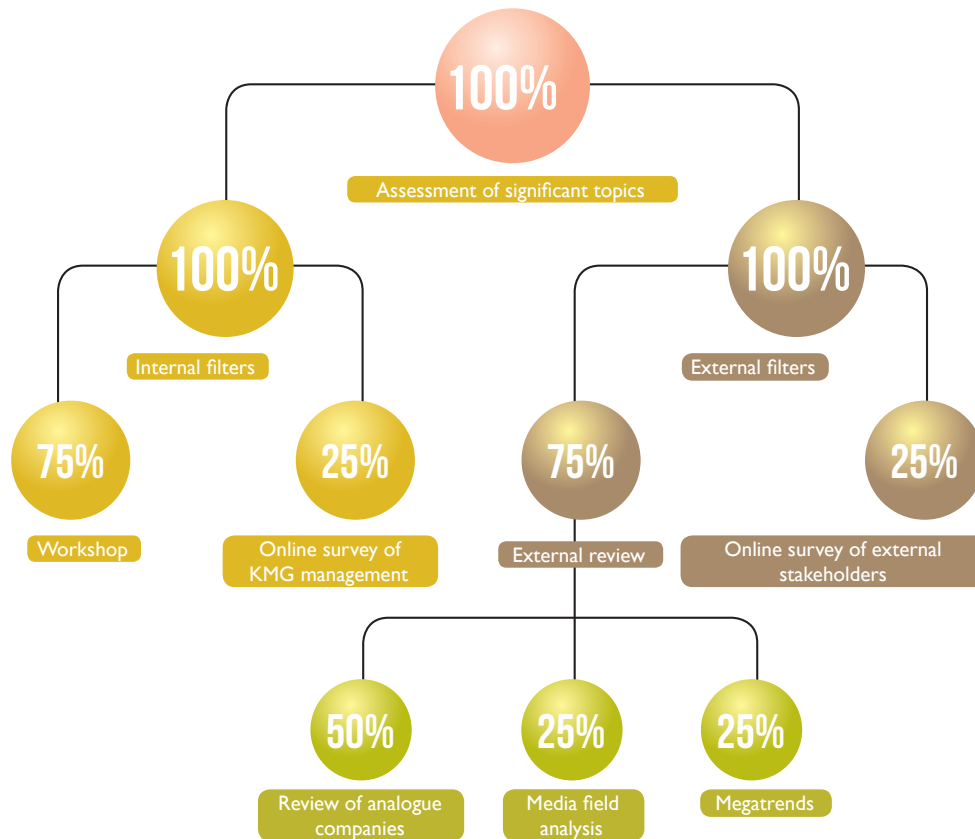
External filters are:

- Online survey of external stakeholders;
- Media field (mass media) analysis;
- Review of reports of analogue companies;
- Analysis of global trends, so-called “Megatrends”.

A certain correction factor (weights) was applied to each filter and only after that the values were used to build the matrix. Figure shows the distribution of weights for each source.

Distribution of weights in the assessment structure of significant topics

GRI 102-47



The results of internal and external filters on the horizontal and vertical axes of the matrix, respectively, were used to construct the materiality matrix. For some topics, the value was raised “manually”, which was assigned a maximal point 7. The rating scale used in the matrix ranges from 1 to 7 points. Accordingly, the same range from

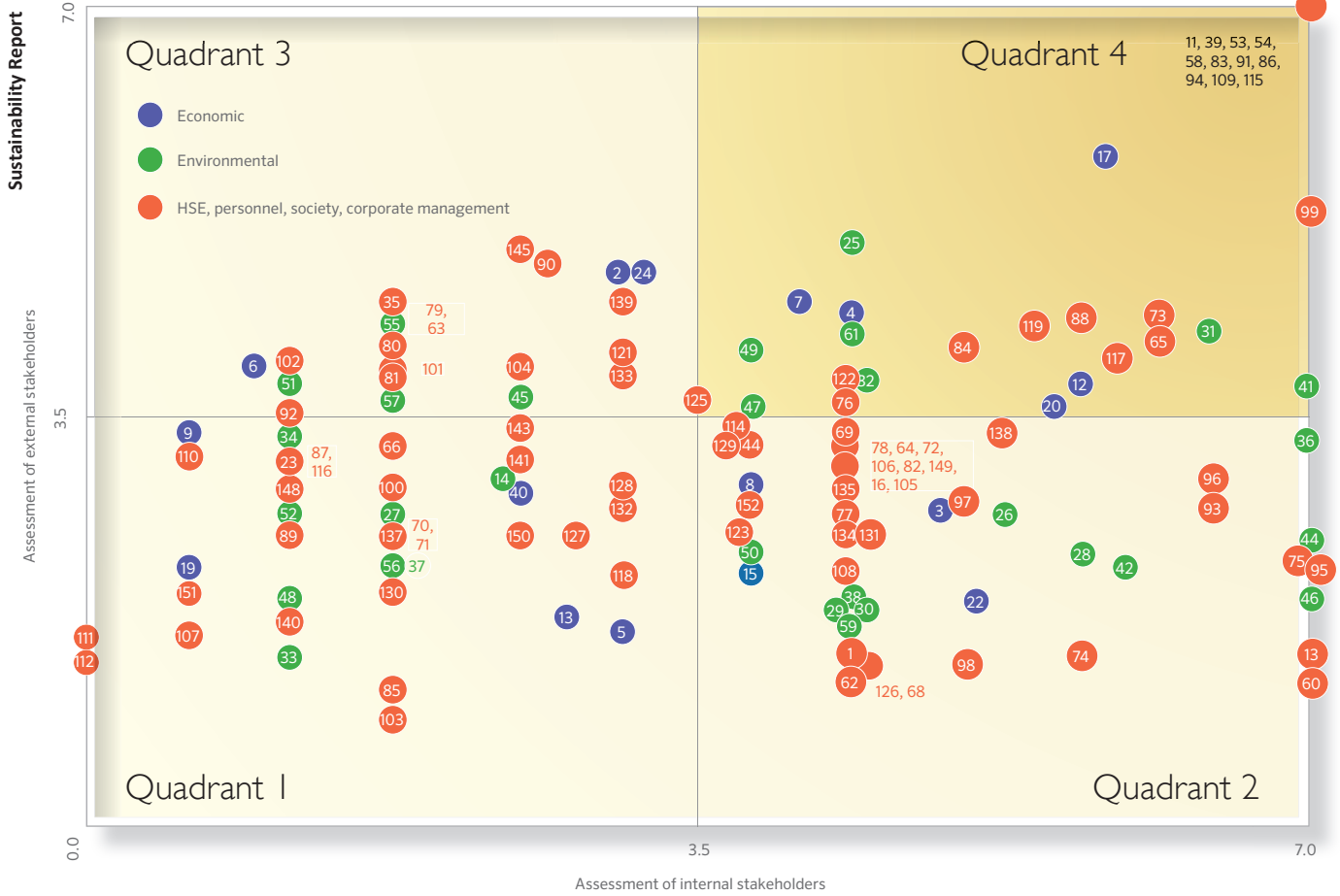
1 to 7 was used to determine the materiality value for each filter.

Online stakeholder survey was prepared in a similar way to the KMG management survey.

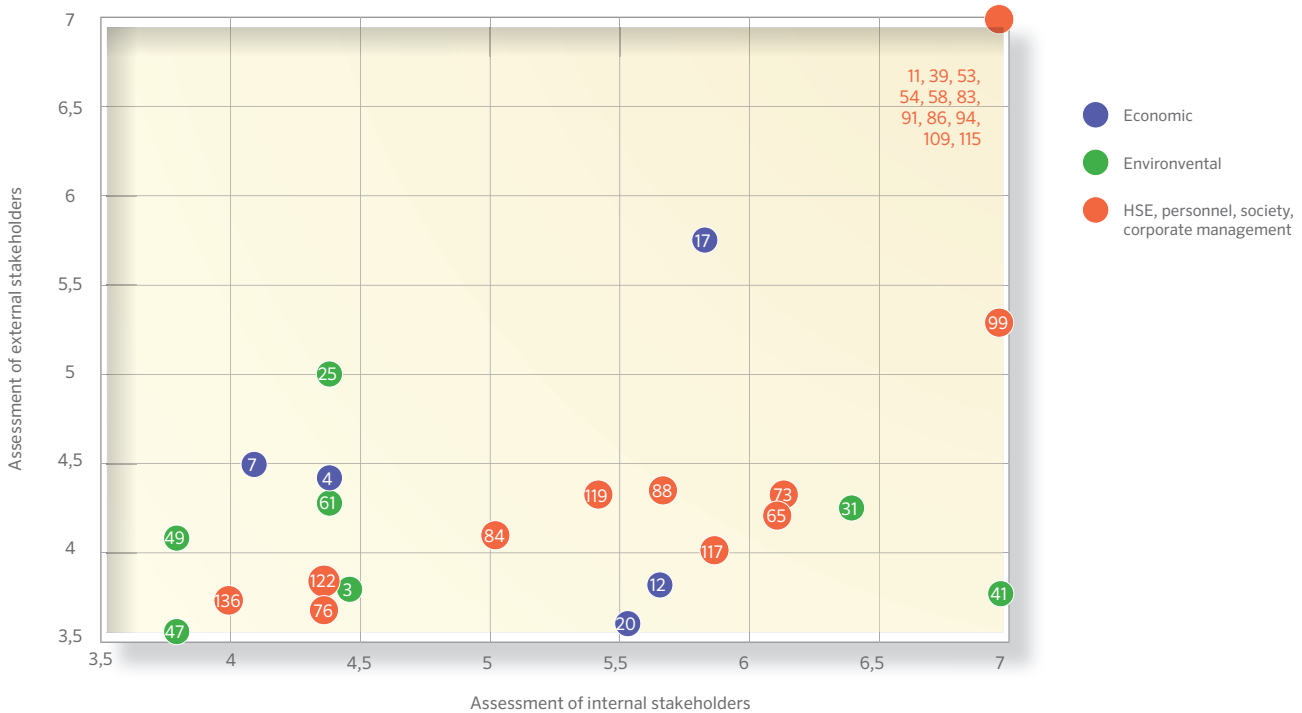
The materiality matrix of 152 topics is provided below.

The KMG materiality matrix for disclosure in the Report for 2018

GRI 102-47



Quadrant 4



List of significant topics

GRI 102-47

Economic topics	
4	Investments for production upgrading
7	Key financial indicators
11	Company's approaches to procurement and work with suppliers
12	Company's approaches to ensuring responsibility for its products: quality and compliance with requirements
17	Main objectives and directions of the strategy
20	Production results by types of products
Environment	
25	Water use
31	Air pollutant emissions
32	Measures to reduce flaring of associated petroleum gas
39	Information on protected areas in the presence regions
41	Impact on biodiversity
53	Compliance with the environmental protection requirements
54	Types and volumes of waste generation
58	Energy consumption
47	Climate change risks and adaptation
49	Participation in international/local environmental/climate change initiatives
61	Measures to improve energy efficiency and reduce energy intensity
Personnel, company, corporate governance	
65	Fatal accidents
73	Injury rate
76	Transport security
83	Salary and benefits package
84	Staff health and safety
86	Collective agreement
88	Staff training and education
91	Recruitment
94	Employee incentive program
99	Investments in infrastructure of the presence regions
109	Local content in procurement
115	Sponsorship and charity
117	Employment of local staff in the presence regions
119	Combating corruption
122	Business ethics / Corporate governance
136	Availability of the company's development strategy, its availability

ETHICS AND FAIR PRACTICES

GRI 102-16

Values, Principles, Standards and Code of Conduct

In 2018, Company approved a new Code of Business Conduct (hereinafter – the Code) which enshrines KMG's corporate values, defines the most important principles and rules of business conduct and stakeholder relations, and is a set of corporate ethics requirements to be followed by all employees of the Company.

The Code is an important part of KMG's corporate governance system; it contributes to the long-term economic growth of the Company. The provisions of the Code apply to KMG employees, regardless of their position. KMG employees are required to familiarize themselves with the principles and recommendations of the Code and comply with them.

In our daily work we are guided by the following corporate values and principles:

GRI 102-16

“SAQTYQ” / Safety

1. life and health of our employees is an absolute priority for KMG;
2. we are uncompromising in matters of safety and health;
3. we take care of the environment and treat KMG property as our own;
4. we follow ethical standards, rules and try to do the right thing;
5. we keep information confidential.

“BIRLIK” / Unity

1. a desire for KMG common success unites us into a single team;
2. people and interaction are more important to us than processes and tools;
3. we believe that everyone can and wants to make the maximum contribution to the common cause, which is capable of;
4. we efficiently solve tasks in the team, regardless of positions and functions. The overall result is above the individual one;
5. we use each other’s strengths and complement each other.

“SABYR” / Reasonableness

1. we treat each other with honesty and understanding;
2. we respect our colleagues, contractors and partners and treat them as we would like other people to treat us;
3. we are ready for difficulties and overcome obstacles;
4. making decisions, we comprehensively consider questions, we take into account all advantages and disadvantages, we hear and we consider all points of view;
5. we respect the results and achievements of the past and ensure continuity.

“SAPA” / Quality

1. we always try to achieve the highest results;
2. we always keep our promises with high quality and on time;
3. we work for the benefit of our internal and external customers;
4. we simplify, standardize and streamline our work;
5. we are constantly looking for new opportunities to do something better. We want to be the first and the best.

According to the approved Code, the KMG activities are based on the following principles:

- Openness**
- Responsibility**
- Transparency**
- Ethical conduct**
- Respect**
- Legality**

- Professionalism**
- Justice**
- Intolerance of corruption**
- No conflict of interest**
- Environmental responsibility**
- Safety**

KMG adopts and follows the provisions of this Code in its relations with KMG shareholders, employees, subsidiaries and affiliates, government agencies,

partners and other stakeholders, both in business decision-making and in everyday situations.

The Code is a public document and is freely distributed to KMG business partners and any other stakeholders. It is also posted on the Company's website in the "Corporate Documents" section.



MECHANISMS FOR SEEKING ADVICE ON UNETHICAL CONDUCT

GRI 102-17

We have developed various mechanisms through which employees, business partners and stakeholders can report any non-compliance with corporate ethics, human rights, labor practices, negative environmental or social impact:

- **Employees** – by informing their direct supervisor or superior; or by providing information to the Ombudsman (by phone 78-65-60, or via email: ombudsman@kmg.kz).
- **Employees and others** – by phone 78-65-60, or via email of trust: ombudsman@kmg.kz.
- "Hot line" calls by phone 8-800-080-1994, e-mail: sk.hotline@deloitte.kz, or at www.sk.deloitte-hotline.com.

For confidentiality purposes, all information is accepted and processed by an external independent company. This company draws up

report on received complaints and sends it to the Compliance Service on a daily basis.

Compliance Service employees decide on further actions to consider received complaints in accordance with internal policies.

In accordance with the best international practice, including the standards and principles of the International Association of Ombudsmen (IAO), the KMG Ombudsman is accountable to the Board of Directors of KMG and is an independent high-level manager who advises and contacts the employees, participants in labor disputes and conflicts assistance in the development of a mutually beneficial, constructive and realizable solution, taking into account the observance of the norms of the legislation of the Republic of Kazakhstan (including necessity), assistance in resolving the problematic social and labor issues of both employees and KMG and the organization, as well as in observing the principles of business ethics of KMG employees and organizations.

When resolving disputes within the Company, the Ombudsman seeks to help the parties to the conflict resolve it through peaceful settlement. For this purpose, the Ombudsman can act as a consultant, negotiator, mediator or a resolution lawyer, while adhering to the principles of objectivity, confidentiality and independence. In the process of conflict resolution, the Ombudsman relies on the principle of equality and fairness, which contributes to improving the moral and psychological climate in the workplace



Hotline

You can communicate any violations of the Code of Conduct, including but not limited to corruption, fraud, unethical behaviour or discrimination

We guarantee

confidentiality and anonymity
100% handling of reports

8 800 080 19 94
sk.hotline@deloitte.kz
www.sk.deloitte-hotline.com

All the received reports will be collected and handled by an independent Deloitte company

Deloitte.

and increasing the motivation and loyalty of employees.

The activities of the Ombudsman allow KMG to also comply with international standards for dealing with conflict resolution (ISO 10003), and work with complaints (ISO 10002) provided by the International Organization for Standardization.

We strive to prevent any kind of disputes and conflicts in the organizations of the Group. The right of any person to appeal should not be violated.

In addition, within the Unified System of Internal Communications there are such mechanisms as:

- meetings of managers with labor collectives and trade union;
- reception of employees by a CEO on personal issues;
- CEO blog;
- Boxes for proposals.

Applications for non-compliance with the Code of Business Conduct are considered with the obligatory participation of the Ombudsman on the terms of confidentiality.

The Group management is informed when any applications are received. All received complaints and proposals are recorded, a decision of the management on the results of consideration of an application is brought to an applicant.

INFORMATION BELIEF SYSTEM AND “HOT LINE”

GRI 102-17

Active preventive work on anti-corruption issues has led to a certain increase in involvement of employees and other persons to use the capabilities of the information belief system (hereinafter – IBS), by phone 78-65-65, or by e-mail of trust: doverie@kmg.kz, (confidentiality is guaranteed), as well as the Fund’s hot line by phone 8-800-080-1994, by e-mail: sk.hotline@deloitte.kz or to www.sk.deloitte-hotline.com and other channels in order to inform about all known or established violations in the KMG Group.

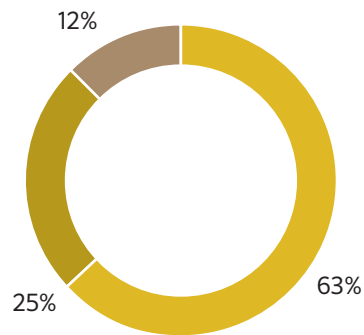
Thus, in 2018, 67 applications were received only through KMG IBS, another 57 applications were received through the same channels of subsidiaries (in 2016 – 65, in 2017 – 60, respectively). 24 applications were received through the Fund’s hotline. 48 applications were received as part of personal reception of KMG management and postal communication.

All applications of legal entities and individuals are considered in accordance with the established procedure and terms, with the adoption of appropriate measures and notification of their authors.

To avoid possible corruptogenic standards, more than 60 draft internal documents, more than 100 draft contracts on procurement of goods, works and services were examined. 413 employees and candidates for vacant administrative positions for involvement in corruption and other offenses were checked.

In total, over the past three years, more than 1,500 employees and candidates have been

Statements and appeals 2018, %



- ISD applications and appeals
- Postal communication and as part of personal reception of management
- Fund Hot line

checked for employment in the Company, while no information has been revealed that hinders the refusal to hire, for appointment in the order of transfer and nomination.

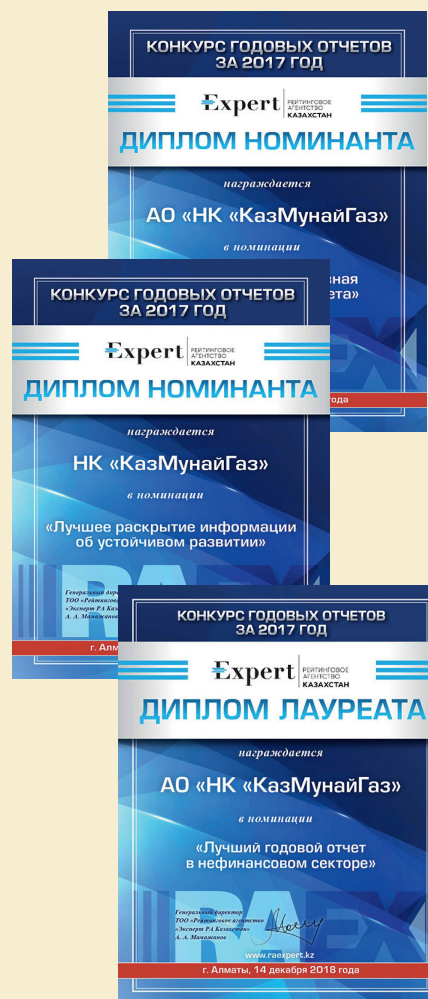
223 potential counterparties were checked for civil-legal solvency, and the related conclusions were provided to the initiators of the requests in a timely manner.

The 2017 KMG Sustainability Report and Annual Report were the best reports in the Annual Reports Competition

December 14, 2018, the ceremony of awarding laureates and nominees of the VIII Annual Report Competition, organized by the RAEX Rating Agency (Expert RA Kazakhstan), was held. In 2018, within the framework of the contest, 107 annual reports of Kazakhstan companies, including 44 financial organizations and 64 non-financial companies, were evaluated.

When determining a long list in the best annual report category, annual reports issued in Kazakhstan are analyzed, with the main emphasis on the content – the documents were selected which were featured by the most complete and qualitative disclosure of information. The short-list, consisting of ten reports, formed on the results of the preliminary analysis, was put to the vote of the Expert Commission which included professionals on corporate governance and reporting.

The KMG Sustainability Report and Annual Report took the first place among Kazakh companies as the Best Annual Report in Non-Financial sector and was nominated for two awards: the Best Interactive Version of a Report, the Best Disclosure of Information on Sustainability.



INITIATIVES AND MEMBERSHIPS

GRI 102-12, 102-13, 102-40

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



KMG supported this initiative in 2015. It unites governments, oil companies and development organizations that agree to cooperate to stop the practice of regular flaring of APG no later than 2030. Our goal is to increase the beneficial use and utilization of APG, minimizing flaring. We report annually on progress to the World Bank.

Global Methane Initiative



In 2017 KMG joined the Global Methane Initiative (GMI) Project Network, which is a growing community of private sector actors, financial institutions and other governmental and non-governmental organizations interested in methane emission reduction projects, as well as methane recovery and use. Working with countries that are partners of the GMI, the members of the Project Network can intensify their activities, setting the stage for specific methane projects. Supporting the initiative of KMG, the Ministry of Energy of the Republic of Kazakhstan entered the Subcommittee of Oil and Gas of the GMI.

CDP Climate Program



Since 2018, KMG has been participating in the submission of voluntary reporting on indirect greenhouse gas emissions under the CDP Climate Program.

Environmental responsibility rating for oil and gas companies in Kazakhstan



By the end of 2017 and 2018, KMG became the most transparent oil company in environmental issues in the rating of environmental responsibility for the oil and gas companies of Kazakhstan, organized by the Russia World Wildlife Fund and CREON Group of Companies with support of the Ministry of Energy of the Republic of Kazakhstan.

ISO International Organization for Standardization



Since 2006, the management system in the field of quality, environmental protection, health and safety at work has been maintained in accordance with the requirements of ISO 9001, ISO 14001 and OHSAS 18001.

Subsidiaries and affiliates with significant levels of energy consumption are certified according to ISO 50001.

In 2018 all companies of the Group successfully passed supervisory audits that confirmed the compliance of the existing integrated management systems with the requirements of international standards.

The Extractive Industries Transparency Initiative (EITI)



It is a global standard that promotes transparency of revenues from oil, gas and mining industries. We comply with the terms of the Memorandum of Understanding of the Initiative and provide reporting on taxes and other payments to the country's budget. <http://eiti.geology.gov.kz/en>

Membership in Associations

GRI 102-13

Kazakhstan Association of Oil and Gas and Energy Complex Organizations “KAZENERGY”



The management of KMG takes part in the work of several committees and working groups of the Association.

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

KMG and the Association of Legal Entities “Kazakhstan Association of Organizations of Oil and Gas and Energy Complex “KAZENERGY” signed a Memorandum of Cooperation.

The Memorandum provides for joint activities in such important areas of legal activities as the improvement of the legislation of the Republic of Kazakhstan, the development of joint programs and projects aimed at enhancing the legal culture; cooperation in holding roundtables, seminars, conferences on topical issues in the field of jurisprudence.



National Chamber of Entrepreneurs of the RoK “Atameken”

KMG and the National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” signed an agreement on cooperation in legal matters.

The agreement provides for interaction of the parties in such important areas of legal activity as the improvement of legislation, the development of joint programs and projects aimed at raising the legal culture, expanding the resolution of commercial disputes in arbitration.



The UN Global Compact

Demonstration of our commitment to the principles of sustainable development is membership in the UN Global Compact, as well as the annual posting of the Sustainability Report on the UNGC website as a Report on KMG’s progress in promoting the principles of the Global Compact and 17 Global Sustainable Development Goals.

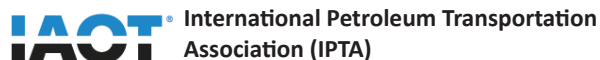


IOGP International Association of Oil and Gas Producers

Since 2018, KMG has become a full member of the International Association of Oil and Gas Producers. Our health and safety statistics will be publicly available and our performance indicators will be compared to that of more than 75 oil and gas companies worldwide. Our strategic goal is to enter the Top 20 companies in this list.

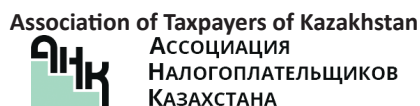


International Association of Scientific, Technical and Business Cooperation in Geophysical Research and Well Work (WRA)



Since 2015, KTO is a member of the IPTA to improve international oil transportation systems. The Association is considering issues related to the formation of tariffs,

diagnostics and operation of pipelines, transportation and storage of oil.



Union of Machine Builders of Kazakhstan



Kazakhstan Welding Association “KazWeld”



Union of Energy Engineers of the Republic of Kazakhstan



National Association of Business “IRIS”



Association of Marine Transport Entrepreneurs of the Republic of Kazakhstan



IOGP International Association of Oil and Gas Producers



Trans-Caspian International Transport Route Middle Corridor



In 2018, we resumed membership in the **Oil Spill Response Limited (OSRL)**.



A Memorandum between KMG and **Kazakhstan Bar Association** was updated. ■



Address by the Chairman of the Board of Directors

GRI 102-14, 102-44



Dear readers!

As you know, in September 2015, the leaders of 193 countries approved an ambitious comprehensive program named “Transformation of our World: 2030 Agenda for Sustainability” or “Sustainable Development Goals”. The Program is aimed to help the world community work together to create a better future. The scale of the goals suggests the need for a universal effort for their successful implementation. It is worth noting that business plays a significant role in this. Combating climate change and transforming the energy system are key challenges to a sustainable future for business, society and the environment. The Paris Agreement sent a strong and global message that the beginning of the transition to a low-carbon economy is inevitable.

As a major national oil and gas producer in Kazakhstan, we are aware of our impact on economic growth in the country and are responsible for implementation of our production and environmental programs. As one of the key national companies and stakeholders in the development of environmental legislation, KazMunayGas contributes to the fulfillment of Kazakhstan’s obligations under the Paris Agreement.

One of the areas in the field of sustainability where the Company has achieved significant results is the reduction of flaring associated petroleum gas (APG).

In 2018, the highest level of APG utilization in the history of the KMG Group of Companies was reached – 93 %. The gas flaring rate is 6 tons per 1,000 tons of produced RHM, which is almost 50 % lower than the IOGP global average (International Association of Oil and Gas Producers). We continue to implement the World Bank Initiative “Complete Cessation of Regular APG Flaring by 2030” and intend to stop the practice of regular APG flaring no later than 2030.

In 2018, we announced our participation in the initiative, The Carbon Disclosure Project (CDP) – an international community of investors for disclosure of information about direct and indirect greenhouse gas emissions and the risks associated with climate change, and began estimation of the carbon footprint of commercial products from the wellhead to end-use.

As a member of the UN Global Compact, we reaffirm our commitment to the principles of sustainability, support the sustainable development goals, paying special attention

to climate change, prevention of negative impacts on the environment, social responsibility and ensuring the economic growth of the Company.

Effective implementation of the sustainability principles into the main activity and strategy of the Company requires a high degree of involvement of all of us. All KazMunayGas employees should know that sustainability is of great importance. To do this, we need to focus on ambitious goals, adjust our policies, procedures and long-term strategies, train and motivate staff, implement the principles of sustainability into the management system and business processes, and ensure transparency in our reporting on efforts made and results achieved. Sustainability development requires a long-term vision and a willingness to make constant efforts to achieve positive results and to keep pace with a rapidly changing world.

**With respect,
Christopher John Walton**

CONTRIBUTION TO ECONOMIC DEVELOPMENT

In 2018, we approved a new Development Strategy for 2018–2028. The strategy defines the target state of the Company in the medium term as a stable company with an acceptable level of debt and a strict leverage management system.



Financial stability improvement

In 2018 we managed to cover losses and significantly improve our financial performance. In 2018, the KMG external debt was reduced, limits on investments were set and the regulations were adopted for project deadlines. We were also able to bring non-core activities into the market environment, which allowed us to reduce duplicate functions.

Contribution to Economic Development

LOW-CARBON DEVELOPMENT

GRI 102-15, 103-1, 103-2, 103-3, 201-2, 302-1, OG3

In our long-term KMG Development Strategy, we have identified the following priority areas on climate aspects:

- management of greenhouse gas emissions;
- reduction of regular flaring of associated petroleum gas;
- improvement in emission rates per production volume and energy efficiency.

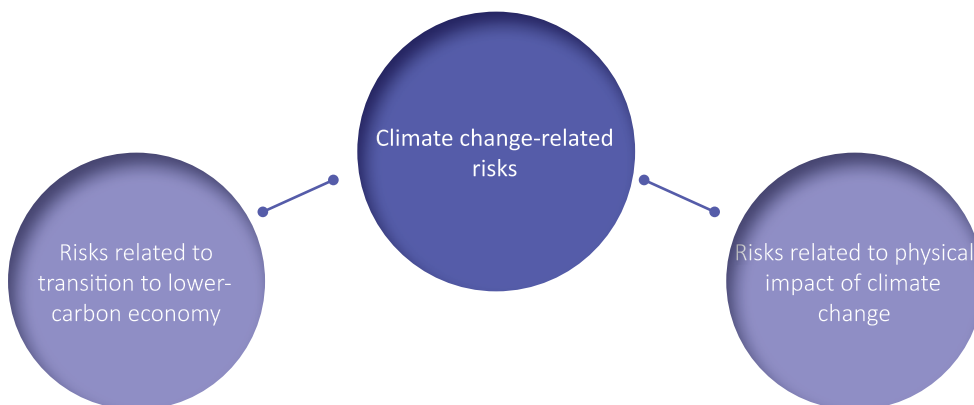
In 2018, KMG developed an emission management policy consisting of eight key principles, six of which are directly related to climate change:

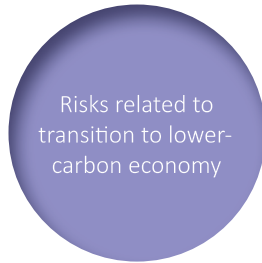
- compliance with the volume of established quotas for greenhouse gas emissions;
- regular accounting, inventory and monitoring of emissions, including indirect greenhouse gas emissions;
- cessation of regular flaring of raw gas while extraction of hydrocarbons;
- implementation of measures to reduce emissions and reduce the carbon footprint;

- carbon asset management;
- continuous improvement of emission management activities (e.g. forecasting, prevention and mitigation of climate change-related damage).

Climate change issues require the identification of risks and the adoption of measures to reduce burden on the environment.

The corporate risk management system is a key component of the corporate governance system and is aimed at timely identification, assessment, monitoring and reduction of potential risk events that may adversely affect the achievement of strategic and operational goals. We identify and report quarterly to the Board of Directors on the HSE risks, as well as include the risks related to climate change in the corporate risk matrix:





Political and regulatory risks (e.g., implementation of mechanisms for establishment/enhancement of carbon prices for reducing greenhouse gas emissions; transition of the state to distribution of quotas only through the use of specific emission factors as a result, some enterprises may have a shortage of quotas; reduction of energy consumption to reduce emissions; adoption of energy-saving solutions; strengthening of measures to improve water use efficiency and promoting more sustainable land use practices).

Market risk (a risk of changes in supply and demand for certain climate-related goods, products and services).

Technological risk (development and use of new technologies such as renewable energy sources (RES), energy-saving technologies, best available technologies (BAT), carbon capture and storage technologies, etc.).

Reputational risks associated with changing the perception of the Company by stakeholders in terms of its contribution to the transition to a low-carbon economy, or evasion of this transition.



Short-term risks caused by extreme weather events such as cyclones, hurricanes, floods.

Systematic (chronic) risks caused by long-term changes in climate models (e.g., long periods of abnormally high air temperatures, sea level rise and inundation of onshore wells).

SUSTAINABLE DEVELOPMENT GOALS



Principle 7

Businesses should support a precautionary approach to environmental challenges.



Principle 8

Undertake initiatives to promote greater environmental responsibility.

Principle 9

Encourage the development and diffusion of environmentally friendly technologies.

Principle 10

Businesses should work against corruption in all its forms, including extortion and bribery.



In order to mitigate these risks, we are actively involved as part of the Working Groups under the Ministry of Energy of Kazakhstan in improving the regulatory framework of Kazakhstan in the field of state regulation of greenhouse gas emissions.

Every year the Company builds new recycling facilities, reconstructs the existing production facilities, invests in the construction of pipelines and infrastructure, for example, the construction of integrated gas processing at the Prorvinskaya group of fields, the construction of the Saryarka gas pipeline. In 2019, it is planned to put the gas treatment plant-40 into full-scale operation at the Kozhasay field in Aktobe region. These measures contribute to the increase of APG utilization level and, accordingly, lead to the reduction of direct carbon dioxide emissions.

At the same time, the role of natural gas will grow in connection with the desire of electricity-generating companies to transit to fuels that would reduce emissions into the atmosphere. It is expected that in about ten years gas will become one of the main fuels for electricity generation.

As part of modernization in 2019–2021, it is planned to introduce at the Kazakhstan refineries an automated system of technical energy accounting to be implemented on the basis of microprocessor-based computing facilities and control systems, which is an information and computer system with centralized control and distributed measurement function. Implementation of this project will lead to:

- reduction of energy costs by optimizing the operating mode and quality control of electricity consumption;
- automation of the process of collecting and processing data on electricity consumption in the context of large consumers, units, assemblies;

- management of power consumption modes, increasing the efficient electricity use in the technological processes of the refineries;
- predictive analysis, real-time monitoring;
- creation of a common environment for monitoring and analysis of electricity consumption of subsidiaries and affiliates of KMG Oil Refining;
- development of a statistical database on electricity consumption in the context of time and facilities;
- identification of emergency situations and development of solutions;
- implementation of one of the main steps in establishment of a digital enterprise.

Also, research of the current level of development of the Kazakhstan refineries is in progress as compared with the world's best refineries under the HSB Solomon Associates LLC methodology (hereinafter – Solomon). The purpose of Solomon's research is: determination of the main indicators – “Solomon indices” – refineries in a comparable basis, i.e. how effectively the available capacity is used. Performance indicators are designed to compare refineries that are similar in size and configuration, and are better used for operational comparisons that allow comparison of refinery performance (both production and economic) with the performance of other refineries in different groups.

In 2019, it is planned to install solar panels with a total capacity of 10 kW to power the lighting network of the industrial site of “Amangeldy Gas” LLP.

Renewable energy sources (hereinafter – RES) implemented in KTG subsidiaries and affiliates in previous years operate effectively: waterkotte geothermal heat pumps; monocrystalline solar panels (batteries); thermoelectric generators (Closed cycle vapor turbogenerator).

The total amount of generated (produced) renewable energy by sources for 2018 was:

Output of geothermal (thermal) energy by heat pumps is
678.53 Gcal

Output of electric power generation solar panels is
103,572 kW*hour

Output of electric power generation by thermal power generators (TPG – Rankine cycle) is
240,900 kW*hour

ECONOMIC PERFORMANCE

(GRI) 102-7, 103-1, 103-2, 103-3, 201-1, 201-4

The Company makes a significant contribution to development of the Kazakhstan regions, increase of socio-economic capacity and improvement of welfare of the population of the regions.

The economic performance of the Company allows assessing this contribution to the country's economy, revenues, liabilities and taxes paid.

KMG does not receive financial assistance from the state.

Direct economic value generated and distributed*

Indicator	Units	2016	2017	2018
Direct economic value generated (gross revenue)	KZT billion	4,035	5,451	7,905
Economic value distributed (gross expenses)	KZT billion	3,675	4,926	7,211
Economic value retained (profit)	KZT billion	360	525	694

Indicator	Units	2016	2017	2018
Other taxes and payments (without CIT)	KZT billion	781	914	1,258
Income tax paid	KZT billion	106	113	186
Payments to providers of capital	KZT billion	294	275	291

* Data are taken from the KMG Audited Financial Statements for 2018, prepared in accordance with the international financial reporting standards (IFRS). Economic performance indicators are presented in accordance with GRI Standards (201-1).



(GRI) 201-3

Social Benefits and Pension Contributions

In accordance with the national legislation, pension savings of citizens are in the Unified Pension Savings Fund. Pension savings consist of: the minimum pension rate guaranteed by the state, the individual pension savings (monthly contribution of 10% of salary) and additional regional allowances.

In addition to the state social security and pension program, the KMG Group implements a pension program for non-working pensioners, according to which employees, after

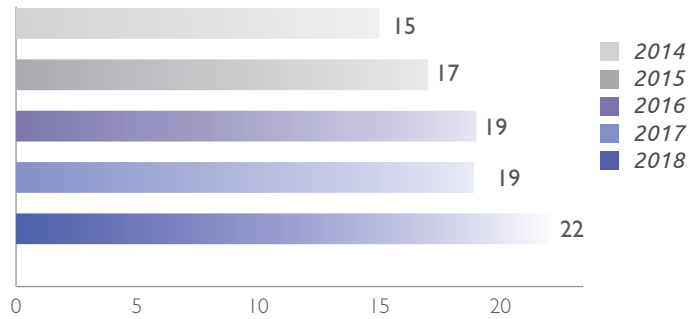
going on a well-deserved rest, can receive some material support.

In some oilfield service organizations of KMG Group of Companies, such as "Oil Transport Corporation" LLP, "Oil Construction Company" LLP, "Oil Services Company" LLP, a project is implemented on provision of the pre-retirement age employees with early retirement with compensation to be paid upon termination of labor relations by agreement of the parties with employees who have reached retirement

age, with compensation being paid upon termination of labor relations.

In 2018, expenses for social support of KMG Group employees amounted to KZT 22 billion (in 2017 – KZT 18.9 billion), including social assistance to non-working pensioners.

Social support of KMG Group employees, KZT billion



Indicator	Units	2016	2017	2018
Social benefits and pension contributions paid	KZT billion	43	52	52

Indirect Economic Impacts

Capital expenditures for 2016–2018

GRI 203-1, 203-2

Indicator	Units	2016	2017	2018
Capital expenditures	KZT billion	554	669	628

As part of the region gasification program, KazTransGas continues the gasification and modernization of settlements in Kazakhstan. A road map has been developed for implementation of Five Social Initiatives of the President of Kazakhstan in terms of the Project “Construction of Gas Distribution Networks to Connect to Saryarka Pipeline”. The project will create the necessary conditions for development of production capacities of the existing enterprises and the establishment of new plants, stable gas supplies to Nur-Sultan and Central Kazakhstan, improving the environmental situation, improving the quality of life of the population, attracting and increasing employment of the local population by creating additional jobs at the stage of construction and operation of the main gas pipeline and infrastructure facilities of the main gas pipeline, as well as

stable socio-economic development of Nur-Sultan and central regions.

In 2018, the following investment projects were successfully completed:

1. Increase in Capacity of Kazakhstan – China Pipeline (Line C). With the commissioning of the third line of the gas pipeline (Line C), the capacity of Kazakhstan – China Pipeline was increased to 55 billion m³ per year.
2. Expansion of Gasification of Kostanay Region Settlements. 7 settlements have been gasified (Kachar settlement in Rudny, Oktyabrsky settlement in Lisakovsk, Toguzak village in Karabalyk district, Antonovka, Alchanovka in Denisovsk district, Auliyekol in Auliyekol district – a supply pipeline has been commissioned, continued gasification in Rudny). In total, the Project plans to connect about 7 thousand new

- subscribers, including 6.7 thousand houses and apartments, 184 small municipal enterprises, 12 industrial enterprises (with a total consumption of 28 million m³ of gas).
- As part of the gasification of the Northern and Central regions of the Republic of Kazakhstan, the Saryarka Pipeline construction DED was developed in 2018.

In 2018, the following new investment projects were launched:

- Construction of three compressor stations at Beyneu – Bozoy – Shymkent Pipeline.
- Work has begun on development of a Feasibility Study “Increase in Capacity of Kazakhstan – China Pipeline (Lines A and B) to 40 billion m³ per year.
- Work has begun on development of a Technical and Economic Assessment to expand the capacity of Beyneu – Bozoy – Shymkent to 15 billion m³ per year.
- Gasification of Almaty, modernization, reconstruction of gas distribution systems of Almaty. The Project contributes to improvement of the environmental situation in the city, will connect about 4.1 thousand new subscribers to the gas supply with an average annual consumption of 15.8 million m³ of gas.
- “MunaiTas” LLP launched the Kenkiyak – Atyrau oil pipeline reverse project. The project is aimed at ensuring the transportation of West Kazakhstan oil in the amount of up to 6 million tons per year to PPCP and PKOP.

Investments for Production Upgrading

GRI 203-1

It is planned to continue work in the framework of investment projects for modernization of gas distribution networks:

- Modernization of the gas distribution system in Taraz. From 2012 to 2018, 862 km of new gas pipelines were built and 29 thousand subscribers were re-connected to the new gas supply system. In 2019, the construction of about 38 km of gas pipelines is planned, the completion of the project is planned.
- Modernization, reconstruction and new construction of gas distribution system of the Mangistau region settlements. Since 2015, 1,323 km of gas pipelines have been built and modernized, 6 sets of automatic gas distribution stations, 34 gas distribution cabinet points, 41 gas distribution block points have been installed. 5 settlements have been gasified.
- Gasification of Almaty, modernization, reconstruction of gas distribution systems of Almaty. The project envisages the construction of 288 km of gas pipelines, the reconstruction of 101 km of gas pipelines and 34 cabinet gas control points.

As part of modernization of the Kazakhstan refineries, the following investments were made:

- Complex of deep oil refining within the framework of Atyrau refinery modernization: assimilation of CAPEX for 2018 is KZT 54,172.8 million (without VAT)
- Modernization and reconstruction of Shymkent refinery is KZT 260,730 million (without VAT)
- Modernization of Pavlodar Oil Chemistry Refinery was completed in December 2017.

Modernization of the refineries will ensure the production of K4, K5 motor fuels, as well as significantly reduce emissions of harmful and polluting substances. As a result of the reconstruction and modernization of the capacity of oil refineries will be 17.5 million tons per year, and one of its main results is a significant increase in output of light oil products (including gasoline, diesel fuel), which ensured the elimination of their deficit in the country.

Other capital expenditures in 2018 amounted to KZT 16.7 billion, which also included the construction of the Martial Arts Palace in Nur-Sultan.

PROCUREMENT PRACTICES

(GRI) 103-1, 103-2, 103-3, 102-9, 204-1

One of the principles of procurement in Company is to provide all potential suppliers with equal opportunities to participate in the procurement process.

At the same time, the current system of procurement of goods provides for an open tender or procurement through a request for price offers only among producers of goods purchased, which are members of the Register of producers of “Samruk-Kazyna” JSC, and also only among organizations of persons with disabilities producing purchased goods, which are members of the Register of organizations of persons with disabilities. In addition, the Procurement Rules provide special conditions for the procurement of goods that are used by the subsoil users of “Samruk-Kazyna” JSC who have concluded subsoil use contracts before January 1, 2015, before the expiration of such contracts or until January 1, 2021, whichever comes first. These special conditions stipulate that subsoil users are obliged, in accordance with the requirements of paragraph 3 of Article 78 of the Law of the Republic of Kazakhstan “On Subsoil and Subsoil Use”, to purchase goods from Kazakhstani producers of goods subject to their compliance with the requirements of the project document and the legislation of the Republic of Kazakhstan in the area of technical regulation.

The procurement process includes the following main steps:

- development and approval of the annual (long-term) procurement plan;
- selection of the supplier;
- conclusion and execution of the procurement contract.

The choice of the suppliers of KMG and its SDEs is mainly carried out by way of holding an open tender with the use of tenders for downgrade, in the manner of requesting price proposals, as well as from one source, in accordance

with the Rules of Procurement of Goods, Work and Services of “Samruk-Kazyna” JSC (hereinafter – the Rules).

All purchases are conducted through the Electronic Procurement Information System in accordance with the Instructions for the conduct of electronic procurement.

An important aspect when choosing a supplier of goods, works, services is to conduct procurement procedures in strict accordance with the Procurement Rules of “Samruk-Kazyna” JSC without any violations affecting the results. This indicator is included in the Map of Key Performance Indicators of the Management of KMG and its SDEs.

“Samruk-Kazyna” JSC has developed and approved a Special Procurement Procedure for Qualified Potential Suppliers, which includes conducting pre-qualified selection of potential suppliers and forming a database of potential suppliers that have been prequalified.

It should be noted that the possibility of establishing requirements for potential suppliers in terms of social criteria is not provided for in the Procurement Rules for goods, works and services of “Samruk-Kazyna” JSC, which regulate the procurement procedures of KMG organizations. In this regard, the establishment of social criteria when choosing a supplier can be assessed by “Samruk-Kazyna” JSC as a restriction of competition.

At the same time, the provisions on observance of human rights and social criteria are reflected in the model contracts for the procurement of goods, works and services of KMG, as well as in the approved Code of Business Conduct.

The purchases of goods, works and services in 2018 amounted to 2,428 billion tenge.

The total amount of procurement of goods, works and services and the share of local content (bn, KZT)

Year	Total	LC share, %	Goods		Works & Services	
			Amount	LC Share, %	Amount	LC Share, %
2016	1,870	76	721	83	1,149	71
2017	2,553	75	863	79	1,690	73
2018	2,428	79	824	77	1,604	80

The above indicators reflect consolidated data for all subsidiaries of KMG, in which fifty or more percent of voting shares (interests) are directly or indirectly owned by KMG under the right of ownership or trust management, and which are subjects of the Procurement Rules for goods, works and services of Samruk-Kazyna JSC.

The amount of procurement from resident companies of Kazakhstan

Bn, KZT

Year	Total	Goods	Works & Services
2016	1,602.5	637.5	965
2017	2,257.9	775.1	1,482.8
2018	2,280.8	739.8	1,541

In 2018, the purchase of goods, works and services from resident companies of Kazakhstan (regardless of the citizenship of their employees and the availability of certificates of origin of goods of the form "CT-KZ") amounted to KZT 2,280.8 billion, which is 93.9% of the total amount of purchases.

At the same time, the calculation of the local content share in the procurement of goods,

works and services is made on the basis of the Unified Methodology of Local Content Calculations for the Procurement of Goods, Work and Services, approved by order of the Minister for Investment and Development of the Republic of Kazakhstan No. 260 dated April 20, 2018.

The word "local" means domestic enterprises that produce goods and have a certificate of origin of the form "ST-KZ", which indicates the percentage of the share of local content. When calculating local content in a contract for the performance of work (the provision of services, except for the contract for performance of work (rendering services) purchased in the framework of subsoil use contracts, the share of the payroll of Kazakhstani personnel in the total wage fund of employees is taken into account.

ANTI-CORRUPTION

The Company is taking systematic, organizational and practical measures to prevent corruption among the employees of the Group of companies. In 2017, by the decision of the KMG Management Board, the "Rules for conducting anti-corruption monitoring and internal analysis of corruption risks" (hereinafter – Rules) and "Anticorruption Standard" were approved and implemented.

Previously adopted economic security policy defines main directions for countering corruption and other unlawful manifestations

GRI 103-1, 103-2, 103-3, 205-1, 205-2, 205-3, 406-1, 409-1

which are against the interests of the Group of companies and its employees.

The specified documents in the state, Russian and English languages are posted on the websites of KMG and its subsidiaries and affiliates. Data displays in KMG head office regularly broadcast informational clips on matters of preventing and combating corruption among KMG employees the information monitors.

In accordance with the Rules, a system analysis of corruption risks in the Group of companies is carried out on a quarterly basis, the activities of structural units of KMG and its subsidiary dependent entities on anti-corruption and compliance with anticorruption legislation are studied and evaluated.

The regulations for management organization of production and non-production risks, Risk Identification and Assessment Methodology at KMG and its subsidiaries and affiliates conduct quarterly monitoring and analysis of the state of anti-corruption risks for the entire group of the Company, providing a report on risk dynamics and the progress of the implementation of the preventive action plan.

At the same time, in the course of carrying out procedures for identifying risk factors affecting the corruption risks of the Group of companies, methods of quantitative and qualitative risk assessment have been used.

As part of the work carried out in 2018, 3 actualized risks of a corruption nature, such as theft, bribery and conflict of interest (in 2016 – 2 risks, in 2017 – 0) were recorded. For commission of corruption offenses, 2 criminal cases were initiated against 3 employees with whom the employment agreement was terminated on the initiative of the employer and all of them were convicted by the courts with various punitive measures. 5 cases of violation of the rights of workers related to the illegal termination of employment contracts and disciplinary proceedings have been established.

There were no cases of renewal or termination of contracts with business partners due to violations related to corruption during 2018.

The Agency of the Republic of Kazakhstan on Civil Service Affairs and Anti-Corruption (hereinafter – the Agency) and KMG also conducted an external analysis of corruption

risks in the activities of KMG. Based on the results of the analysis, a number of risks were identified when hiring personnel and resolving conflicts of interest, for which appropriate recommendations were given.

With the aim of eliminating and resolving the risks identified by the audit, with the participation of the Agency, a joint Action Plan was developed and implemented. All suppliers of goods, works and services of KMG, its subsidiaries and affiliates have been notified of the presence of anti-corruption requirements in the Group of companies and anti-corruption methods.

Starting from 2017, all contracts of KMG and its subsidiaries and affiliates on the procurement of goods, works and services are supplemented by a section on countering corruption which states that each party to the contract has a zero-tolerance policy to corruption, and each party is governed by applicable law and on its basis, policies and procedures aimed at combating bribery and commercial bribery.

Placing internal documents of KMG and SDEs on anti-corruption issues on corporate websites, broadcasting info-clips, including anti-corruption clauses in contracts with counterparties made it possible to achieve almost full familiarization coverage of employees, as well as potential contractors and other individuals with anti-corruption requirements, profiled in the company.

All employees of the corporate security divisions of the KMG Group of companies carry out their work in accordance with the requirements of the legislation of the Republic of Kazakhstan and are guided by the provisions on structural divisions and job descriptions.

According to information received from the subsidiaries and affiliates, there were no cases of abuse of power, violations of the workers' rights by employees of the corporate security divisions in the exercise of their duties. ■



ENVIRONMENTAL RESPONSIBILITY AND SAFETY IN THE WORKPLACE

Ensuring industrial safety and environmental responsibility is the important task for us. The Company's goodwill, reputation and financial well-being depend on successful solution of this task. Today we focus on transparency of environmental reporting, and thanks to this, for the second year in a row, KMG holds the highest place in the Rating of openness of oil and gas companies of Kazakhstan in the field of environmental responsibility*.



Gas utilization growth

In 2018, the highest level of APG utilization in the history of the KMG Group of Companies was reached – 93 %. The gas flaring rate is 6 tons per 1,000 tons of produced hydrocarbons, which is almost 50% lower than the IOGP global average. We continue to implement the World Bank Initiative “Complete Cessation of Regular APG Flaring by 2030” and intend to stop the practice of regular APG flaring no later than 2030.



Environmental indicators disclosure

In 2018, we announced our participation in the Carbon Disclosure Project (CDP) initiative – an international community of investors for disclosure of information about direct and indirect greenhouse gas emissions and the risks associated with climate change, and began estimation of the carbon footprint of commercial products from the wellhead to end-use.

* Environmental responsibility rating for oil and gas companies <https://www.zs-rating.ru/>

OUR APPROACH

GRI 103-1, 103-2, 103-3, 302, 303, 304, 305, 306, 307, 403

The objectives for managing health, safety and environmental issues are directly related to the Group’s Development Strategy. In 2018, the KMG Strategy 2028 was expanded with the strategic initiative “Environmental Responsibility” which sets priorities for the Group in terms of environmental protection (managing greenhouse gas emissions and reducing gas flaring, water management, production waste management, land reclamation and increasing energy efficiency). In terms of occupational safety, our goal is to enter the top quartile of international oil and gas companies within the IOGP in terms of safety performance.

We carry out production activities in accordance with the requirements of national legislation and the Group’s Policy in the field of occupational safety, industrial safety and environmental protection, approved by the decision of the KMG Management Board on May 24, 2016. The Policy applies to all employees of the Group, as well as employees of contractors who provide services at our facilities. In 2019, it is planned to improve the Policy and develop the Environmental and Health and Safety Policy.

The HSE activity is coordinated in the corporate center by the Vice President for Safety and Environment. The corporate center analyzes achievements and identifies areas for improvement, goals and objectives for future activities in the field of HSE and energy efficiency, conducts benchmarking with past periods and with similar indicators of the leading international companies in the industry (IOGP, IPIECA).

Also, in 2017, a three-tier system of HSE Committees was introduced: at the level of KMG’s Board of Directors, Functional Committee for HSE, Safety and Environmental Protection at the level of KMG management, HSE Committees at the level of subsidiaries

and affiliates. The purpose of creating a system of committees is to manage the transformation process in terms of health, safety and environmental protection.

Key Indicators for Evaluating the Effectiveness of Activities in the Areas of Health, Safety and Environmental Protection

Health and safety KPIs

Fatalities

- Number of fatalities
- Fatality rate (FAR) per 100 million people-hours

Lost time

- Lost Time Injury Rate (LTIR)
- Motor vehicle accident rate (MVAR)

Recordable cases

- Total Recordable Injury Rate (TRIR)
- Major (LTIR)

Health

- Total sick days
- Non-work related fatalities

“Safety, environment and social performance are now closer to the core of our business plans and decisions”.

Alik Aidarbayev, CEO

Environment KPI's

Spills and discharges

- Volume of sabotage spills
- Volume of operational spills
- Number of sabotage spills
- Number of operational spills
- Upstream flaring CO₂ equivalent
- Upstream hydrocarbon volume flared

Emissions

- GHG emissions
- GHG intensity / unit of hydrocarbon
- NO₂ & SO₂ emissions / unit hydrocarbon

Waste and Water

- Elimination of legacy pollution and remediation of hydrocarbon contaminated land
- Legacy waste & contaminate land
- Reducing of freshwater use

Energy use

- Energy intensity (by business division)
- Energy efficiency (%)

"A culture of safe work and respect for the environment is determined by behavior and personal beliefs. We are working on the continuous promotion and distribution of information, statistics on labor protection and environmental aspects through all communication channels in KMG. The message that safety is the main value of our company is cultivated in the minds of our managers and employees".

Vincent Spinelli, HSE Managing Director

SUSTAINABLE DEVELOPMENT GOALS



Principle 7

Environment: Businesses should maintain a cautious approach in dealing with environmental problems.



Principle 8

Environment: Businesses should take initiatives to promote greater environmental responsibility.

Principle 9

Environment: Businesses should encourage the development and diffusion of environmentally sound technologies.

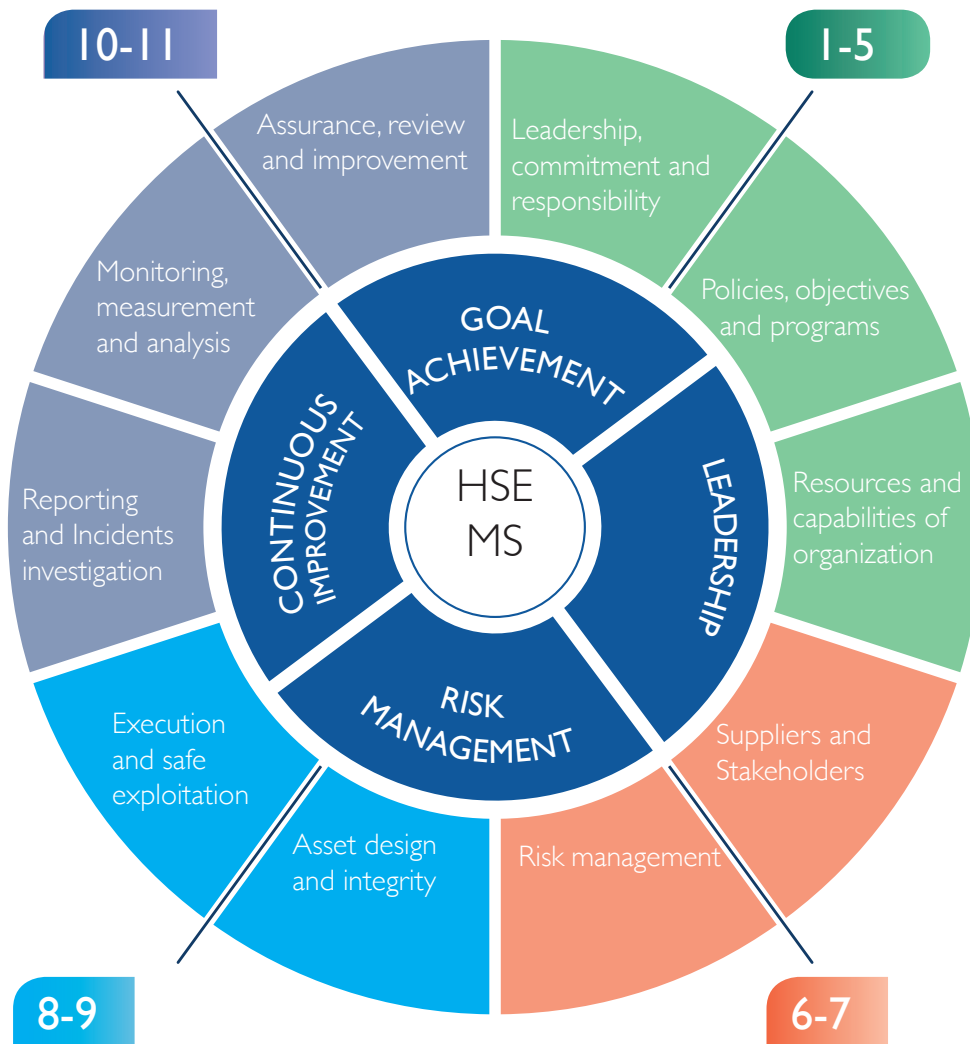
HSE Management System

In September 2018, the Guidelines for Health, Safety and Environment Management Systems were approved. This document has changed the approach to managing HSE issues in the Company. The guide was developed based on the best international practices – recommendations of the Association of Oil and Gas Producers (IOGP) and applies to the KMG Group of companies. This system is based on four fundamental principles: Leadership, goal

achievement, risk management and continuous improvement.

Also, in KMG, since 2006, the management system in the area of quality, environmental protection, health protection and occupational safety is maintained in accordance with the requirements of ISO 9001, ISO 14001 and OHSAS 18001. Subsidiaries and dependent organizations with a significant level of energy consumption are certified to ISO 50001.

HSE MS Structure & Industry Best Practices Implementation



1. LEADERSHIP

- Leadership commitment: Leadership Forums, SPE
- 3 tier HSE Committee System

2. GOALS

ZERO

- Incidents
- Spills
- Discharges
- Routine Flaring

3. STRATEGY

- Provide safety at work
- Environmental responsibility

4. POLICIES

- HSE policy
- Transport policy
- Alcohol policy
- Air emissions management policy

5. STANDARTS

- Development & implementation of HSE standards, based on worldwide best practices

6. STAKEHOLDERS

- Contractor Standard
- Contractors Reporting
- Public hearings

7. RISK MANAGEMENT

- Risk Management System
- BBS program
- Risk Assessment Standard
- EIA

8. ASSET INTEGRITY

- Fire safety preparedness
- LOTO
- Process Safety Management System

9. EXECUTION

- Health System Management
- Transport Safety Program
- Crisis Management Standard
- Methane leak detection program
- Waste Management standard
- Water Management standard
- Energy efficiency Roadmap

10. MONITORING

- HSE Reporting Rules
- HSE Database automatization
- HSE KPI system
- Incident Investigation Procedure
- Automated "Incident investigation" module
- Benchmarking

11. ASSURANCE AND IMPROVEMENT

- HSE Management System Assessment
- HSE Committee System
- HSE Compliance and RT Audits
- HSE awareness Campaign

The corporate center uses various means of communication, which allow to properly build a dialogue with stakeholders and the Company, as well as in the prescribed manner to bring information to the Board of Directors of KMG. Thus, the discussion of problematic issues with the shareholder is carried out in the framework of the meetings of the BoD and its Committees through representatives of the shareholder who are members of the BoD and its corresponding committees.

Health, safety and environmental issues are monthly heard at meetings of the KMG's Board of Directors, which increases the responsibility of managers and specialists.

Since 2017, a three-tier system of Health, Safety and Environment Committees started its activities: at the level of the KMG BoD, the Functional Committee on Health, Safety and Environmental Protection at the management level of KMG, the HSE Committees at the level of subsidiaries and affiliates. The purpose of creating a system of committees is to manage the process of improvement in occupational health, safety and environmental protection. The senior management of KMG, production managers and managers for HSE of the SDEs have become members of the Functional Committee on Health, Safety and Environmental Protection.

WORKPLACE SAFETY

GRI 103-1, 103-2, 103-3, 403-2

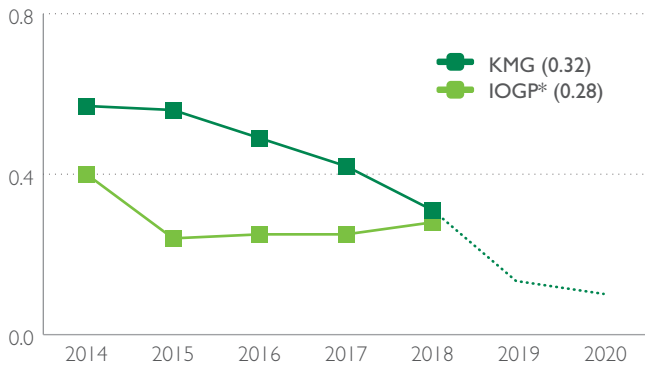
Over the past 4 years, great work has been done in KMG in occupational safety, industrial safety and environment (hereinafter referred to as HSE), while 2018 was the best in terms of safety and health indicators. We have achieved our goal – to enter the top 20 global industry companies in terms of safety by 2020 in terms of the fatal accident rate, and by 2020 the Company expects to enter the top-most injury rate.

The number of injured in accidents, including fatal accidents, decreased to a historic low – 35% (50 injured in 2018) compared with 2017 (77 injured, respectively). As part of the membership in the International Association of Oil and Gas Producers (IOGP), we submit annual OSH reports and conduct benchmarking with global oil and gas companies.

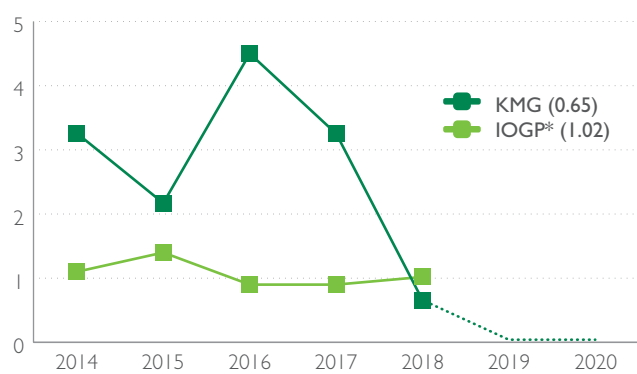
The total number of injured male workers amounted to 44 people, female – 6 people. Based on results of the analysis of types of incidents, it was revealed that 80% of injuries are caused by falling/sliding/tripping, falling from a height and effect of moving equipment/items or energized equipment. In order to reduce injuries, it is planned to conduct offsite meetings on HSE issues in 2019 in order to clarify the essentiality of observing industrial safety measures.

There is a significant decline in road traffic accidents (25%) and driving injuries (47%). Over the past three years, a large-scale campaign has been carried out to equip vehicles with safety belts, and passenger vehicles with GPS systems, which have already brought significant results: in 2016 there were 71 accidents, in 2017 – 89, in 2018 – 67.

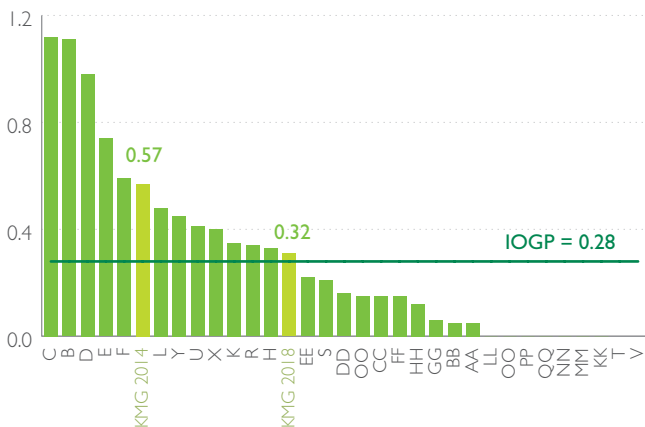
Lost Time Incident Rate (LTIR per 1 million people-hours)



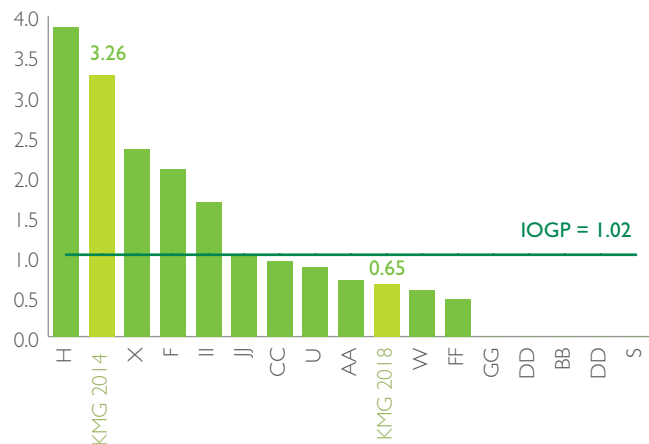
Fatality Accident Rate (FAR per 100 million people-hours)



Comparative analysis of KMG LTIR with industry average



Comparative analysis of KMG FAR with industry average



* IOGP – International Association of Oil & Gas Producers (<https://www.iogp.org/>)

Over the past 2 years, the focus has been on more thorough GPS monitoring and actions taken on violations, as well as a campaign to increase seat-belt use using a seat-belt simulator (Convincer), not only among drivers, but also workers, using vehicles in everyday life and their family members. So, by the end of 2018, there were 4 “Convincer” simulators simulating the work of seat belts in case of the accident throughout Kazakhstan, and more than 8,000 demonstrations were held. This helped to raise awareness of the importance of using seat belts and reduce the number of people injured in road traffic accidents (by 47%).

Key events to improve safety culture and reduce injuries at work, implemented in 2018:

- Conducted defensive driving training aimed at developing driving skills, changing drivers’ attitude to safety. There were 12 people trained.
- The conduct of safety behavioral observations (hereinafter – SBO) of works (SBOW) continues – 68,263 observations were made.
- Implemented Driving Safety Behavior Monitoring Program – 23,495 observations conducted.

The visual success of the program is the fact that due to the training and experience, as well as the correct behavior of the management, the unsafe behavior is immediately corrected, the safe behavior is highly appreciated. This program has improved communication and the relationship between the managers and the employees by demonstrating caring and personal responsibility for safety. A detailed study of each category of SBO allowed the management to accurately identify problem issues in business areas, as well as subsidiaries and affiliates for the development and implementation of corrective action plans.

As part of the process of automating the HSE database, 4 modules have been completed: “PNB”, “Culture Assessment”, “Incident Investigation” and “Audits”.

- Continuous work is carried out on the development and implementation of corporate documents based on international best practice, ensuring a consistent and widespread approach to occupational safety and health issues across the entire KMG Group of companies.

КазМұнайГаз
NATIONAL COMPANY • ҰЛТТЫҚ КОМПАНИЯСЫ

KMG GOLDEN RULES

MESSAGE FROM THE CEO

The Golden Rules set out clear, simple and consistent communication regarding our highest safety risks. These rules apply to all employees and contractors working for KMG companies. The best-performing companies operate within a simple framework of rules and trust their employees to do the right thing. Our Golden Rules will help us do the same – save lives!

I expect our workers, leaders, managers, supervisors and contractors to make a personal commitment to understand and follow the Golden Rules. Safety will always be a core value and shall be based on respecting each other and our rules.

My message is simple, «If you choose to break the rules, you choose not to work for the KMG»

Chairman of the Board
JSC NC “KazMunayGas”
Alik Aidarbayev

- Fit for work
- Driving safety
- Permit to work
- Energy isolation
- Confined space entry
- Working at height
- Moving and energized objects
- Lifting operations

- A 3-tier system of HSE Committees has been implemented and is working.
 - Comprehensive audits were carried out at subsidiaries and affiliates with a high level of injury, based on the results of which, corrective action plans were developed and implemented to reduce the risks of industrial accidents.
 - Field presentations were conducted to educate employees on new safety programs, and top management on the importance of their involvement in security processes.
 - The IV Annual General Directors' Forum in the field of occupational safety and health was held on the theme "100% occupational safety as a personal matter of everyone". Similar forums are held in SDCs for line managers.
 - The IV annual competition of the Chairman of the KMG Board "The best innovative ideas and practices in the field of health, labor and environment protection of the KMG Group of companies was held.
- Developed and implemented awareness programs for field workers, including the following main activities:
 - preparation and distribution of quarterly messages from the Chairman of the Management Board to employees with the aim of increasing safety culture;
 - brochures on the topic "Prevention of heart attacks and strokes" were developed and published and distributed to the KMG Group of companies.
 - image products with HSE logo sent to subsidiaries and affiliates.
 - animated screensaver "100% security" installed on computers of employees of subsidiaries and affiliates, etc.
 - KMG holds meetings with the portfolio companies of Samruk-Kazyna JSC to share experience in the field of HSE.

HEALTH CARE AND WORKPLACE HYGIENE

GRI 103-1, 103-2, 103-3, 403-3, 403-4

Management of issues in the area of health protection and work hygiene in KMG and SDEs is carried out in accordance with the requirements of Kazakhstani legislation: the Labor Code, the Health Code, the Sanitary Regulations and Instructions of the Republic of Kazakhstan, International Health protection and Work Hygiene Requirements. In addition, the Company enters into collective agreements with employees, in which special attention is paid to the protection of health and safety at the workplace. All employees of the Company are covered by an annual medical examination, in addition, employees of subsidiaries and affiliates undergo a daily pre-shift and post-shift medical examination.

Number of days of incapacity for work due to diseases of employees of SDEs was 216,203 days in 2018, which is on 8,362 days less than in 2017, or 3.7%. Number of mortality cases, not related to injuries among SDE employees decreased by 5 cases compared to 2017, or by 19.2%.

The range of harmful production factors inherent in the oil and gas industry has the risk of occupational

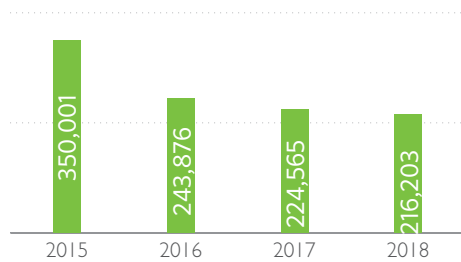
diseases. Issues on their monitoring and determination are regulated in accordance with the legislative requirements of the RoK.

KMG Group of companies takes a set of measures to prevent and monitor cases of detection of occupational diseases at production facilities on a regular basis. The final decision on identification of occupational disease is made according to the results of a number of examinations carried out by the relevant organization: Institute of Public Health and Professional Health of "MUK" NC JSC.

According to the results of medical examinations there were no cases of occupational diseases (acute or chronic) in the KMG Group of companies during the reporting period.

Within the framework of the implementation of the Roadmap on improvement of labor and the environment protection in the KazMunayGas Group – 2020, approved by the decision of the Board on 27.09.2016, corporate health programs are introduced by the KMG, first of all, related to reduction

Number of days of incapacity for work due to diseases



of workers diseases and mortality, not related to injuries.

In 2018, a corporate campaign to improve healthcare of KMG “Prevention of heart attacks and strokes” was developed and implemented, aimed at preventing and reducing mortality among workers associated with cardiovascular diseases. The implementation of the “10 steps to recovery” initiative and the internal regulatory document “Regulations on the organization of emergency medical care in the KMG Group”. The main tasks of these regulations are to establish requirements to provide workers with emergency medical care, to equip first-aid posts and to maintain an emergency medical response plan.

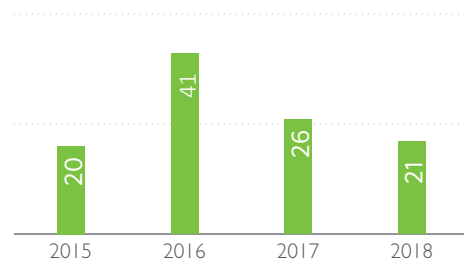
Following activities were performed for improvement and effective management in the area of health protection and labor hygiene:

1. Comprehensive inspections of subsidiaries and affiliates were carried out with the involvement of specialists on occupational health and hygiene

Plans for 2019:

We do not plan to stop on the achieved success, because we realize that the improvement of the HSE management system is an ongoing process. Now that KMG is on the right track in terms of improving labor protection, health and transport safety, we are ready for a new challenge – management of contracting organizations. In 2019, we plan to establish an indicator for contracting organizations’ safety management and transparency of contracting organizations’ reporting as a KPI. Contractors comprise more than 50% of our operating personnel, and increasing their safety will ultimately affect overall performance of KMG. Our expectations are aimed at ensuring that all employees of the KazMunayGas Group of companies and all contracting organizations always go home safe and sound. We will continue to work towards our goal of ensuring 100% industrial safety.

Number of mortality cases not related to injuries



from other companies of the Group in order to share experience;

2. A training (seminar) has been organized and conducted on occupational health and hygiene of the subsidiaries and affiliates on the subject of “Professional pathology and certification of workplaces on working conditions” (based in the National Center for Occupational Health and Occupational Diseases in Karagandy);
3. 10 audits were conducted at SDEs for compliance with occupational health and safety requirements;
4. production sites and workshops, rest rooms for employees, domestic premises, canteens and medical aid stations were examined, and according to the results, the inspection identified deviations from the norms and 70 recommendations were issued;
5. Based on the conducted regular medical examinations (RME) of employees at the SDEs, action plans for 2018 were developed for the recovery of identified patients on the basis of the final reports of the RME.

In addition, the priorities for 2019 are:

1. The key labor protection program planned for 2019 is the launch of the pilot project “Accident-free Reporting”. In 2017 and 2018, the focus was on identifying and correcting unsafe behavior. The Accident Free Reporting program will focus on unsafe working conditions. This program will involve ordinary workers and give them the opportunity to express their concerns.
2. Restarting the Golden Rules program, which has proven its success.
3. The NPS program is no longer a KPI, but a strategic initiative and will be monitored through the HSE Committees.
4. Despite the fact that the number of injuries decreased to the lowest level in the entire history of KMG, by 35% compared with 2017, 21 of 48

cases of injuries fell on hands and / or fingers, which is 43 % of the total number of injuries. In this regard, in order to solve this problem, in 2019 we are launching a program to prevent injuries to these areas called “Preventing injuries to hands and fingers”.

5. In October 2019, KMG will hold the 1st Caspian Symposium on HSE in Kazakhstan, which will attract more attention to safety issues than ever before, and about 400 participants from around the world will take part in it.
6. Introduction of the Crisis Management Center and conducting training sessions.
7. Development of a corporate standard for risk management and process safety management.

8. Development and implementation of the main corporate document on the management system in the field of health and labor hygiene of KMG, including tools for assessing the current level of the management system, including risk assessment and preparedness for an emergency medical response;
9. Organization of a demonstrative training alarm for emergency medical care in the KMG Group of companies on the basis of Atyrau Refinery, KTO, ICA, EMG and KGM.
10. The work of functional groups in various areas.
11. Continued implementation of the HSE strategy and plans through the system of HSE committees.

INDUSTRIAL SAFETY

In order to prevent accidents and incidents at all hazardous production facilities and to reduce the accident rate in 2018, the Company carried out the following activities:

- Systematic control of timely conduction of the survey, repair and replacement of technical devices;
- Strict adherence to technological discipline;
- Implementation of industrial control in the area of industrial safety;
- Full compliance with the industrial safety requirements established by laws and regulations.

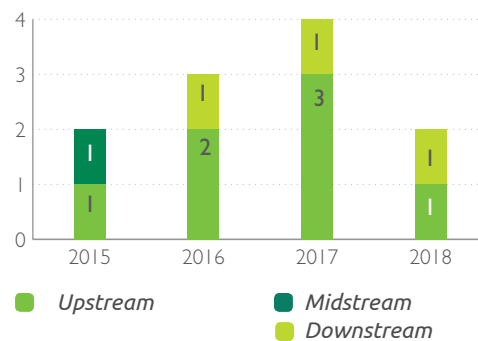
In 2018, two accident occurred at the Company’s production facilities – a gas, oil and water inflow in the oil and gas field, and depressurization of the process pipeline followed by ignition at the oil refinery. The main causes of accidents were a violation of industrial safety rules and unsatisfactory technical condition of the equipment due to its physical deterioration. The amount of losses amounted to 4.860 million tenge, no injuries.

In the occurred accidents, state technical investigation was carried out establishing causes and circumstances, and root causes were identified, corrective measures were developed at the Company’s corporate level with subsequent dissemination of “Lessons learned from Incidents” to all subsidiaries and affiliates.

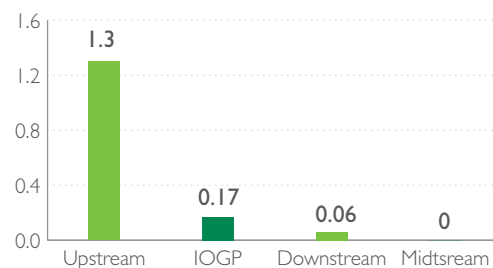


In the reporting year, benchmarking was conducted in the context of the Company’s business areas in terms of the Tier 1 Process Safety Event Rate (Tier 1 PSER) industrial safety incident rate with international oil companies that are members of the IOGP

Accident rate (technological hazards) at the production facilities



Tier 1 PSER industrial safety incident rate



association. This indicator for the IOGP group of companies is 0.17, which is significantly lower than the Company's E&P subsidiaries and affiliates, which was 1.3, and higher than the Company's similar indicators for Processing and Marketing subsidiaries and affiliates (0.06) and

Transportation subsidiaries and affiliates (0). In the Upstream business area, the majority of industrial safety incidents were caused by wear on pipelines and equipment breakdowns caused by corrosion.

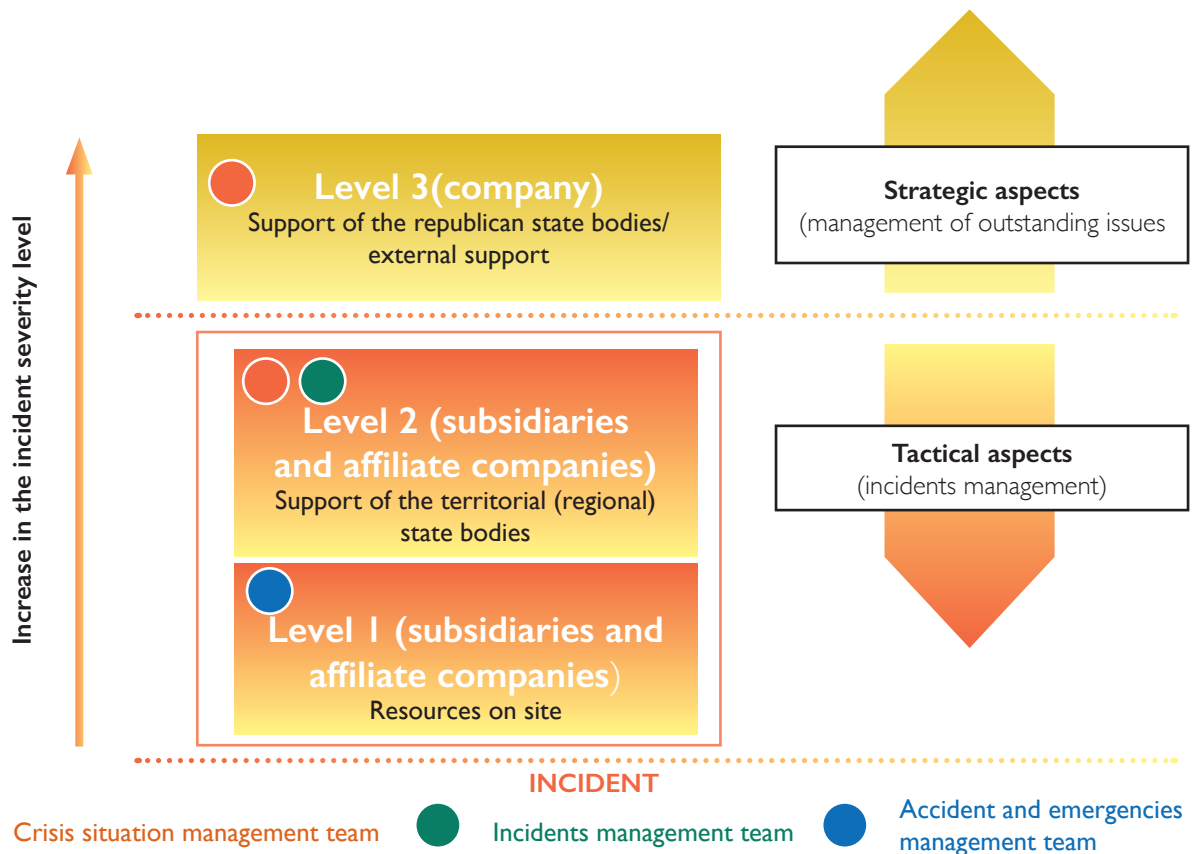
Emergency preparedness (crisis) situations

In the reporting year, the corporate center of the Company developed a draft Regulation on crisis management to ensure prompt response, prevent the escalation of possible crisis situations, reduce the severity of consequences and possible damage as a result of their occurrence.

The regulation assumes a three-level approach to managing incidents that can have a significant impact on the reputation of the Company and its subsidiaries and affiliates, its financial

well-being or long-term viability. Crisis situations are considered both of an industrial nature (accidents, fires, explosions, etc.) and not related to production (large-scale fraud, social unrest, acts of terrorism, etc.).

In all cases, the involvement of the Company's senior management for making strategic decisions aimed at reducing the impact and minimizing the effects of crisis situations is envisaged.



Fire Safety

In 2018, the companies of the Group introduced fire safety rating sheets, which are aimed at checking the readiness of non-state fire services to prevent and extinguish fires.

Inspection and evaluation of preparedness for prevention and extinction of fires is carried out in order to determine the readiness of non-state fire services (NSFS), as well as the effectiveness of the fulfillment of contractual obligations in the field of prevention and extinction of fires at the Company’s facilities. Inspections are carried out on in the following areas:

- 1) availability of NSFS’s permits for implementation of activities in the field of fire safety regarding prevention and extinction of fires;
- 2) NSFS unit’s staffing with man-power, fire-technical equipment, RPD;
- 3) presence of a fire station building or specially designed boxes;
- 4) organization of man-power training;
- 5) organization of guard service;

- 6) organization of gas-smoke protection services;
- 7) organization of operation and maintenance of fire trucks;
- 8) organization of operation and testing of fire-technical equipment;
- 9) organization of fire prevention activities;
- 10) readiness for actions to localize and suppress the fire (based on the results of the test fire-tactical training).

Scheduled inspections for evaluating the readiness of NSFS are carried out by employees of the HSE service, specialists in the field of fire safety of subsidiaries and associates of the company in accordance with plans approved by the heads.

According to the comprehensive analysis of the evaluation data, a number of subsidiaries and affiliates where it is necessary to take urgent corrective actions, such as: ensuring staffing of NSFS staff, building a fire station, the presence and staffing of fire engines in accordance with the regulations, etc., were identified.

Land Oil Spill Prevention

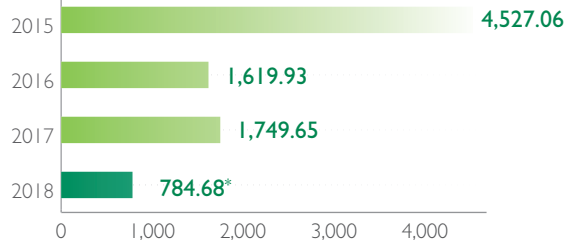
In 2018, the Company, as before, paid great attention to ensuring the integrity of pipelines as one of the important areas in the field of industrial and environmental safety.

The volume of oil spills in 2018 decreased by 55% compared with the level of the previous year and amounted to 784.68* tons. Last year’s figure was 1,749.65 tons. These results are a consequence of implementation of programs to improve reliability of field pipelines in the Company’s E&P subsidiaries and affiliates aimed at replacing worn-out pipelines and protecting pipelines from corrosion by inhibiting.

The main cause of oil spills in the Company is impulses of field pipelines under the influence of corrosion processes. Therefore, in 2018

GRI 306-3

Oil Spill Volume, tons



the Company continued to reduce the number of failures and gusts of field pipelines through the timely and high-quality implementation of measures for diagnosis, reconstruction, replacement, inhibition and cleaning of pipelines aimed at improving their integrity and reliability.

In close cooperation with law enforcement agencies, starting in 2012, “KazTransOil” JSC

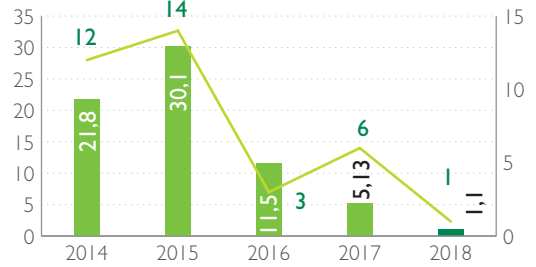
* Indicator reflects data on oil spills in the “Upstream” business area.

turned the tide of criminal illegal tie-ins into the company’s pipelines. Already in 2013, it was possible to reduce the number of unauthorized tie-ins from a few dozen or even hundreds per year to 17 facts; at the end of 2014, 12 unauthorized tie-ins were revealed; in 2015, 14 frames were completed; in 2016 – 3 unauthorized connections, in 2017, 6 illegal tie-ins were revealed, in 2018 – 1 tie-in.

These indicators are achieved largely due to the implementation of the following activities:

- strengthening control over the monitoring of the work of mobile groups on GPS systems and the timely implementation of mobile groups of detours and inspections of pipelines;

Unauthorized Tie-Ins



■ Total damage, mln KZT
 — Number of unauthorized tie-ins, pcs

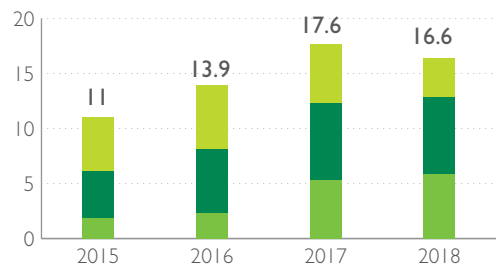
- protection of pipelines through the monitoring system “Optosense”.

ENVIRONMENTAL INDEX

In accordance with the precautionary principle (Principle 15 of the Rio Declaration on the Protection of the Environment and Development of the United Nations), as well as the requirements of the KMG environmental management system and the provisions of the legislation of the Republic of Kazakhstan at the planning stage of each project, an environmental impact assessment (EIA) is carried out to determine the environmental and other effects of management and business decisions, develop recommendations for improving the environment, preventing destruction, degradation, damage and depletion of natural ecological systems and natural resources. In addition, at the design stage of each project, public hearings are held with the participation of representatives of interested parties: administrative, state and regulatory bodies, research organizations, public associations, the local population, the media. We provide access of all interested parties to the draft EIA, reception and registration of comments and suggestions. All KMG Group EIA projects are subject to state environmental impact assessment and are available to the public concerned on the official

GRI 102-11, 103-1, 103-2, 103-3, 302, 303, 304, 305, 306, 307

Dynamics of environmental payments and costs, bln KZT



■ Waste recycling
 ■ Other environmental costs
 ■ Regulatory emission payments

website of the Company, on the websites of local authorities throughout the project life cycle. In the period 2017–2018, 95 meetings were held with the local community and public organizations, including 45 meetings in 2017 and 50 meetings in 2018. According to the results of public hearings, appropriate measures are taken, taking into account the recommendations and opinions of stakeholders.

In order to effectively manage environmental risks, the Company is constantly improving

approaches to environmental management and allocates the necessary resources to protect the environment, in particular for environmental costs, which include the payment of taxes for regulatory emissions, the cost of environmental protection measures, insurance, compensation measures in the field of environmental protection, investments in environmental impact prevention, etc.

The Company has increased the budget for processing historical waste and restoring polluted land. Since 2015, investments in waste recycling have increased 3 times and account for more than a third of all environmental protection costs. At the same time, there is a decrease in emission payments associated with a reduction in atmospheric emissions by increasing the use of associated petroleum gas.

Use of Energy Resources and Energy Performance

GRI 103-1, 103-2, 103-3

As one of the tasks in the field of environmental protection and increasing the efficiency of production, KMG sees continuing activities in the field of energy efficiency. The Corporate Center collects and analyzes data on energy consumption and energy efficiency indicators, monitors progress and identifies opportunities for improvement, conducts benchmarking with the past period and with indicators of similar companies in the industry (IOGP).

The company's activities in the field of energy conservation and energy efficiency are based on the methodology of the international standard ISO 50001 "Energy Management Systems", which is the best generally recognized international practice for system management in this activity.

Since 2017, KMG has a Roadmap on energy saving and energy efficiency of subsidiaries and affiliates, including jointly controlled organizations and joint ventures of KMG for 2017–2020. The objectives of the Roadmap for energy saving are:

- increasing the responsibility of top management through the introduction of KPI on energy efficiency for managers responsible for energy saving and energy efficiency;
- ensuring the rational use of energy resources;
- reduction of the payment burden by increasing the energy efficiency of energy-saving measures;
- ensuring energy efficiency in the procurement of construction, reconstruction, overhaul of power equipment;
- attracting private investment to improve energy efficiency, including under the terms of energy service agreements (contracts);
- improving the system for monitoring compliance with the requirements and indicators of energy efficiency;
- compliance with the requirements of legislation in the field of energy saving and energy efficiency.

Energy Consumption

GRI 302-1

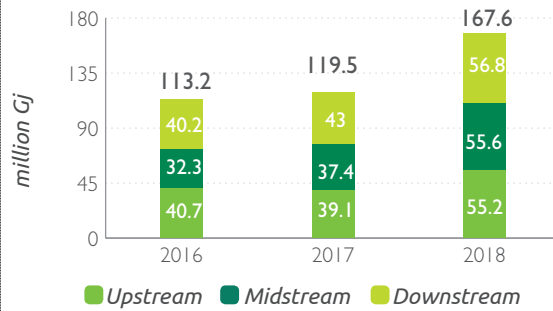
In total, 167.6 million Gj* of fuel and energy resources were consumed during the reporting year, which is 40% higher than the 2017 level, including 12.6 million Gj of electrical energy consumption, 6.0 million Gj of thermal energy,

and motor fuel – 2.0 million Gj, boiler-furnace fuel 146.9 million Gj. Energy consumption is distributed between the three business areas "Upstream", "Midstream" and "Downstream".

The increase in energy consumption compared to 2017 is primarily due to the modernization

* In the Annual report for 2018, operational data on energy consumption were indicated.

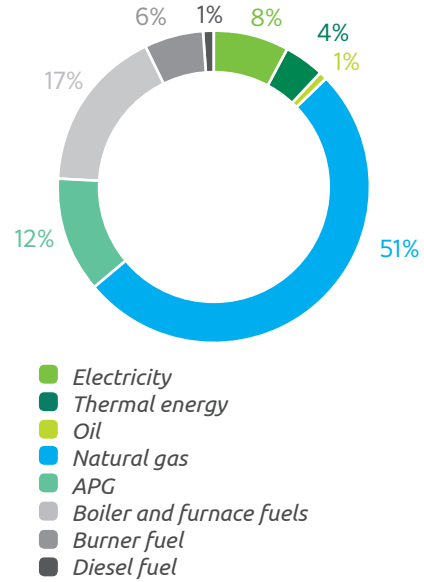
Energy contribution by area of activity



of refineries and the introduction of new technological units and to increase the depth of oil refining, as well as the increase in production watering at mature fields.

In 2018, the volume of own generated energy in the KMG Group of companies amounted to 683.4 million kW (2.5 million GJ) of electrical energy and 3,812.5 thousand Gcal (16.0 GJ) of thermal energy.

Energy consumption (by type), %



Energy consumption outside the organization

GRI 302-2

Currently, we keep records of the consumption of energy resources only within the organization; in this connection, energy

consumption outside the organization is not reflected in this report.

Reducing Energy Consumption*

GRI 302-4

Saving the consumption of fuel and energy resources is one of the KPIs of the roadmap for energy saving and energy efficiency in the KMG Group of companies. The roadmap is designed to ensure the rational use of energy resources, reduce the payment burden as a result of increased energy efficiency, increase the involvement of management in energy efficiency issues, and also to comply with legislative requirements for energy conservation and energy efficiency. It is worth noting that the implementation of the relevant measures applies to our subsidiaries and affiliates that are subjects of the State Energy Register in Kazakhstan. 14 KMG subsidiaries and affiliates

are included in this register, including assets in the upstream, midstream & downstream areas.

In 2018, 59 energy saving and energy efficiency measures were carried out, main main of which are technological equipment upgrade, implementation of devices for reactive power compensation, introduction of energy-saving technologies, thermal energy production and consumption optimization. Saving of fuel and energy resources amounted to 436.8 thousand GJ, in-kind 16.8 MMkW (60.6 thousand GJ) of electricity, 8.8 thousand Gcal (37.1 thousand GJ) of thermal energy, 9.6 million m³ (324.3

* In the Annual report for 2018, operational data on reducing energy consumption were indicated.

thousand Gj) of natural gas and 458 thousand liters (14.8 thousand Gj) of fuel and lubricants.

Due to the fact that the main measures for energy saving and energy efficiency, namely the introduction of technological equipment was realized in the end of 2018, the economic effect in kind of energy resources will be visible only in 2019. The financial expenses for the implementation of these measures amounted to KZT 1.8 billion. Saving financial expenses for the purchase of fuel and energy resources amounted to KZT 395,2 million. The planned payback period is 4.6 years.

This year, an energy audit of “Kazgermunai” LLP was held. According to the results of the energy audit, measures were taken to install the VFD, to modernize the heating system of the laboratory building of the Nurali metro station and to replace fluorescent lamps with LED lamps. The total cost of implementing the agreed activities is KZT 30.15 million, the total savings will be KZT 6.5 million annually. The potential energy savings relative to the base year will

Energy Intensity

In 2018, the specific energy consumption in the direction of hydrocarbon production averaged over the Group of companies was 2.38 Gj per ton of produced hydrocarbons, which remains 59% higher compared to the international association of oil and gas producers IOGP, which in 2017 was 1,5 Gj per ton of produced hydrocarbons. In oil production, the specific consumption of energy resources is primarily due to the increase in water cut in production at mature fields.

In 2018 the specific energy consumption in the direction of oil refining averaged at the refinery was 3,5 Gj per ton. This is 15% higher than the level of European plants and is primarily associated with the harsher climatic conditions in the region of the petrochemical enterprise. In the reporting year, the increase in specific energy consumption is associated with the modernization

be 104.11 tons of fuel equivalent or 0.21% of the total consumption of fuel and energy resources for the base year*.

At the refineries, work is underway to conduct a study of the current level of refinery development in comparison with the world’s best refineries according to the methodology of HSB Solomon Associates LLC (hereinafter referred to as Solomon). The goal of Solomon’s research is to: determine the main indicators – “Solomon indices” – the oil refinery in a comparable basis, i.e. how efficiently the available capacity is used. Performance indicators are designed to compare refineries of similar size and configuration, and it is better to use them for operational comparisons, allowing you to compare the results of refineries (both production and economic) with the result of other refineries in different groups.

* The base year for “Kazgermunai” LLP is 2017. It is worth noting that for each KMG subsidiary and affiliate, which is a subject of the state energy register, its own base period is determined in accordance with the periods of the energy audit. In accordance with the Law of the Republic of Kazakhstan “On Energy Saving and Improving Energy Efficiency”, an energy audit is carried out at least once every five years.



of the plant, the construction of new ones and the reconstruction of existing process units to increase the depth of oil refining.

In 2019, the implementation of measures for energy saving and energy efficiency will continue, the results of which will save at least 0.8 million Gj of energy. As part of the modernization in 2019–2021, the refinery plans to introduce an automated system for technical accounting of electricity, which is implemented on the basis of microprocessor-based computing facilities and control complexes, which is a computerized system with centralized control and a distributed measurement function. The implementation of this project will lead to a reduction in energy costs due to the organization of reliable technical accounting, rational distribution and consumption of electricity.

Water Management

GRI 103-1, 103-2, 103-3

Water is an integral part of all KMG production processes. In its activities, the Company seeks to reduce water consumption, improve water use efficiency, increase water reuse and recycling, improve the quality of effluents and minimize the impact on natural water bodies.

Activity of the KMG Group in terms of water resources utilization is consolidated in corporate center, where integral action of the company on water resources of the company is analyzed. KMG corporate center also analyzes achievements, problems, risks and determines areas for improvement, purposes and tasks for future activity, performs comparative analysis of dynamics and spatial distribution of water consumption.

The key event in terms of water resources protection in 2018 was the adoption by the Company of a corporate standard for water resources management, which will be gradually introduced in the Group of companies during 2019.

Water Footprint

The total water withdrawal of the KMG Group in 2018 was 93.7 million m³, which is 11% more than in 2017 (in 2017 – 84.4 million m³). The increase in water withdrawal occurred in the Downstream (by 4 million m³) due to the completed refinery modernization and the resulting increase in the volume and depth of oil refining; in the Midstream business area, an increase in water withdrawal of 2.6 million m³ is associated with an increase in the number of sub-subscribers who buy water for various needs from KTO; the volume of water withdrawal in the Upstream increased (by 2.8 million m³) due to an increase in the withdrawal of sea water to maintain reservoir pressure, and also due to an increase in the withdrawal of industrial water for production needs.

The standard postulates the main principles of KMG regarding the use of water resources – 8 “Water” principles, systematizes the approach to water management in KMG subsidiaries and affiliates, and also helps to increase the commitment of managers and employees to the issue of freshwater conservation.

Also in 2018, the modernization of the treatment facilities of “PKOP” LLP (Shymkent Refinery) was completed: the capacity of the plant’s treatment facilities was increased, and the quality of wastewater treatment was improved. Additional wastewater treatment at the reverse osmosis unit saves fresh water of up to 1.5 million m³ per year. In addition, a system for returning treated wastewater to the fire protection system has been introduced at the treatment facilities of PKOP. These measures will help to save up to 30% of fresh water previously collected from urban water supply systems.

GRI 303-1, 303-2, 303-3, 306-1, OGS

In 2018, KMG Group of companies discharged 10.9 million m³ of wastewater (9 million m³ in 2017). The main receiver (and end point) of KMG enterprises is various specialized receivers: storage ponds, evaporation fields and filtration fields. These facilities are technical facilities designed for natural wastewater treatment and prevention of environmental pollution. Enterprises that do not have their own drives transfer wastewater for cleaning and disposal to specialized companies. Quality standards for discharged water, established by environmental legislation, are achieved through the use of mechanical and biological methods of wastewater treatment.

A significant amount of treated wastewater is used for the second time at refineries, where in 2018 4.1 million m³ of treated wastewater

KMG BLUE PRINCIPLES

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

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

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

KazMunayGas NC JSC CEO



UNCONDITIONALLY ACCEPT AND UNDERSTAND THE VALUE OF WATER RESOURCES



COMPLY WITH LEGAL REQUIREMENTS AND INTERNATIONAL BEST PRACTICES



CONSIDER FRESHWATER CONSERVATION ISSUES WHEN MAKING MANAGEMENT DECISIONS



TRACK THE INITIAL SOURCES OF WATER INTAKE



STRIVE NOT TO USE DRINKING WATER FOR INDUSTRIAL PURPOSES



100% INSTRUMENT METERING OF WATER INTAKE AND DISCHARGE



IMPLEMENT WATER CIRCULATION AND WATER SAVING TECHNOLOGIES



CONTINUOUSLY IMPROVE WATER MANAGEMENT

Заявление о приверженности рациональному управлению водными ресурсами

8 ВОДНЫХ ПРИНЦИПОВ



Мы осознаем высочайшую ценность воды для жизни и здоровья человека, для общества и нашей производственной деятельности, и безоговорочно принимаем важность бережного и рационального отношения к водным ресурсам страны.



Мы стремимся не только выполнять требования законодательства Республики Казахстан, но и соответствовать международным стандартам и лучшим практикам, а также учитывать мнение всех заинтересованных сторон в регионе присутствия.



Мы учитываем вопросы сохранения пресной воды и эффективности ее использования при принятии управленческих решений и при управлении операциями.



Мы понимаем и оцениваем первоначальные источники своего водозабора, независимо от того, забирается вода напрямую или покупается через посредников.



Мы не используем воду питьевого качества для производственных целей.



Мы стремимся к стопроцентному приборному учету водозабора и водоотведения.



Мы стремимся к максимальному сокращению забора свежей воды за счет внедрения водооборотных и водосберегающих технологий и к снижению объемов сбросов, стремимся повышать качество очистки воды для максимально возможного повторного использования.



Мы наращиваем потенциал, участвуя в отраслевых ассоциациях и поддерживая международные инициативы в области водных ресурсов с целью изучения передового опыта для непрерывного совершенствования своей системы управления водными ресурсами.

Председатель Правления
АО НК «КазМұнайГаз»

Айдарбаев А.С.



was reused, mainly this water is used to feed recycled water supply units. In total, 360 million m³ of water was used (circulated) in the KMG refinery's water recycling systems. The percentage of water reuse at KMG's plants is 26% (of the volume of water withdrawal in the direction of Recycling). Purified wastewater in the Mining and Transportation sectors is reused mainly for cleaning vehicles, dust suppression and fueling systems.

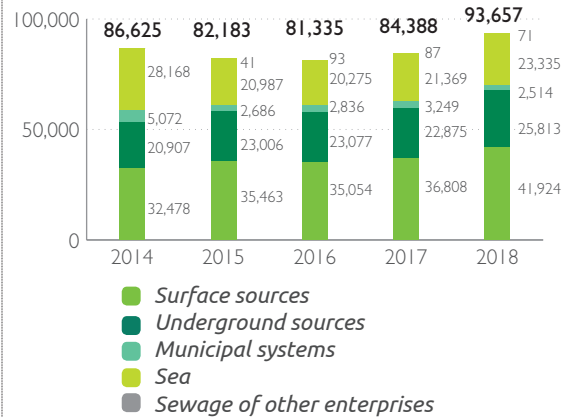
In the process of oil production large volumes of so-called, associated-formation waters – an oil-water emulsion is extracted to the surface, which is subsequently separated into water and oil by the gravity method. The water thus separated is sent for injection into the reservoir. A total of 124.4 million m³ of produced reservoir water in 2018, 99% was pumped back to maintain reservoir pressure, and only 1% into absorbing wells. Significant volumes of produced-surface water extracted to the surface, as well as a gradual increase in its volumes, indicate a depletion of oil fields (an increase in water-cut). In addition, in order to maintain reservoir pressure, 47.8 million m³ of water from other sources (23.3 – sea water, 7.2 – Volga and 17.3 – water from underground sources).

Total volume of produced water, thousand m³

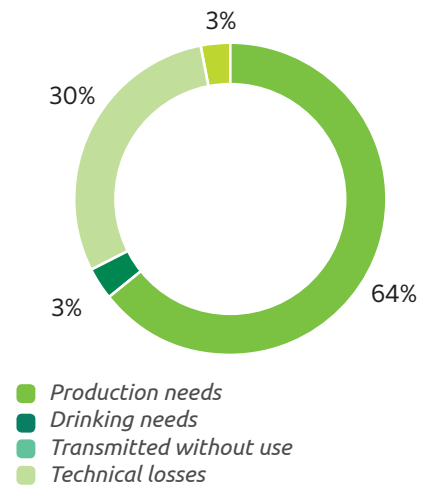
2015	2016	2017	2018
121,933	123,172	124,416	124,372

The most significant impact of the Company's activities is on the water bodies of the western region of Kazakhstan (the Ural and Kigach rivers, the Kokzhide sands, the Pyatimar reservoir), which are of particular ecological, economic, historical, cultural and recreational

Water withdrawal sources breakdown of KMG Group, thousands of m³



Use of water resources by type of operations in 2018, %



value. To prevent negative impacts on sensitive ecosystems, regular monitoring is conducted.

FUTURE PLANS

In 2019, the Atyrau Refinery will begin to design and build a new treatment plant for the plant. Modernization of treatment facilities will be carried out in 4 stages: the construction of the first line of mechanical wastewater treatment (MWT), the reconstruction of the biological wastewater treatment unit, the construction of the final treatment unit and the construction of the 2nd line of MWT. Modernization of wastewater treatment plants will help reduce water withdrawal from the Ural River through the use of a multi-stage wastewater treatment system, which will remove up to 99% of pollutants from wastewater and, therefore, multiply the reuse of water. Completion of the project is scheduled for the end of 2023.

Biodiversity Conservation and Environmental Monitoring

GRI 103-1, 103-2, 103-3, 304-1, 304-4, OG4

We recognize that biodiversity is a security of ecological well-being.

Biodiversity management is based on the following key principles:

- Identification and assessment of environmental and social risks and impacts. To do this, when planning future activities, we assess the possible impacts that may be caused to biodiversity. In accordance with international practice, to monitor changes in the environmental situation in contract areas in the process of exploration and development of oil fields, as well as to assess and clarify possible

damage to biodiversity, we conduct regular environmental monitoring, paying particular attention to specially protected natural territories and protected areas;

- Implementation of preventive and preventive measures or measures to reduce the impact, and in the case of persistence of residual effects – compensatory measures to compensate the consequences of adverse effects;
- Continuous improvement of the management system in the field of health, safety and environmental protection.

Natural areas of our operations under protection and affected species of flora and fauna

Conservation zone of the Northern Caspian of republican significance

The Northern Caspian is the most productive part of the Caspian. The biological resources of this part of the sea are very large. The main commercial objects of ichthyofauna are 25 species, of which the most valuable are sturgeon, constituting more than 70–80% of their world reserves in the basin.

Water area of the eastern part of the North Caspian with deltas of Volga River (within the RoK) and Ural River are included into state conservation area in the north part of the Caspian Sea. Wetlands of the north part of the Caspian, especially deltas of rivers Volga, Ural and Emba, as well as adjoining coast and water area of the sea, are the most important agricultural lands on the Eurasian continent, which provide support to millions of swimming and semiaquatic birds during nesting, mew, seasonal migration and wintering. One of the largest in Eurasia, the Siberian-Black Sea-Mediterranean flyway, passes through the Northern Caspian.

Based on background research, more than 70 species of birds migrate through the open

areas of the North-Eastern Caspian Sea, located at a distance of 20–60 km from the coast (5 of them are rare species listed in the Red Book of Kazakhstan). In the coastal zones, the small white egret, spoon-bill, nesting pelicans, the whooper swan, the white-eyed black and the black-headed gull nest. Sultanas, White-tailed Eagle and Osprey are also marked there.

Five RoK Red Book species of birds nest there as well. The most numerous is steppe eagle. Rare birds can be encountered such as avoset, sandpipers, magpies, small white egret.

The only large marine mammal (detachment of pinnipeds) living in the Caspian Sea is the Caspian seal (*Phoca caspica*). It is an endemic species of mammal. Seals are distributed throughout the Caspian Sea, but their number in the Northern part varies with the season. The nature of the seasonal distribution of animals in the sea area is determined by the three main phases of the annual cycle: reproduction, molting and feeding season. Breeding sites are located in the northern Caspian in the freezing winter. The feeding season from April to September, the seals spend mainly in the Middle

Location and scale of production activities in relation to key biodiversity areas

GRI 304-1

Site	Location	Key biodiversity areas (KBA)	Location in relation to KBA	Contract Area (sq. km)	Impact reduction plan
Kansu	Karakia district of Mangistau region	Kenderli-Kayasansky Reserve Zone and Ustyurt State Reserve	Located in a conservation area and located near the reserve	4,374.6	Decided to withdraw from the Project
Samtyr	Southeast Mangistau region	Kenderli-Kayasansky Reserve Zone and Ustyurt State Reserve	Located near the reserve	10,396.9	Exploratory design stage
Urichtau	Mugalzhar district of Aktobe region	State natural complex reserve of local significance “Kokzhide – Kumzhargan”	Includes part of the territory	239.9	Hydrogeological monitoring
Alibekmola and Kozhasay	Mugalzhar district of Aktobe region	Sands Kokzhide Kokzhide groundwater	Located near	156.5	Hydrogeological monitoring
Zhambyl	Kazakhstani sector of the Caspian Sea Atyrau district	Special environmentally sensitive zone of Kazakhstani sector of the Caspian Sea, Novinsky reserve	Located in a conservation area and includes part of the territory	1,935.2	Regular environmental monitoring, restrictions on offshore oil operations
Isatay	Central part of Kazakhstani sector of the Caspian Sea, Northern Mangistau region	Special environmentally sensitive zone of Kazakhstani sector of the Caspian Sea	Located in a conservation area	1,060	Seasonal background environmental studies, Regular environmental monitoring

and Southern Caspian. In the summer, a small number of animals live in the North Caspian (about 30,000 individuals), the majority of the population is located in the deeper and colder waters of the South Caspian. In late autumn, they migrate to the northern shoal area, where the water begins to freeze. Most of the population is collected in the Northern Caspian in October–November.

Continuous monitoring and timely protective measures are required for such territory, which is important for preservation of biodiversity of Kazakhstan and the whole Eurasian continent. KMG paid attention to environmental

protection of this region since start of its activity in the North Caspian. In full compliance with the requirements of environmental legislation, the regime of use of the water area, environmental requirements during the implementation of economic activity and compliance with the principle of “zero discharge” were observed.

Novinsky state natural (zoological) sanctuary of the republican significance was found for the purpose of creation of optimal conditions for fauna and flora reproduction, including listed in the Red Book of the RoK. Security arrangement is protection.

Zhambyl area is located in the northern part of the Caspian Sea. The contract territory is located within the reserve zone of the Caspian Sea, as well as partly within the Novinsky wildlife sanctuary reserve, but the production sites do not affect environmentally sensitive areas. This site complies with restrictions on conducting production operations in a period of high environmental sensitivity. During the study period, no abnormal natural phenomena of the state of the environment or non-natural factors causing concern or increased attention were recorded in the water area.

Isatai area is located in the northern part of the Caspian Sea, 45 km north of the coast of the Bozashi Peninsula, in Mangistau Region.

Myortvyi Kultuk (Ustyurt) is the habitat of the most characteristic representative of the Caspian Sea – flamingo, formerly widespread in the northeast, and still using this part of the sea, molting and flying birds in the Komsomolets Bay area and Dead Kultuk and Korak Bay. Flamingo (*Phoenicopterus roseus*) is a locally nesting species with a declining number. The only representative of the genus in the fauna of Kazakhstan. The main nesting sites in Kazakhstan to date are Lake Tengiz, Lake Chelkarteniz and the northeast coast of the Caspian Sea.

The Komsomolets Bay area, the Sorts Dead Kultuk and Kaidak are still regularly used by thousands of birds spending their summers here. Birds from the colony of Central Kazakhstan fly through these areas, increasing the local non-breeding population in April and August–September. Through the Gulf Komsomolets annually migrate up to 35 thousand individuals.

Mangistau area. There is an extensive network of specially protected natural territories on the territory of Mangistau Oblast, including the Ustyurt State Nature Reserve and the Kenderli-Kayasan Reserve Zone of republican significance, as well as 8 reserves and 1 natural park of regional subordination. Among the species of reptiles living in Mangistau region, there is *Elaphe sauromates* which is listed in the Red Book of the Republic of Kazakhstan (2010). The Central Asian tortoise, which is a common, widespread species in Mangistau, is quite numerous in places, however, according to the criteria of the Red List of the International Union for Conservation of Nature (IUCN), it has the status of vulnerable species.



Kenderli-Kayasanskaya conservation area of the republican significance was found for the purpose of preservation of habitat and natural reproduction of houbara bustard and saker falcon. Established modes: reserve status, protection regime, regulated regime.

Ustyurt state natural reserve is related to the first-class specially protected areas of the republican significance. Purpose of reserve establishment – preservation of natural complex of north deserts of Ustyurt in natural state, including rare species of flora and fauna. Security arrangement is protection. The reserve is a key habitat for a number of species listed in the Red Book of the Republic of Kazakhstan and (or) the International Red Book of IUCN: gazelle, Ustyurt mountain sheep – Urial, Caracal, honey badger, saker falcon, golden eagle, eagle owl, vulture, bustard beauties, etc. According to leading experts, the USPP meets the criteria for UNESCO World Cultural and Natural Heritage sites and in the future can receive this honorary status indicating the highest international level of recognition of its value.

For the first time in the history of observations of the Ustyurt GPP in 2018, a live front Azahit leopard was found. Previously, the leopard in Kazakhstan was known only for 3 facts of the human production of this animal, including in Mangistau region in 2007 and 2015. In Mangistau, leopards periodically come from neighboring Turkmenistan and, given the satisfactory food base (urials and gazelles), could probably form a local population here if there is no harassment from humans and proper protection of their habitats. The distance from the Ustyurt reserve to Kopetdag in Turkmenistan, where the leopard reliably lives now, is at least 600 km.

History Case:

KMG, together with the Ministry of Agriculture of the Republic of Kazakhstan, the United Nations Development Program in Kazakhstan (hereinafter referred to as UNDP) and the NGO "Association for the Conservation of Biodiversity of Kazakhstan" (hereinafter referred to as ACBK) discussed compensatory measures of harm caused during the planned work at the Kansu and Samtyr sites. The results of the second stage of the expedition to assess the state of biodiversity in South Ustyurt, held in April–May 2018, were also discussed. The expeditionary research was carried out within the framework of the implementation of the project MSF / 203/17 "Desert Initiative of Central Asia" with the assistance of UNDP and ACBK. Also given are estimates of some anthropogenic threats to the biodiversity of the region and recommendations for their

compensation, which subsequently formed the basis of the new environmental policy of the Company. For example, the Company will commit itself to preventing illegal hunting and fishing, both on the part of its employees and the side of its contracting companies. Moreover, the intention not to carry out activities in specially protected natural areas will become one of the points of the new environmental policy of the Company. It has been decided to award the southern part of the Ustyurt Plateau with special status, including the Kaplankyr chink, within the Karakiya district of the Mangistau region, as a reference intact region of the biome of the Turanian deserts with cold winters, which is a key habitat for a number of species listed in the Red Book of RoK, including for gazelle and honey badger.

It should also be noted that the leopard is currently not listed in the fauna list of Kazakhstan and the Red Book of RoK. Employees of the Ustyurt GPP have already sent an appeal to the Committee of Forestry and Fauna of the Ministry of Agriculture of the Republic of Kazakhstan with a proposal to immediately include the Persian leopard in the Red Book of the Republic of Kazakhstan, which will ensure the necessary legal status for its effective protection.

Over the past decades, the presence of a number of new mammal species for the region has been revealed: a white-bellied arrowhead in Western Ustyurt, a sharp-haired moth and a red female party in North Ustyurt, a honey badger in South-West Ustyurt, a jackal in plain Mangyshlak and Karagiye depression and raccoon dog. A meeting of the striped hyena in Western Ustyurt and traces of the presence of an Indian porcupine in the region, information about which has not been here for more than 40 years.

The Kansu section is located in the Karakiyansky district of the Mangistau region, partly within the Kenderli-Kayasansky reserve zone and borders with the Ustyurt state natural reserve (2 km buffer zone from the site borders). In 2016, exploration

work at the site was not carried out. Given the high geological, environmental risks, as well as economic unprofitability, KMG made a strategic decision to withdraw from the project. In 2019, the contract territory will be returned to the state.

Samtyr section. Since 2018, KMG is the owner of a 50% stake in "Samtyr" LLP, located in Mangistau Oblast. Located within the South Ustyurt sedimentary basin in the immediate vicinity of the fields Uzen, Shahpaty, Dzhel.

State natural local complex reserve "Kokzhide – Kumzhargan". There are two objects of natural-reserved fund of the republican significance: sands Kokzhide and underground waters Kokzhide, which are included into the List of geological facilities of the state natural-reserved fund of the republican and international significance.

The Urikhtau, Alibekmola and Kozhasai fields are located in the Mugalzharsky district of the Aktyubinsk region of Kazakhstan. The northwestern part of the contract area of the Urikhtau deposit is located on the sands of Kokzhide, the deposits also border the Kozhide-Kumzhargan state natural complex reserve of local significance. In order to prevent groundwater

pollution, work is carried out on regular monitoring of the state of the environment, both in the area of operations of the Group

companies and in the area of the Kokzhide sand massif adjacent to the Contract Area.

Production sites, located within the border and specially protected natural reservations

Type of the specially protected natural reservation	Inside borders	Adjacent bodies (part of territory is included)	Outside borders (located near 1-5 km)
IUCN I-IV category	0	0	Kansu Samyr
IUCN V-VI category	Zhambyl Satpayev Isatai Myortvyi Kultuk (Ustyurt)	Zhambyl Urikhtau	Alibekmola Kozhasay
World Heritage sites	–	–	–
Ramsar lands	–	–	–

The implementation of hydrocarbon production projects in the immediate vicinity of the reserve’s borders, the development of appropriate infrastructure and the emergence of a large number of people with heavy machinery can adversely affect the unique nature of Ustyurt and lead to the disappearance of the South Ustyurt populations of a number of “Red Book” species.

At the same time, according to experts, it is quite possible to make compromise decisions that not only ensure the socio-economic

development of the region, but also allow preserving Mangistau’s unique natural and cultural heritage. In particular, as the most important compensatory measures to minimize damage from the development of the Kansu and Samtyr deposits, it was proposed to expand the UGPP protection zone to 5–10 km and create a new specially protected natural area “South Ustyurt”, including the Kaplankyr chink near Kazakhstan’s state border with Turkmenistan and Uzbekistan. In an optimal variant, a cluster of the Ustyurt GPP should be created in this territory.

Number and percentage of significant operating sites where the biodiversity risk for 2018 was assessed and monitored

304-2, OG4

In 2018, background environmental studies (Isatay), well drilling and testing (Zhambyl) were conducted in areas located in the state reserve zone in the Northern part of the Caspian Sea. At the present stage of activity in these areas, anthropogenic impact is not significant and does not prevent the free movement of wild animals and birds in their habitats. During drilling, the following types of work have impact on the environment: rig installation, drilling and testing of wells, shipping. Impact factors are: an increase in suspended matter concentrations in the water during construction at sea, a violation of the natural

structure of bottom sediments, including under the influence of intensive navigation, the physical effects of noise.

On the Urikhtau section, or bordering on specially protected land areas, the construction of an appraisal well at the East Urikhtau field and the construction of an appraisal directional well in the South Urikhtau field began. Groundwater impact factors are the direct drilling of wells, which can be a source of groundwater pollution. Pollutants can also get into groundwater with infiltrating precipitation from surface sites of industrial

and household waste, oil-contaminated areas, oil storage sites and stratum waters. In this regard, KMG is taking a number of measures aimed at protecting groundwater and preventing their pollution, clogging and depletion. A well design is provided to insulate groundwater strata using conductors lowered to a depth of 80–85 meters, as well as organizing regular monitoring of the conditions of occurrence, level and quality of groundwater in areas of existing and potential pollution.

Another factor influencing the industrial development of territories on biodiversity is power lines, which rearrange a serious danger to the avifauna. The network of overhead power lines (OHTL) is constantly expanding, intruding into the natural habitats of birds and often becoming the cause of their mass death. This problem is particularly relevant for birds of prey found in treeless steppe and semi-desert regions, where the OHTL towers are most attractive for these birds as perches.

Thus, the presence of an average-capacity (6–10 kV) average 60 km long power

transmission line between the Kenderli UGPP cordon and the Tulep village has a negative impact on the populations of birds of prey in the Ustyurt State Natural Reserve and in the adjacent territory of Southern Ustyurt. Every year on this line in the area of the Kenderli boundary there are numerous facts of the death of birds of prey from electric shock, including those related to species listed in the Red Book of the Republic of Kazakhstan (golden eagle, steppe eagle, owl).

KMG, in order to find ways to solve this problem, in November 2018, took part in the Round Table on the topic of “Death of rare bird of prey species on high-voltage power lines: problems and possible solutions”, the main purpose of which was to obtain initial information on existing facts of bird deaths on high-voltage power lines. The experts noted that the problem of protection of birds from electric shock should be paid attention to even during the design, coordination and construction of new high-voltage power lines. The most optimal solution to this problem is the use of modern effective bird protection devices (BPD).

Percentage of significant operating sites where the biodiversity risk for 2018 was assessed and monitored

	Land-based operation		Offshore marine operations	
	2017	2018	2017	2018
Biodiversity areas is covered by an EIA or similar document (%)	100	100	100	100
Areas where environmental monitoring is conducted regularly (%)	100	100	100	100
Areas with abandoned wells that regularly monitor abandoned wells (%)	100	100	100	100

Offshore oil spill prevention

The Caspian Sea is a closed reservoir, the fragile ecosystem of which is especially sensitive to oil pollution. Prior to the start of any type of work at sea, background environmental studies are carried out in contract areas to assess potential social and environmental impacts. Impact monitoring, emission monitoring and emergency monitoring are also carried out – during and after operations. And upon completion of work, continuous environmental monitoring of abandoned wells is ongoing.

The absolute priority for the Company is to ensure constant preparedness for the elimination of all possible emergency oil spills before drilling operations at sea begin. Therefore, the Group has a system for ensuring prompt and effective response to emergency situations, including oil spills and the implementation of appropriate operations to eliminate their consequences. To increase the level of preparedness for oil spill response (hereinafter – OSR), practical and theoretical exercises, trainings and exercises of various levels are regularly held to improve the practical skills of personnel.

In the event of a possible spill, contracts are also concluded with specialized companies for the elimination of oil spills of the first and second levels. In the event of a spill of the third level, an agreement is concluded with the international association Oil Spill Response Limited, specializing in the elimination of accidents at offshore oil and gas fields.

In 2018, before the start of the construction of the appraisal well in the Zhambyl section, to ensure readiness for the OSR, an agreement was concluded with a consortium represented by “KMG Systems & Services” LLP, “Kazmortransflot” LLP and Republican State Enterprise on the right of economic management “Professional Militarized Emergency Rescue

Service”. For the entire period of construction of the appraisal well, the vessels for the OSR were in the 500 meter zone from the rig.

Also, the Operator at the Zhambyl site conducted a series of command and staff exercises on first and second level OSR with the participation of representatives of state bodies in the field of industrial safety and ecology.

A subsidiary of “KMG Systems & Services” LLP owns the North Caspian Environmental Oil Spill Response Base in Atyrau Oblast, the only specialized facility in Kazakhstan intended for OSR.

During the reporting period, no oil spills were recorded in the Caspian Sea.

Climate Change and Air Quality

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

In 2018, the Emission Management Policy was developed in the KMG group of companies, where the main principles of managing activities to reduce the harmful effects on the atmosphere are defined:

- 1) carrying out activities in strict accordance with legislative requirements and other obligations of the Company;
- 2) compliance with the established emission standards and emission limits, quotas for greenhouse gas emissions;
- 3) a clear distribution of roles and responsibilities, increased competence, training and awareness;
- 4) conducting regular accounting, inventory and monitoring of emissions;
- 5) the termination of the regular combustion of crude gas in the extraction of hydrocarbons;
- 6) taking measures to reduce greenhouse gas emissions and reduce the carbon footprint;
- 7) carbon asset management;
- 8) continuous improvement of emission management activities.

We give primary attention to measures to minimize negative impact of our activities on the environment, observing the requirements of environmental legislation, rationally using natural resources and constantly improving environmental protection activities. Our priorities are the careful and rational use of natural resources, the minimization of environmental risks. Targeted programs are aimed at reducing the combustion of crude gas in flares, developing green energy based on renewable energy sources and improving overall energy efficiency.

KMG controls the activity of subsidiaries and dependent entities in the area of greenhouse

gas emissions and air contaminants, monitors timely receipt of all necessary permits for operations, such as emission permits, GHG quota, gas flaring permits etc. at corporate center level. We develop environmental measures air protection, including inventory of emission sources of pollutants and greenhouse gases, development of project document, organization of industrial environmental control and monitoring, modernization of equipment, leading to reduction of pollutant emissions.

Programs for minimizing exposure to atmospheric air are: implementation of programs for the development and processing of crude

gas in the extractive sector, a program to modernize refineries, the use of the latest available technologies in the construction of new facilities in the transportation sector, etc. Phased implementation of programs will reduce emissions of pollutants and greenhouse gases to the atmosphere, increase the beneficial use of crude gas.

The Company adheres to the requirements of national legislation, advanced international standards, the provisions of the Company's internal documents in the field of occupational health and safety, environmental protection and other internal corporate documents, carries out identification and assessment

Greenhouse Gas Emissions

The Company strives to increase the production of oil and natural gas to meet the growing global demand for energy, and therefore we give priority to measures to minimize the negative impact of our activities on the environment, observing the requirements of environmental legislation, rationally using natural resources and constantly improving environmental protection activities.



For the first time, KMG has developed a Carbon Disclosure Information Project under the Carbon

Disclosure Project (CDP), which disclose data on direct and indirect greenhouse gas (GHG)



emissions for 2018 for all KMG assets, including international (Romania, Georgia). Data on GHG emissions for 2018 will be verified and will be available at the CDP site on following link:

<https://www.cdp.net>*

Calculation of greenhouse gas emissions is based on methodological guidelines for calculation of greenhouse gas emissions, approved by the authorized body, and cover following greenhouse gases: carbon dioxide

* The Questionnaire will be posted on the CDP platform in mid-2019. To view the Questionnaire, follow the link in the "Search" section and enter the company name in English: "KazMunayGas National Company JCS". Methodology for calculating greenhouse gas emissions, as well as the disclosures 305-2, 305-3, 305-4, 305-5, were described and posted on the CDP site.

of environmental risks, ensures transparency and openness of our actions in the field of environmental protection.

The Company continues to work on improvement of activities of production facilities on reduction of impact on atmospheric air. We take active part in improvement of the country's regulatory legislation, hold meetings of the Working Group on Emissions Management, participate in forums and conferences on climate change, improve our knowledge and skills in order to increase our abilities on implementation of strategy on emissions reduction.

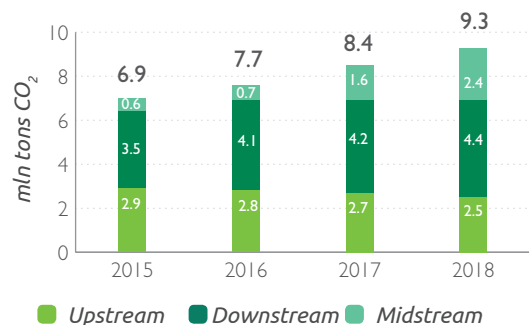
(CO₂); methane (CH₄); nitrogen oxide (N₂O); perfluorocarbon (PFC).

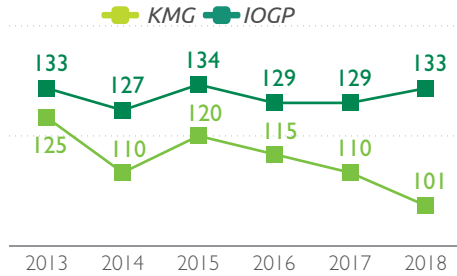
The approach to establishing organizational boundaries of reporting was determined on the basis of international recommendations of the GHG Protocol, according to which data on direct and indirect emissions were consolidated using the operational control approach.

According to the results of 2018, carbon dioxide emissions in the KMG Group of companies amounted to 9.3 million tons (8.4 million tons in 2017). The increase in emissions is due to the increase in gas transportation volumes and addition of new sources.*

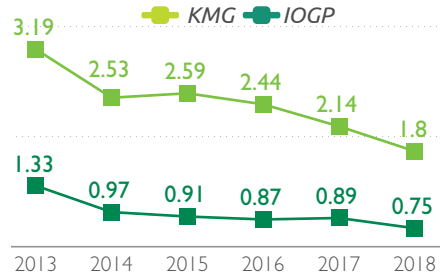
* Data for 2017 differ from the data in the 2017 report in the amount of 1.9 million tons of CO₂, due to the expansion of reporting limits and the inclusion of international assets

Direct greenhouse gas emissions by business area



Emissions intensity CO₂ in Upstream, ton/1,000 tons


Volume of direct greenhouse gas emissions by business area “Hydrocarbon production” was 2.5 million ton of CO₂ in 2018, which 7% lower than the level of the previous year (2.7 million tons in 2017). The main reduction of CO₂

Emissions intensity CH₄ in Upstream, ton/1,000 tons


emissions is associated with the measures taken to reduce flaring of associated gas, respectively, the indicator of the intensity of CO₂ and methane emissions decreases.

Graph Data Source:



	Units	2015	2016	2017	2018
Level 1. Direct emissions					
Breakdown by area of activity					
Upstream	mIn t CO ₂ equiv. ¹	4.9	5.0	4.4	4.2
Downstream	mIn t CO ₂ equiv. ¹	3.5	4.2	4.3	4.4
Midstream	mIn t CO ₂ equiv. ¹	3.2	3.7	5.2	6.1
Breakdown by countries					
Kazakhstan	mIn t CO ₂ equiv. ¹	10.7	11.8	12.8	13.7
Romania	mIn t CO ₂ equiv. ¹	0.9	1.1	1.0	1.0
Georgia	mIn t CO ₂ equiv. ¹	0.02	0.01	0.02	0.009
Emissions breakdown by type of greenhouse gases					
CO ₂	mIn t CO ₂ equiv. ¹	9.3			
CH ₄	mIn t CO ₂ equiv. ¹	5.4			
N ₂ O	mIn t CO ₂ equiv. ¹	0.02			
Level 2. Indirect emissions					
	mIn t CO ₂ equiv. ²	2.5	2.5	2.7	3.2
Level 3. From using sold products					
	mIn t CO ₂ equiv. ²				71.3

Over the past two years the emission intensity has increased in the “Downstream” business direction owing to increased refinery yield

and the introduction of new facilities as part of the modernization work (data are presented for 3 Kazakhstani refineries).

¹ IPCC Fifth Assessment Report (AR5 - 100 years)

² The methodology used is described in the CDP report: https://www.cdp.net/en/formatted_responses/responses?campaign_id=66216852&discloser_id=850098&locale=en&organization_name=KazMunayGas+National+Company+JCS&organization_n=&project=nproject@number=eryproject_number=Program%2F%2Fcdp.credit360.com%2Fsurveys%2F9hz110bc%2F67889&survey_id=65670419.

In the “Midstream” business area, there is an increase in emissions intensity associated with an increase in gas transportation (for export) and the commissioning of new plants.

The calculation of the emission intensity for the business area “Gas Transportation” will begin in the coming years after the launch of new facilities at several gas transmission organizations.

Methane Leak Direct Detection Project

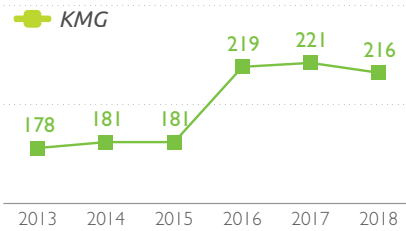
Since 2017, KMG has been a member of the Global Methane Initiative (GMI) project network. In 2018, pilot projects were carried out to detect and quantify methane leaks at the Company’s production facilities in Mangistau Oblast.

One of the basic principles of the Emission Management Policy is Subparagraph of Principle 6: The company takes measures to prevent methane leaks at production facilities by conducting campaigns to detect and quantify methane leaks, install floating cisterns in new tank farms, introduce light oil fractionation plants, the use of mobile compressor stations in the repair of gas pipelines.

KMG took part and represented the Republic of Kazakhstan at the meeting of the GMI Oil and Gas Subcommittee during the Global Methane Forum held in April 2018. in Toronto (Canada). KMG participates in the international project of the United Nations Economic Commission for Europe “Project on MRV (monitoring, reporting and verification) and reducing methane emissions in the oil-producing and extractive industries”.

In order to minimize the impact of gas storage, 3 underground gas storage facilities are used to store natural gas (UGS). The largest of them UGS “Bozoy” (with an active storage capacity of 4,000,000 thousand m³) is located in the Aktobe region (UMG “Aktobe”). There are also UGS “Poltoratskoe” (with an active storage capacity of 350,000 thousand m³), located in the Turkistan region (UMG “Shymkent”), as well as the UGS “Akyr-tobe” (with an active storage capacity of 300,000 thousand

Emissions intensity in Downstream, ton/1,000 tons



History Case:

Due to the launch of the integrated gas processing unit at the Prorvinskaya group of fields, the volume of direct GHG emissions from the flare in this organization was reduced by 80% and amounted to 41.5 thousand tons (211.6 in 2017).



m³), in the Zhambyl region (UMG “Taraz”). Underground gas storages are intended to provide consumers with natural gas during the winter seasons, as well as during periods of reduced gas supply.

CO₂ emissions from biomass burning or decomposition are not included.

In its activities, the Company does not release ozone-depleting substances that affect climate change. Periodic control and monitoring are conducted.

Air quality

We conduct industrial environmental monitoring and take measures on reduction of emissions of pollutants into the atmosphere, formed in the result of operations and production processes. As part of industrial environmental monitoring programs, emissions to the atmosphere are monitored at designated sampling sites and measurements are made to assess potential impacts. The main amount of pollutant emissions is generated as a result

of fuel gas combustion in boilers, process furnaces and compressors, gas turbine plants, compressor stations, gas flares, etc.

The actual gross amount of emissions of all pollutants for the Group in 2018 amounted to 269 thousand tons (in 2017, 256 thousand tons). There is a slight increase in emissions due to the introduction of new sources into operation.

Gross emissions of pollutants into the atmosphere in the KMG Group of companies, thousand tons

	2016	2017	2018
Emissions of pollutants into the atmosphere, in total, including:	241.1	256.3	269.3
NOx emissions	12.9	13.8	16.7
SOx emissions	16.9	14.8	13.6
emissions of other pollutants	211.3	227.7	239.1

In “Upstream” business area, emissions of pollutants are reduced by 16% due to an increase in the beneficial use of crude gas and a corresponding decrease in its flaring. In “Downstream” and “Midstream” business areas, an increase in emissions of 10–12% is observed due to the commissioning of new sources and the growth of gas exports.

Sulfur production facilities were commissioned in all plants. With implementation of this project, hydrogen sulfide gas will undergo regeneration, while simultaneously obtaining an important production product – marketable sulfur. This affects the reduction of pollutants

in the exhaust gases of road transport and the improvement of air quality in populated areas. The sulfur content in gasoline K4 is 10 times less than in the fuel produced before the modernization of the plant.



As a result of carried out projects for the modernization of oil refineries, environmental indicators of fuel produced by plants were improved by producing oil products of European quality standards corresponding to K4 classes in accordance with the requirements of the Technical Regulations of the Customs Union.

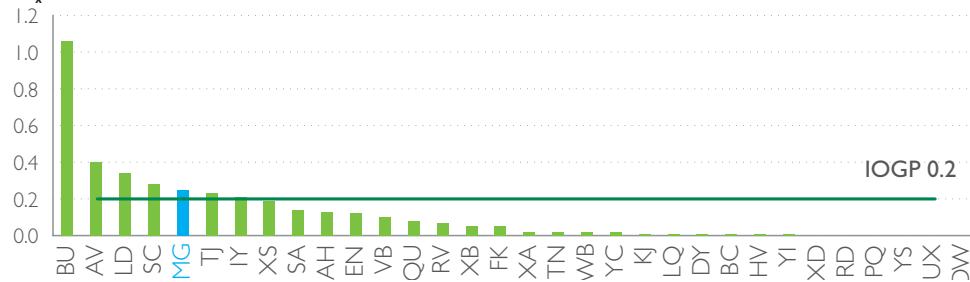
Specific emissions of pollutants in the KMG Group of companies

	2016	2017	2018
Mining of hydrocarbons, t/1,000 TOE of extracted hydrocarbon raw materials	2.14	2.35	1.93
Oil refining, t/1,000 tons of refined oil	3.3	3.3	3.3
Oil transportation, t/1,000 tons of oil transported	0.5	0.5	0.5
Gas transportation, t/1,000 TOE transported gas	1.4	1.2	1.4

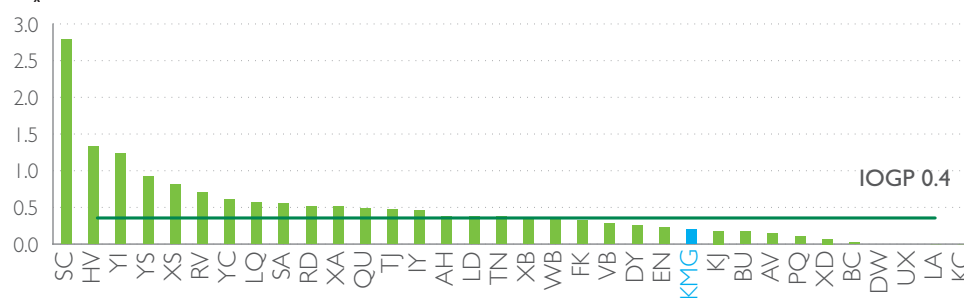
There is a decrease in emissions of sulfur oxide/sulfur dioxide in comparison with 2017 by 9% due to the reduction of gas flaring in oil-producing assets, as well as measures to reduce emissions in “Downstream” and “Midstream”

business areas. NO_x emissions increase in 2018 associated with an increase in gas exports and the introduction of new installations in enterprises.

SO_x emissions per thousand toe of raw hydrocarbon production in 2018



NO_x emissions per thousand toe of raw hydrocarbon production in 2018



History Case:

In order to reduce the impact on the air, the following measures were taken as part of the modernization of the refinery. The PKOP modernization project has been implemented in two phases. At the first stage of modernization, production of motor fuel of environmental classes K4 and K5 (analogues of Euro-4 and Euro-5) was mastered, in accordance with the requirements of the Technical Regulations of the Customs Union. Construction of an isomerization unit with a capacity of 600 thousand tons per year has been completed. In July 2017, isomerization unit was commissioned with the release of K4 and K5 classes of fuel. The second stage of modernization is set aside to increase the capacity of the plant to 6 million tons of oil per year and the depth of oil refining. In December 2015, a sulfur production unit with a capacity of 4 thousand tons per year was commissioned. Installation is aimed at utilization of acid gases, previously burnt on a flare, with sulfur production with mass purity

of more than 99.9%. Due to commissioning of UPS-4000 tons, emissions of sulfur dioxide (SO₂) into the atmosphere decreased by 21%. Installation of point loading of petroleum products in the plant was commissioned. With the commissioning of the Point Loading Equipment for light oil products, emissions of volatile hydrocarbons into the atmosphere were reduced when filling, the share of volatile hydrocarbons was reduced by 7%. Connecting furnaces of existing technological installations and facilities for modernization and reconstruction to natural gas makes it possible to reduce emissions of pollutants and greenhouse gases into the atmosphere. In 2019, it is planned to replace 44 nozzles on LK-6U furnaces with nozzles of an improved, energy-saving design. When replacing the injectors, the reduction of pollutant emissions into the atmosphere will be 135.8 tons per year. Gas-flare unit commissioned. The installation provides safe removal of process gases, the height of the barrel is 137 m. This allows emissions to be better dispersed in the atmospheric air, which significantly reduces the burden on the environment.

The Company does not yet make direct measurements using, for example, gas analyzers in real time, however, under the new Environmental Code, the authorized environmental protection agency is planning to switch to automated monitoring of pollutant emissions by installing sensors / gas analyzers at emission sources at environmental facilities 1st category. Currently, a number of organizations are developing project documentation for switching to online monitoring of pollutant emissions.



Average ratio of NOx emissions to total raw hydrocarbon production in oil equivalent by KMG Group of companies was 0.2 ton per thousand ton of raw hydrocarbon production in 2018, average IOGP indicator was 0.4. Compared to 2017, there is a 17% drop in NOx emissions. Average ratio of SOx emissions to total raw hydrocarbon production in oil equivalent for KMG Group of companies was 0,25 ton per thousand ton of raw hydrocarbon production, average IOGP was 20%. Compared to 2017, there is a reduction in SOx emissions.



The Company does not release persistent organic pollutants in its activity.

Beneficial use of crude gas



This section contains information on companies in the “Upstream” business area of the KMG Group.

One of goals in reducing greenhouse gas emissions is to increase the beneficial use and utilization of associated petroleum gas, minimizing flaring. Associated petroleum gas utilization in 2018 is the highest in the entire history – 93%, gas flaring is at 6 tons per 1,000 tons of produced hydrocarbons (11 in 2017), which is almost 50% lower than the average IOGP.



This was achieved due to the commissioning of a comprehensive gas processing unit (GPU) at the Provinskaya group of fields and a reduction in gas production and combustion in the oil-producing assets of the Aktobe region.

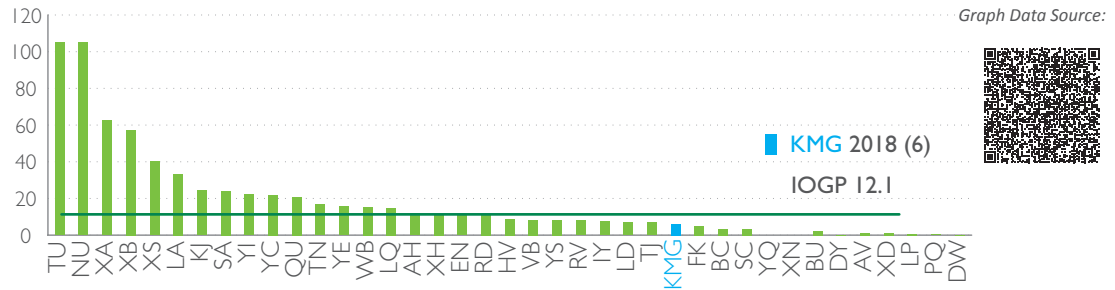
The volume of natural and associated gas production by the main producing companies of the KMG Group in 2018 amounted to 2,873 million m³ (including associated petroleum gas (APG) – 2,049.5 million m³), the volume of crude gas burned was 148.9 million m³. At the end of 2018, a modern gas processing complex was put

into operation in the Baiganinsky district of the Aktobe region at the Kozhasai field. The Head of the State opened its work online during a national teleconference dedicated to the Day of Industrialization. Commissioning of the integrated gas processing unit at the Kozhasai field into full-scale operation will significantly reduce gas flaring from 173 million m³ to 50 million m³, which will have a positive effect on the reduction of pollutant emissions (by 70%).

In 2015, KMG supported the World Bank’s initiative “Complete utilization of associated petroleum gas by 2030”. On November 20, 2018, working meetings were held with representatives of the World Bank Group



Benchmarking of APG flaring rate by industry



to discuss the status of the implementation of the initiative in KMG and possible cooperation to reduce regular burning of crude gas. Reporting on the volume of combustion

of crude gas under this Initiative is submitted on an annual basis.

The company does not recycle APG.

The volume of crude gas flaring

	2016	2017	2018
Total volume of crude gas flaring, million m ³	322.8	315.8	148.9
The beneficial use of APG, %	86	85	93
The intensity of burning of crude gas, t/1,000 produced by raw hydrocarbons	12	11	6

Construction of infrastructure and modern facilities for the utilization of crude gas make it possible to fully develop mining assets and significantly reduce greenhouse gas emissions and pollutants into the atmosphere.

In 2018, the average ratio of gas burned to total hydrocarbon production in oil equivalent for the KMG Group of companies was 6 tons per thousand tons of hydrocarbon production, the average IOGP was 12.1.

Waste Management

GRI 103-1, 103-2, 103-3, 306-2, 304-3, 306-4

Waste management in companies of the Group is one of the most important environmental aspects for KMG. Criticality lies primarily in the substantial amounts of hazardous waste formation inherent in the oil industry. For the quality control of this process, the Company develops a system for managing industrial waste, constantly improves the accounting for the generation and movement of waste, increases the potential for increasing waste reuse.

introduce higher world standards and industry practices. Companies of the Group develop and implement waste management programs, allocate substantial funds to solve problems associated with waste generation and land pollution at production facilities. Records of generated wastes are conducted throughout the entire contract area, including wastes generated by contracting companies. KMG also controls its contractors for compliance of their activities with the requirements for safe transportation, disposal and recycling. New approaches and technologies in the field of waste management for their introduction at production facilities are regularly studied.

The companies of the Group try to meet the requirements of the legislation in the area of waste management, as well as gradually

Volume of generated wastes in 2018 is 288.3 thousand ton (14% less than in 2017), among them 268.9 thousand ton were classified as “hazardous”, and 19.4 thousand ton as “unhazardous”. Most part of hazardous waste 67% are drill mud (drill cuttings and waste drilling mud). The reduction in total waste generation compared with 2017 was primarily due to the reduction in drilling waste generation.

More 80% of all generated wastes is transferred for processing to specialized companies under a contract. Other significant ways of waste management are: reuse, recovery, combustion and placement at disposal site.

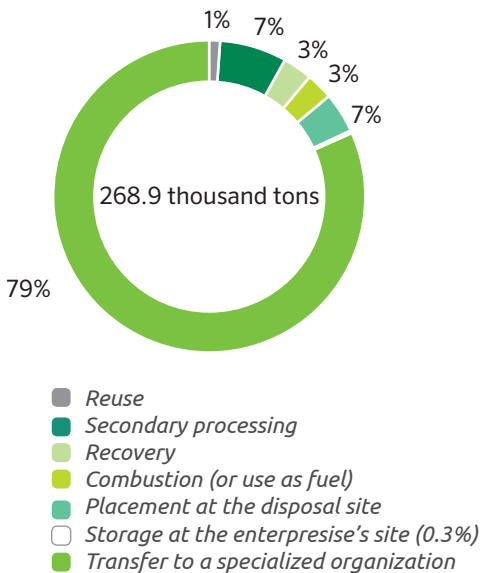
Given the enormous role that contracting companies play in the process of processing and disposing of KMG waste, the Company strives to improve the selection criteria of potential suppliers to ensure that work is performed at a high level and with full transparency throughout the cycle – from waste generation, transportation, to processing and final placement. In 2019, KMG plans to standardize the procedure for interaction with contractors and ensure the same high level of environmental management for both the KMG Group companies and their contractors.

KMG is also carrying out tremendous work on the recultivation of polluted land and sludge pits – pollution of the “historical heritage”.

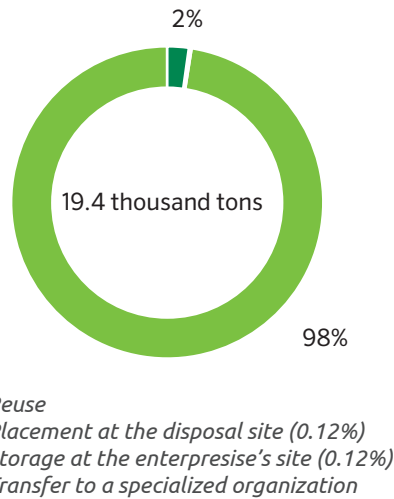
For each individual case, projects are being developed for the remediation of oil-contaminated lands, taking into account the climatic features of the region, the nature, volume and duration of pollution; selected the most effective methods for cleaning and remediation. This issue is controlled by the top management of the Company and is one of the highest priority at the moment. In 2019, a single roadmap for all historical pollution at KMG fields will be formed, and by 2024 the Company plans to completely eliminate them. For example, already in 2018, “Embamunaygas” JSC carried out the reclamation of historically contaminated lands in areas in the oil and gas extraction departments of Zhylyoymunaygas and Dossormunaygas – it cleared 24 hectares of oil-contaminated land (99.4 thousand tons of oily soil). Further works of Embamunaygas on the reclamation of historically contaminated lands will continue until 2022.

Much work in this direction is also being carried out by “Mangistaumunaygas” JSC. By the end of 2018, 6 oil waste storage sites were completely cleaned and disposed of. By the end of 2019, it is expected to clean up and eliminate the remaining 4 landfills. In the future, oil waste will not be stored on the company’s territory but will immediately be transferred to specialized organizations for processing.

Hazardous waste for 2018 by type treatment, %



Unhazardous waste for 2018 by type treatment, %

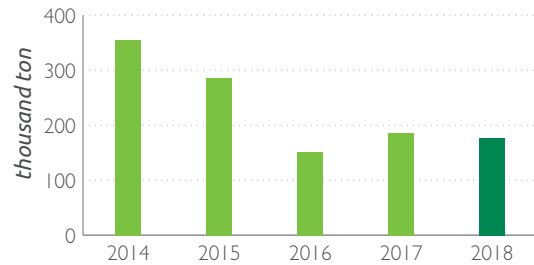


Drill mud generation



In 2018, Extracting companies of the KMG generated 176.4 thousand ton of drill mud (6% less than in 2017), including: 38.4 thousand ton of waste drilling mud; 138 thousand ton of drilling cuttings. All drill mud of extracting companies of the KMG Group is transferred to specialized organizations for disposal. Methods of further waste disposal by these companies: inertisation, thermal method, chemical method, biological remediation and dumping at special disposal sites.

KMG waste drilling mud generation



	Onshore projects		Offshore projects	
	Waste drilling mud, thousand tons	Drill cuttings, thousand tons	Waste drilling mud, thousand tons	Drill cuttings, thousand tons
2014	116.50	236.95	0.91	0.88
2015	83.08	200.62	1.14	1.10
2016	44.24	107.13	0	0
2017	49.50	134.28	0.99	1.06
2018	37.05	137.19	1.36	0.81

Transportation of hazardous wastes

KMG does not import/export hazardous wastes outside/within Kazakhstan.

COMPLIANCE WITH THE REQUIREMENTS



We try to conduct our production activity within the framework of the legislation of the Republic of Kazakhstan and to take appropriate measures to prevent environmental damage.

The Company will continue its work on detection of inconsistencies with the environmental legislation of the Republic of Kazakhstan at production facilities, on identification of problem issues and risks management to take measures on prevention of any inconsistencies with the requirements of the legislation.

For 2018, the environmental protection Group of KMG companies was charged with administrative fines, damages and tax payments for excess emissions in the amount of KZT 85.6 billion, of which the Company recognized and actually paid KZT 9.7 billion, contested in court 55.9 billion tenge. The remaining claims are disputed by the Company in court as unlawful.

One of the extractive companies was imposed an administrative penalty for disposing of production waste at landfills without permits for emissions into the environment for periods amounting

to KZT 55.9 billion. KMG was able to prove the illegality of the claim and in January 2019, by decision of the judicial division in civil cases, it was decided to cancel the administrative fines and tax payments and terminate the proceedings.

Another company for burning sour gas without a permit in the flare of the Complex Gas Treatment Facility imposed penalties of KZT 29.7 billion, including administrative fines, damages for environmental pollution and tax payments for excessive gas flaring. The reason for the excess of the acid gas combustion rate was the delayed launch of the LO-CAT desulfurization system at the CGTP. The desulfurization system began to work at the end of 2018, and the flaring of sour gas at the flare was immediately stopped. Of the amount claimed, in 2018 KZT 9.2 billion was actually paid. For the remaining amount, litigation is ongoing.

HSE TRAINING

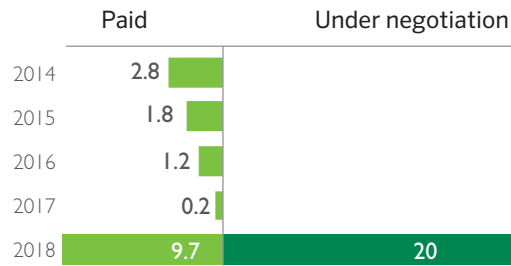
Despite the importance of technologies designed to reduce risk, no technological innovation can solve the problem of rash solutions. People continue to be the determining factor. Therefore, we are ensuring employee competence as an integral part of HSE control system development.

More than 45,458 people were trained in the existing 70/20/10 – on-site / internal / external / on-the-job training model implemented in the KMG Group of companies based on their own 6 Training and Course Plants / Centers on occupational health and safety, industrial and fire safety.

Own training centers are located in “Ozenmunaygas” JSC (Zhanaozen), “KazTransOil” JSC (Aktau), “Intergas Central Asia” JSC (Atyrau, Shymkent), “Pavlodar Petrochemical Plant” LLP (Pavlodar) and “Oil Services Company” LLP (Aktau).

In addition to the existing teaching staff in the centers for advanced training, line managers and highly qualified experts from

Environmental Fines 2014–2018, bln tenge



In 2018, non-financial sanctions were also applied to one of the Company’s oil refineries, namely, such requirements were set as: to adjust the design of permissible discharges, comply with established standards for the concentration of pollutants in wastewater, take the necessary measures to improve the efficiency of treatment facilities, develop plan for the modernization of treatment facilities. The Company carried out work on all of the above items.



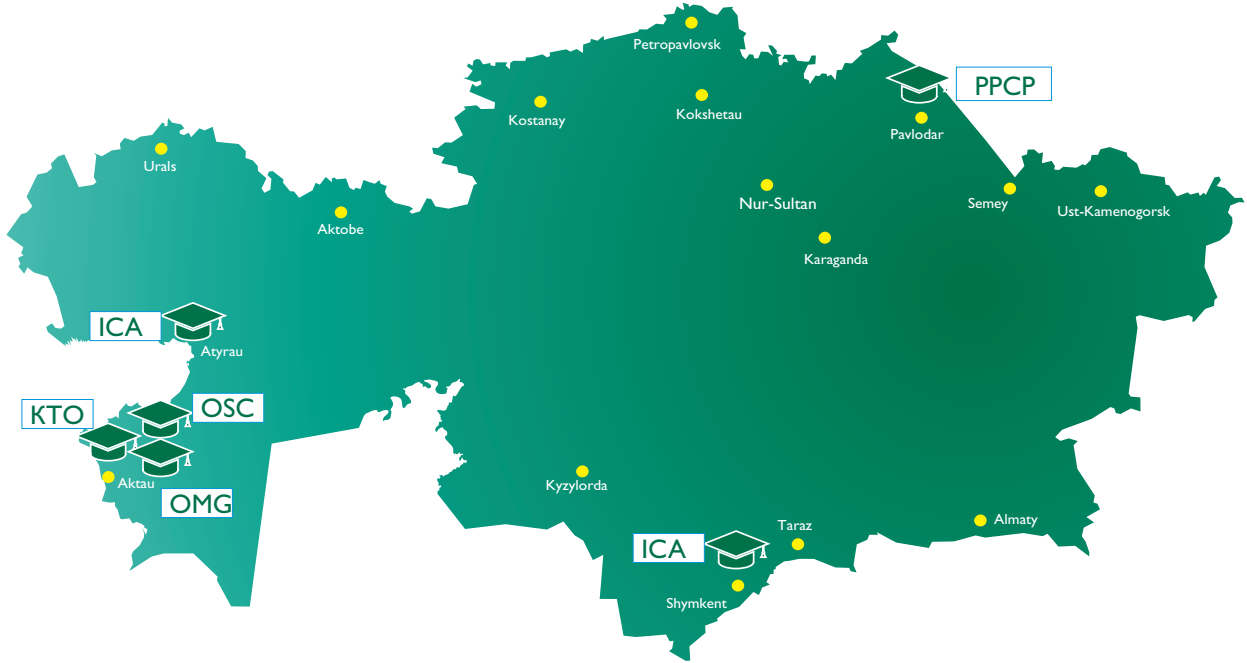
among the production personnel who have a long production experience are also involved.

There are mentoring and internal coaching programs among experienced workers implemented, master classes and trainings, various competitions among advanced workers are held, which allow to improve internal communications and motivate staff to strive to be the best in their profession.

In order to improve safety culture, in 2018, together with ExxonMobil, a free two-stage training course on the exchange of experience in the field of HSE and environmental protection was held, in which over 65 employees of the KMG Group of companies participated.

As part of the implementation of the new modules “Incident Management” and “Audits and Inspections”, training was conducted for 220 employees who are users of the system in the KMG Group of companies. Training took place in Aktau, Atyrau and Nur-Sultan.

KMG Training Overview



 Location of 6 KMG Group Training Centres

Six KMG Training Centres covered **34%** of HSE mandatory State legislation trainings for KMG Group

Remaining **66%** of mandatory by State legislation HSE trainings were done by 3rd parties for **1.1 billion KZT**

On the basis of “Mangistaumunaygaz” JSC in Aktau, training was conducted (seminar / training) on the topic: “Professional pathology and certification of workplaces on working conditions”, which was attended by about 40 health and occupational health professionals of the KMG Group. ■

SOCIAL RESPONSIBILITY





As one of the country's largest employers, the Company adheres to a social orientation that is based on the principles of partnerships with workers and trade unions.

The Company aims at:

- promoting productive employment;
- ensuring decent work and working conditions;
- compliance with labor and human rights;
- honest business conduct and rejection of corruption;
- assistance to the development of society and regions of presence.

EMPLOYMENT

GRI 102-7, 102-8, 103-1, 103-2, 103-3, 401-1, 401-2, 401-3, 402-1

The basis of KMG’s personnel management system is KMG’s personnel policy for 2017–2021 (hereinafter referred to as the “Personnel Policy of KMG”).

It defines the main approaches, principles, requirements and directions for the development of the human resource management function in the KMG Group of companies until 2021.

The concept of personnel policy is aimed at creating conditions for increasing the value of human capital in the KMG Group.

Achieving this strategic objective is based on the three main objectives of the HR function:

- 1) Creation of a single HR function and a single model of personnel management for the entire KMG Group.
- 2) Continuous improvement and increased openness of the personnel management function.
- 3) Corporate culture development and leadership skills.

Each goal includes a list of specific tasks, which are key areas of personnel policy.

The concept of personnel management system development:

Mission

Increase in the value of the KMG Group of companies

Vision

Creating of conditions to increase in the value of human capital in the KMG Group

Goals

Creation of a single HR function and a single personnel management model throughout KMG

Constant improvement and increase of personnel management function transparency

Corporate culture development and leadership skills improvement

Objectives

Streamlining HR processes, policies, methods, tools, templates throughout the KMG Group

Regular monitoring and improvement of HR function

Improvement of corporate culture, increase of social stability and development of the necessary behavior characteristics of personnel

Streamlining approaches to the HR organizational structure formation throughout the KMG Group

Regular communication and feedback from HR function

Leadership skills and personnel management development among managers at different level

HR process automation

Outsourcing HR processes that don't create added value to the Shares Services Center

Creating atmosphere of mutual respect and trust, unity and cohesion within the KMG HR function

The concept of personnel policy is based on the following key principles:

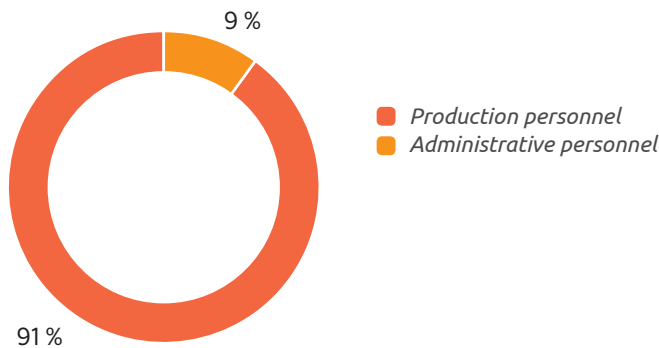
- 1) Balance of interests of employees and the Company;
- 2) Uniform personnel policy for the entire KMG Group;
- 3) Shift of the HR role from administratively supportive to strategic for business;
- 4) Creating added value for the business;
- 5) Optimal organizational structure and number of employees.
- 6) Planning the number, based on the needs of the business and labor market conditions.
- 7) Continuous improvement of training and continuing education programs.
- 8) Building a self-learning organization for the model 70/20/10.
- 9) Responsibility of managers for personnel management.
- 10) Creating a culture of employee involvement in the joint achievement of strategic goals.
- 11) Creating conditions for motivating employees.
- 12) Preventing law violations.

The total actual number of employees at the end of the reporting period in 2018 amounted to 78,933 people for the KMG Group of companies, and out-staffing 3,347 people.

The number of employees was optimized due to a moratorium on hiring, retirement of employees, natural turnover, and the withdrawal of non-core activities.

At the same time, the share of production personnel in the total number of personnel is 91%, administrative and management personnel – 9% (in 2017, 89% and 11%, respectively). Considering that the direction of a company’s activity is associated with difficult, dangerous and harmful working conditions, the proportion of men is 81.2%, women 18.8%.

Personnel by categories over the reporting period, %



Principle 1

Business communities shall support and respect protection of internationally recognized human rights.



Principle 2

Business communities shall make sure that they are contributory infringer of human rights.

Principle 3

Business communities shall ensure freedom of association and effective recognition of right on collective bargaining.



Principle 5

Business communities shall ensure prohibition of child labour.

Principle 6

Business communities shall ensure elimination of discrimination in employment and occupation.

Employees, detailed by gender for 2015–2018, %

Years	2015	2016	2017	2018
men	74.8	79	80.8	81.2
women	25.2	21	19.2	18.8

In age category main share of employees is represented in group from 31 to 50 years old – 58.3%, while share of men is 80%, women – 20%. Number of employees older than 50 years old is 25% of total number of staff, while share of men is 83%, women – 17%. Share of young people under the age of 30 is 16.7% of total number, and share of men is 83%, women – 17%.

Employees by age groups in 2016–2018, %

years	2016	2017	2018
under 30 years	23	17.5	16.7
from 31 to 50 years	54	58	58.3
older than 50 years	23	25	25

Number of newly employed employees 9,491 people, or 12.1% of the average number.

Newly employed employees for 2014–2018, %

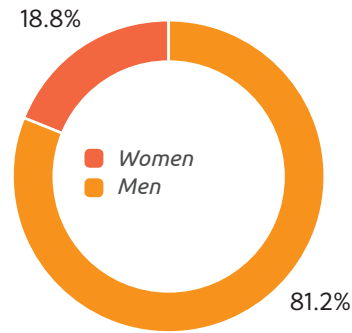
2014	2015	2016	2017	2018
15.3	23.9	20.7	9.4	12.1

The number of employees with whom employment was terminated during the reporting period was 10.5 thousand people, including people of the age under 30 – 18.2% (20.4% in 2017), from 31 to 50 years – 55% (46.4% in 2017), older than 50 years – 27.7% (23.5% in 2017).

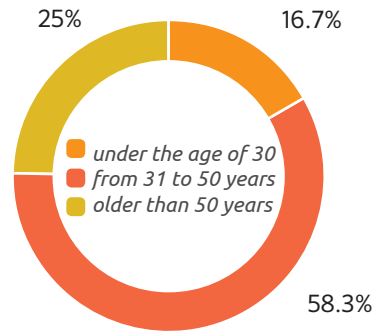
Employee turnover rate* by Group of companies KMG was in average 14% (14% in 2017, 13.8% in 2016, 11.1% in 2015).

* Employee turnover rate = $A / B \times 100\%$, where A is the number of employees with whom employment was terminated due to their own initiative, by agreement of the parties and through the fault of the employee at the end of the reporting period; B – the average number for the period.

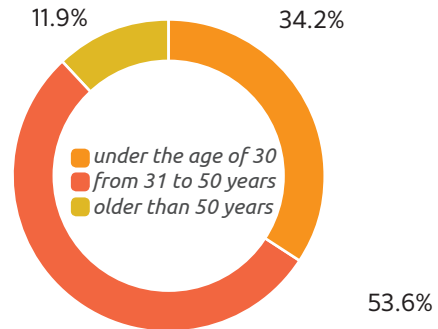
Employees, detailed by gender for reporting period, %



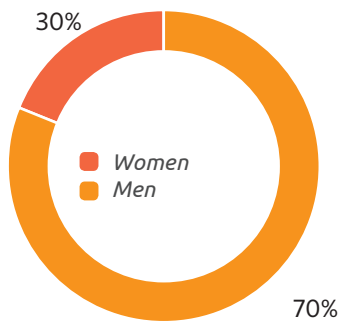
Employees by age groups for reporting period, %



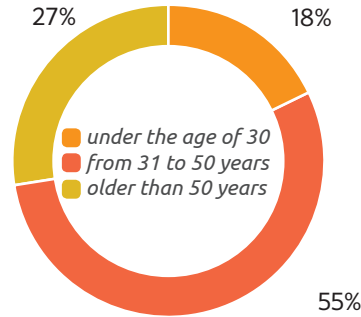
Newly employed employees, by age groups, %



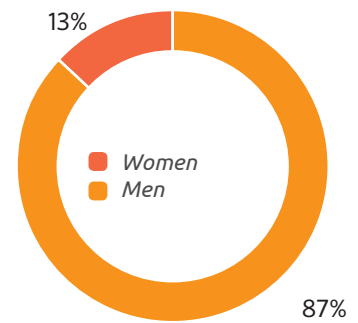
Newly employed employees, by gender over the reporting period, %



Employees with whom employment was terminated during the reporting period by age group, %



Employees with whom employment was terminated during the reporting period by gender, %



KMG provides employees with a guaranteed social package which includes various types of social benefits and compensations:

- material assistance for health improvement to annual leave
- payments related to pregnancy and childbirth
- monthly payments to employees absent on leave for childcare till 1.5 years
- compensation for termination of employment contract in case of impossibility to transfer to another job
- due to full loss of ability to work
- disability, one-time payment in case death of employee for organizations of funeral
- one-time payment to family of employee, who died in the result of an accident at work.

The Company also provides social guarantees for voluntary medical insurance in case of illness and organization of rest for children of employees in children’s health camps in Kazakhstan.

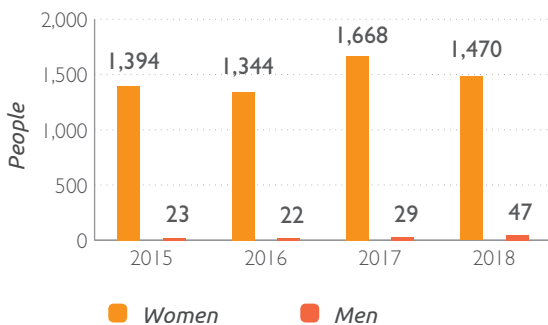
Moreover, employees are provided with historically formed types of social support. These types of social assistance are specified in collective agreements

or provided in internal regulatory documents of the enterprise. Such payments include payments in connection with achievement of anniversary date, in connection with the marriage, short-term leave at the time of marriage, in connection with the birth of a child, due to death of relatives with the preservation of wages, for treatment and payment of medical operations, in the case, if the cost of treatment exceeds limit, established by the insurance program, to disabled workers, disabled children, and many others.

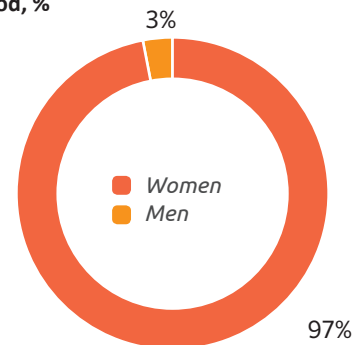
The number of employees on leave for child care without preservation of salary pay at the end of the accounting period was 1,517 people (in 2017 – 1,697 people), with share of women 97%, and 3% of men. Women, who are on maternity leave, are 436 (856 women in 2017).

The collective agreement does not provide for a period for notifying employees on changes in operating activities, this issue is regulated in accordance with the Labor Code. If the working conditions are changed, the Company shall notify the employee in writing not later than fifteen calendar days. Minimum notification period towards significant changes in the company’s activities is 4 weeks.

Employees on maternity/paternity leave for the accounting period and by years



Employees on maternity/paternity leave for the reporting period, %



HUMAN RIGHTS

The Company recognizes the undeniable importance of providing equal rights to everyone. The Company strictly honours the fundamental human rights.

The Company strictly complies with the requirements of the labour legislation of the Republic of Kazakhstan and does not violate its norms, according to which no one can be subject to any discrimination in the exercise of labour rights on grounds of origin, social, official and property status, gender, race, nationality, language, attitude to religion, belief, place of residence, age or physical disabilities, as well as belonging to public associations. The Company did not receive complaints regarding discrimination during accounting period.

The Company does not use child labor, forced labor, recognizes the equal rights of all employees, regardless of their race, religion or gender.

Every employee of the Company has equal opportunities in implementation of its rights and freedoms in the area of work. Moreover, the company actively participates in negotiations with employees on concluding, amending and supplementing the collective agreement, strictly observes terms of the negotiations and ensures the work of the relevant joint commissions, provides the information, necessary for the negotiations, strictly complies with the terms of the collective agreement.

According to the labour legislation, every employee is entitled to participate in collective bargaining and drafting of collective agreement through their representatives, as well as familiarize themselves with the signed collective agreement.

There are no restrictions on the right of freedom of association and collective

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

bargaining by types of activity or territorial character in the company's activities. We, as a socially responsible company, fully support this right and create a favourable environment for implementation of workers' right to freedom in association.

For the KMG Group today, in many manufacturing enterprises collective agreements have been concluded.

For the purpose of unification, a Standard Form of Collective Agreement has been developed, which establishes uniform principles for organizing wages, providing social support, working conditions, work and rest schedules, etc. An algorithm for resolving collective labor disputes, if they arise, is step-by-step registered in the Model Form of Collective Agreement. Standard requirements for the development of collective agreements for the KMG Group allow for the construction of labor relations on a legislative basis, to prevent unreasonable overstatement or reduction of benefits for employees, to recommend consistent actions in the event of labor disputes in order to prevent conflicts and relieve tensions.

In 2018, the number of employees of the KMG Group of companies covered by collective agreements was the same as in 2017 – 58,838 people, in 2016 – 58,658 people, in 2015 – 54,197 people.

The Company's interaction with trade unions is carried out within the framework of the social partnership, established by the labour legislation at the sectoral and regional levels. At the sectoral level, the main parameters of interaction (social guarantees, issues of labour organization, principles of wages, employment, gender and youth policy, safety and labour protection, prevention and resolution of labour conflicts, etc.) are defined in the Sectoral Agreement in oil

and gas, oil refining and petrochemical branches of the Republic of Kazakhstan for 2017–2019.

At the regional level, there are regional commissions for social partnership, which, consider specific collective labour disputes in addition to regional issues of employment and labour protection.

According to the research of the Social Stability Index (SSI), conducted by the Social Partnership Center of “Samruk-Kazyna” JSC, SSI of KMG has increased from 61 to 74 percent from 2013 to 2017, and is at “above average” level, in 2018, SSI is 74%.

According to the results of the SSI research, for all identified alarming zones in KMG and individual subsidiaries and affiliates, plans of activities to ensure social stability are developed

Unified System of Internal Communications

Since 2016, all industrial enterprises of KMG are introducing internal communications tools, according to which the reporting meetings of top managers with labor collectives are held systematically twice a year, quarterly meetings of line managers of the KMG subsidiaries and affiliates are held with teams, managers meet with the trade union, each employee’s ability to contact questions to the management of enterprises and get an answer in a timely manner. In 2018, 65 reporting meetings of senior managers with labor collectives.

In addition, in order to create and maintain effective mechanisms for direct communication between employers and employees in the subsidiaries and affiliates, timely inform employees about the goals and objectives of activities in the subsidiaries and affiliates, bring the current situation in the organization to the workers, create a positive image of the organization among employees, monitor the parameters of climate in labor collectives in the subsidiaries and affiliates, meetings of line managers with employees of the structural unit, sector, brigade, workshop, unscheduled meetings are held, management

and updated. The plan of KMG activities to ensure social stability covers various areas of company activity which affect the social well-being of employees (internal communications, food quality, living conditions, PPE, training, career growth, etc.) A survey of the involvement and satisfaction of the administrative and managerial employees of the organizations of the KMG Group of companies was also conducted.

The results of the research show what kind of working conditions the employees of the organization are satisfied with and what they don’t, how employees assess the level of development of communications and relationships, how well-being of employees has changed in comparison with the previous period, quality of life of production workers of organizations, etc.

with the workforce to discuss issues that require prompt decision-making, employees are received by the heads of subsidiaries and affiliates on personal matters.

Also, in each subsidiaries and affiliates, a First Executive blog, as well as corporate information site were created, displays for video announcements were installed to bring internal corporate information to labor collectives. Information boards are used to inform employees with operational announcements and messages. To identify problematic issues, an annual survey among employees is conducted in subsidiaries and affiliates.

Also, once a quarter, the management holds a meeting with the subsidiaries and affiliates trade union on the most pressing issues regarding the implementation of the collective agreement, the state of labor discipline, consideration of applications from the labor collective, safety and labor protection issues, provision of social benefits and compensations and other socially significant issues in the enterprise.

STAFF DEVELOPMENT

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

Within the framework of capacity development, KMG pays special attention to the development of human resources, both production and administrative personnel.

On an annual basis, KMG provides training and personnel development, forms new approaches and development programs for employees of the KMG Group of companies.

In order to improve the process of training and development, formation and maintenance of the required level of personnel qualifications, and the effective use of budgetary funds, a new concept of personnel training and development has been implemented in the Group of KMG companies since 2016 “70/20/10 – on job training/internal training/external training”. As part of the introduction of the new training model, the Institute of internal trainers has been introduced as well as distance employee training programs, internship program and executive development programs for the Group of KMG companies.

The Formula for Success Internship Program is popular among subsidiaries and affiliates in the manufacturing sector. Within the framework of the program, employees exchange experience with colleagues from other companies of the KMG Group, as well as employees of partner companies. During the program, more than 50 employees of KMG’s subsidiaries and affiliates passed internships at 5 partner companies, including employees of “Embamunaygas” JSC, “Oil Services Company” LLP, and “Mangistaumunaygas” JSC. 53 employees from 9 companies completed internships in 6 companies of the KMG subsidiaries and affiliates.

Also, at the moment there is cooperation with the Corporate University ENI. Employees of the KMG Group of companies are trained in production areas based on this university. In 2018, 15 employees of the block explored production and oilfield services underwent training at ENI University within 2 days.

For the development of KMG Group employees, internships are also being held at the invitation of partner companies – JCCP, JOGMEC. Each year, these companies accept more than 20 employees of the KMG Group for training in various areas of activity from mining, exploration, processing and marketing to HR and finance management. Training takes place on average from two weeks to one month together with representatives of different countries in related areas, which also allows sharing experience and knowledge.

Together with the General Electric company we have put together a training program on “Oil and Gas Technologies at the Oil and Gas University of GE (Florence, Italy). Since 2015, during the cooperation in this area, 7 employees of the KMG Group have been trained. Duration of training is 5 months.

Special attention is paid to executive development programs. In 2017, by the decision of the KMG Personnel Committee, the development programs for the top managers of the KMG corporate center and subsidiaries and affiliates (CEO-1, CEO-2) “Unified Development Program” were approved, as well as for the directors and their deputies and for the participants of the Unified Personnel Reserve “Effective Manager”. The unified development program



was completed in 2018 and received good feedback; 99 top managers from 26 subsidiaries took part in the program from September 2017 to October 2018. In addition, in 2018, the Human Capital Development Program of the UPSTREAM block was developed and implemented in pilot mode in the “Kazakhturkmunay” LLP and “Kazakhoil Aktobe” LLP. Within the framework of this Program, participants have developed projects that will raise the effectiveness of companies. In 2019, this Program is planned to be implemented at other UPSTREAM companies. During the passage of the program, all relevant areas of human resources development were covered such as digital leadership, influence and emotional leadership.

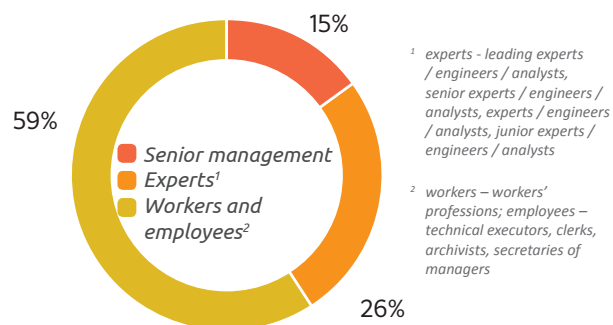
In addition to these projects, KMG annually increases the number of trained employees. In 2018, KMG trained 129 thousand people* for a total KZT 5,7 billion, which is 2.5 % higher than in the previous year. The increase in number of trained and expenses are associated with launch and implementation of the above programs.

Among the number of trained workers, 15% are women, 85% are men (in 2017, 14% and 86%, respectively). At the same time, expenses on training women make up 23% of the total amount of expenses, with the average cost of training women – KZT 69 thousand, men – KZT 40 thousand. 8% of those trained are administrative and managerial personnel, 92% are production personnel. A high percentage of trained production personnel is associated with the mandatory training of workers employed at hazardous production facilities in accordance with the legislation of the Republic of Kazakhstan.

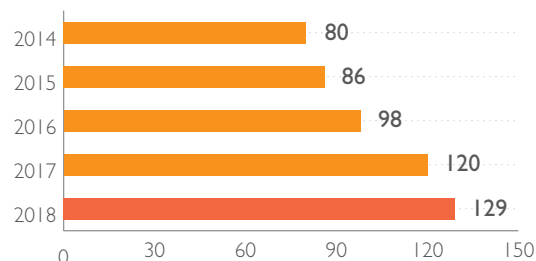
The share of workers trained in ecology, HSE, civil defense and emergency situations was 59%. At the same time, 20% of the trained were trained in blue-collar occupations, and 5% – training related to manufacturing. 50% of all training expenses were spent on training on these topics.

* when calculating the number of trained, the passed training is taken into account (for example, if 1 employee has passed two trainings, the number of trained is 2).

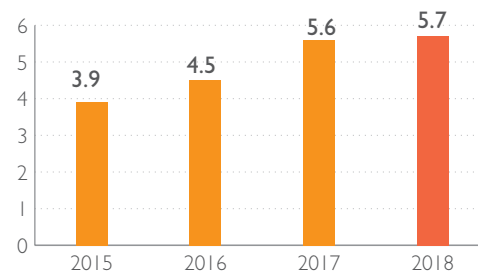
Average annual number of academic hours per one trained employee by category of employees, %



Total number of trained employees by years, thousand people



Personnel development costs, bln tenge



Average annual number of academic hours per one trained employee is 15.0 hours (16.1 hours in 2017), including:

- 14.9 hours per man (15.8 hours in 2017) and 15.6 hours per woman (18.3 hours in 2017);
- 19.5 hours per senior manager, 18.3 hours per expert – 18.3 and 12.6 hours per worker/employee.

Number of employees taking training by gender, %

Years	2015	2016	2017	2018
Men	86,5	88	86	85
Women	13,5	12	14	15

At the same time, we note that the training and development of workers is carried out regardless of gender and position.

One of priorities of long-term development of KMG is training of personnel reserve, which includes search and identification of young and promising leaders with the purpose of training managers of new format with modern competencies.

The main principle is purposeful and systematic training of leaders to ensure continuity of management, as well as provision of employees with opportunities for development and career growth in the Group of companies KMG.

In addition to training programs specifically for reservists, two-diploma EMBA programs are developed and conducted. In total, over the period of the project implementation, 35 employees included in the EQF and do not have a master’s degree of the Unified Personnel Reserve completed the EMBA program. Today, another 14 employees continue their education under a similar program for 2018–2019.

Also, during the EQF project, three meetings of reservists were held, which were team



building and training. To enhance personal and business skills, thematic trainings and seminars are also systematically conducted.

The main topics of the implemented training and staff development programs

1. **Participation in conferences, symposiums, forums**
2. **Personal business training**
3. **Personnel Management**
4. **Internal control and audit**
5. **Integrated management systems, ISO and OHSAS standards**
6. **Environment, HSE**
7. **Kazakhstani content and procurement of goods, works and services**
8. **Economics and Finance**
9. **Corporate Governance. Project management**
10. **Documentation Support**
11. **Information Technology**
12. **Language Training**
13. **Training in mediation programs, negotiation process**

14. **Training in production areas (taxiways, transportation, gas business, processing and marketing, service projects)**
15. **Training for Workers**
16. **Master programs, mini MBA**
17. **Internship**

PERSONNEL EVALUATION

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

The staff assessment procedure is in place in KMG since 2004 and aims to determine the effectiveness of the activities and the promotion of adequate and non-material remuneration.

Procedure is regulated by the Rules for evaluation of KMG's administrative staff and is based on two types of evaluation: professional development assessment and performance evaluation.

According to the recognized international practice of effective human resources management, this procedure is based on assessment of business and leadership competences of employees, taking into account evaluation of performance during the accounting year.

Performance evaluation is carried out on a quarterly basis, according to purposes

of the year, and has specific quantitative results from 1.5 to 0 of the official salary as a quarterly bonus payment.

The evaluation of professional development is conducted annually and pursues the purpose of non-material incentives – evaluation commission can recommend enrolment to personnel reserve, promotion, rotation in the Group of companies KMG, individual training or other opportunities for professional development.

In 2018 annual assessment of employees was made which showed that 85.4% of them are the employees of the KMG corporate center. 33.7% of all employees of the Company passed the performance assessment for the reporting period. Among them 23% are women, 77% are men; senior management – 16%, experts – 41%, workers – 43%.

EQUAL POSSIBILITIES

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

Our approach to staff motivation is based on the principles of ensuring worthy level of labor payment, transparency and respect for employees' rights. All changes in labor payment system are made taking into account opinions and proposals of the interested parties.

In the companies of the Upstream business area, the Single System of Labor Payment

(SSLP) was introduced, which purpose is assistance to achieve strategic purposes of KMG, by adjustment of payment system, ensuring a single labor payment system in all departments, and strengthening employees' interest in labor outcomes. This system provides for a number of conditions, when employees are provided with compensation payments, extra charges and additional payments; one

of these criteria is the Regional coefficient – an indicator of the relative increase in salary in order to compensate for the additional costs and increased labor costs, related to performance of work in regions with severe climatic conditions. The highest value of this ratio is in Mangistau and Atyrau oblasts.

The ratio of salary of initial level in the Group to the minimum salary, established by the national legislation for 2018, is in the range from 6:1.

The ratio of senior management* in regions of presence** employed among the representatives of the local population*** is 85 %.

The ratio of employees in the executive team is 9% of the total number of employees, including 17% of women and 83% of men.

There are no differences in the base salary and in remuneration system depending on gender differences in the Group of companies KMG. The level of salary in the organizations of the Group of companies KMG is associated with position, but not to the employee, i.e. men and women working

* Senior management (First leader and his deputies)
 ** Region of presence – region (district) of operating activities
 *** Local population – citizens of the Republic of Kazakhstan

in the same position receive the same salary and other payments as stipulated by the rules of payment in the organization.

To improve the payment system, the Company has introduced a new approach to evaluation of number of positions (from the level of the administrative staff of the Corporate Center to the level of top management of subsidiaries), using international methodology in the area of human resources management.

The payroll system for the top management body and the management team is focused on performance, motivation, productivity and efficiency, and includes elements of short-term remuneration based on the performance of key performance indicators. In accordance with the best world practices, performance indicators of managers reflect economic, environmental and social objectives of the Group.

Within the framework of the Transformation Program in 2018, project on the assessment of the correspondence of senior employees to the occupied positions (Job Matching****) has been continued.

****Job Matching – a project on the assessment of candidates for compliance with the requirements of the positions target functional.

OUR COMMUNITIES

Contracts for the subsoil use of KMG subsidiaries provide for the allocation of significant funds for the development of the region of production presence and social assistance to segments of the population in need. Companies transfer funds to local executive bodies, which allocate funds, based on the needs of local communities. The company plans to introduce an impact assessment of this activity.

In 2018, under the subsoil use contracts, about KZT 5.2 billion was allocated

GRI 103-1, 103-2, 103-3, 203-1

for the development of regions by the KMG Group.

In 2016, by the decision of the Board of Directors of “Samruk-Kazyna” JSC, the Fund’s Charity Policy and the Fund’s Charity Program were approved, according to which KMG and its subsidiaries cannot plan and provide sponsorship and charitable assistance on their own.

According to the Charity Policy, all charitable activities of the “Samruk-Kazyna” JSC Group

History Case:

For example, “Ozenmunaygas” JSC annually allocates KZT 900 million to the fund of social programs for the development of the infrastructure of Zhanaozen and the Karakiya district.

“Embamunaygas” JSC allocated more than KZT 586 million for the construction of kindergartens, a secondary school and a health and fitness complex in the villages of Sagyz and Karabau of the Kyzylkoginsky district, in the village of Akkystau of the Isatai district in 2018.

“KazMunayTeniz” LLP MNE has contributed to the financing of the reconstruction

of the Shetpe – Kyzan road in the Mangistau district in the amount of KZT 371 million.

In order to support certain sports and sporting events, “Pavlodar Petrochemical Plant” LLP has allocated KZT 200 million to the city of Pavlodar.

“Kazgermunai” JV LLP has allocated funds in the amount of KZT 1,465 million for the construction of the Youth Service Center in the city of Kyzylorda, the contribution counted on socio-economic development for the period 2018–2019.

“Kazakhoil Aktobe” LLP provided social assistance to needy segments of the population in the amount of more than KZT 9 million.

of companies are carried out by the Samruk-Kazyna Trust Social Project Development Fund (hereinafter referred to as the Fund).

Priority areas of activity of the Fund:

- help people, communities in the social and medical sector;
- development of media, cultural community, human development;
- strengthening labor relations, international relations, investments in the sustainable development of society;
- support for regional business initiatives;
- promotion of the image of Nur-Sultan on the world arena.

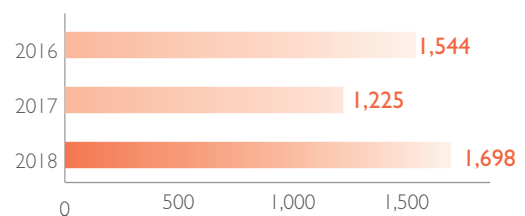
Fund implements charity projects and programs aimed at solving socially important issues for the population from the entire Group of companies of “Samruk-Kazyna” JSC.

The activities of the Fund are carried out with the assistance of state bodies, the Government of the Republic of Kazakhstan and experts

in the field of public and social policy.

The administrators of charitable projects of the Corporate Fund are non-governmental organizations identified on a competitive basis.

Amount of funds allocated to charity by KMG, million KZT (to finance Samruk-Kazyna Trust projects)



History Case:

In the KMG Group of companies on the overall solution of labor collectives and trade unions of the Group of companies, new tools have been introduced to consolidate the labor collectives of the KMG Group of companies – corporate events that are organized at the KMG level: the “Uzdik Maman” professional skill contest among working professions, the Summer Games and the Youth Meeting.



In 2018, at industrial sites of KMG subsidiaries the final stage of the professional skill competition “Best in profession – 2018” passed among KMG Group employees on following professions:

- “Mangistaumunaygaz” JSC (Kalamkas area) by professions is an oil and gas production operator; well research operator; reservoir pressure support operator; process equipment repairs and maintenance technician, turner;
- “KazTransOil” JSC (Training and Course Works, the city of Aktau) by profession is a gas and gas welder, electrician, instrumentation and fitter and by professions a chemical analysis technician, oil preparation operator (commodity operator) (GNPS, Aktau);
- “Oil Services Company” LLP (Zhetybai field) by workover and wireline crew;
- “Oil Transport Corporation” LLP (MUTT, Aktau) by professions is a car driver, engine driver-TSA – 320, steam truck operator.

In the first stage, which was completed earlier in the subsidiaries, 3,300 employees from 34 basic professions of the oil and gas complex took part. In the second, final part of the competition at the KMG level, 186 participants demonstrated their skills in 20 trade jobs, in 2017 the number of competitors was 120 people from 17 trade jobs.

Along with experienced workers, the best young professionals with conscientious labor and high skill, who proved the right to represent their enterprises on the main professional sites of KMG, took part in the united KMG competition.

To perform theoretical and practical assignments at production facilities, premises, special work sites,

equipment, a computer class and equipment were prepared, and regulations for each profession were developed and approved, indicating the procedure and conditions for the Competition and the technical characteristics of the practice.

To assess the practical skills of the contestants, a competent jury of representatives from KMG subsidiaries – experts in their profession was created.

The theoretical part of the Competition for all professions is organized by online computer testing in two languages at the choice of the participant of the Competition.

According to the results of the competition, a high-profile award ceremony was held. The best were awarded with the “Uzdik Maman” medal, money prizes in size for 1st place – 100 MCI, for 2nd place – 70 MCI, for 3rd place – 50 MCI. At the same time, in accordance with the established regulations of KMG, each subsidiary for professional skills for employees who won a prize in the “Best in Profession” competition at the first stage can set additional payments for the 1st place – 30%; 2nd place – 20%; 3rd place – 10% of the corresponding wage rate or official salary.

As a result, at the closing ceremony of the Competition a video “Uzdik Maman – 2018” was shown, which demonstrated the entire course of the Competition from the beginning to the end. News about the Contest, photos and videos posted on: http://www.kmg.kz/uzdik_maman2018.

History Case:

In order to develop corporate culture and strengthen harmonious relationships in labor collectives, KMG supports other team-building initiatives, including regular Spartakiad among employees of the KMG Group of companies.

Spartakiad is an annual sporting event in which KMG employees and teams of KMG subsidiaries and affiliates participate. Healthy competitive spirit and informal communication during the Spartakiad contribute to the formation of affection and responsibility for the image of your company and KMG as a whole.

The idea of holding this event under the single flag of KMG was proposed by the leaders of trade unions

and labor collectives of KMG subsidiaries. In 2018, the Spartakiad was held for the third time at the KMG level with the participation of employees of the KMG Group of companies.

The Spartakiad gathers a large number of participants every year: in 2018, 30 organizations (more than 310 people) took part in the Spartakiad in 8 kinds of sports (futsal, volleyball, swimming, basketball, chess, tennis, arm wrestling, togyzqumalak). Information on the Games is posted on the KMG corporate website: <http://www.kmg.kz/spartakiada2018>.



History Case:

Since 2014, the youth policy has been actively implemented in the KMG Group of companies. Youth councils were created in KMG and in 45 subsidiaries and affiliates of KMG.

Annual youth gatherings are held where mass cultural events, meetings with government officials, relevant master classes are organized for participants (for example, on such topics as “mediation like conflict prevention in the youth environment”, “leadership in action”, “personal effectiveness” and others), issues of concern to young workers discussed and appropriate recommendations are developed.

Once again, in order to form and implement a unified youth policy for the KMG Group of companies in October 2018, young specialists of the KMG Group of companies gathered in the city of Almaty from different regions to exchange experience and discuss future prospects.

Young specialists took part in the cycling marathon, met with the Akim of the city of Almaty, B. Baibek, and organized a creative concert for socially vulnerable people with their own resources. ■



ANNEXES



Independent Assurance Report on the Sustainability Report 2018

Annex 1. Reporting Boundaries, Changes, Notes

Supplements, Assumptions and Description of Methodology for Data Collection, Consolidation and Calculation

Annex 2. Key Sustainable Development Indicator

Annex 3. GRI Content Index

Annex 4. Abbreviations and Acronyms



Building a better
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Independent Assurance Report on the Sustainability Report 2018

To the Shareholders, Management and Stakeholders of National Company “KazMunayGas” JSC

Subject matter

At the request of National Company “KazMunayGas” JSC (hereinafter ‘the Company’) we have obtained a limited level assurance on the qualitative and quantitative information disclosed in the Sustainability Report 2018 of National Company “KazMunayGas” JSC (hereinafter ‘the Report’) except for the following matters:

- ▶ statements regarding future events and the performance of the Company; and
- ▶ information about Report compliance with the Sustainable Development Goals and with the principles of the UN Global Compact.

Applicable criteria

The criteria of our engagement were the Global Reporting Initiative Sustainability Reporting Standards (hereinafter ‘GRI Standards’) and the sustainability reporting principles of the Company as set forth in paragraph “About Report”, in Annex 1 of the Report, also in the notes to indicators in the Report text. We believe that these criteria are appropriate given the purpose of our assurance engagement.

Management’s responsibilities

The management of the Company is responsible for the preparation of the Report and for the information therein to present fairly in all material respects sustainability policies, activities, events and performance of the Company for the year ended December 31, 2018 in compliance with the GRI Standards and the sustainability reporting principles of the Company that are described in forth in paragraph “About Report”, in Annex 1 of the Report and also in the notes to indicators in the Report text. This responsibility includes designing, implementing and maintaining internal controls relevant to the preparation of a sustainability report that is free of material misstatements, selecting and applying appropriate reporting principles and using measurement methods and estimates that are reasonable in the circumstances.

Our responsibilities

Our responsibility is to independently express conclusions that:

- ▶ The information in the Report is, in all material respects, a fair representation of sustainability policies, activities, events and performance of the Company for the year ended December 31, 2018;
- ▶ The Report is prepared ‘in accordance’ with the GRI Standards using the Core option.

We apply International Standard on Quality Control 1 and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Summary of work performed

Our engagement was conducted in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised), *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by IFAC, and accordingly included the following procedures:

- ▶ Interviews with representatives of the Company management and specialists responsible for its sustainability policies, activities, performance and relevant reporting,
- ▶ Analysis of key documents related to Company sustainability policies, activities, performance and relevant reporting,
- ▶ Obtaining understanding of the process used to prepare the information on sustainability performance indicators of the Company and other engagement circumstances by reviewing the reporting process used for preparation of sustainability reports,
- ▶ Analysis of the Company stakeholder engagement activities,
- ▶ Benchmarking of the Report against sustainability reports of selected international and Kazakhstani peers of the Company and lists of sector-specific sustainability issues raised by stakeholders,

- ▶ Review of a selection of corporate and external media publications with respect to the Company sustainability policies, activities, events, and performance in 2018,
- ▶ Analysis of material issues in field of sustainable development identified by the Company,
- ▶ Identification of sustainability issues material for the Company based on the procedures described above and analysis of their reflection in the Report,
- ▶ Review of data samples regarding key production, transportation and refining of oil and gas, economics and finance, personnel management, use of energy resources, environmental protection, industrial safety, labor safety and social and charitable activities indicators for the year ended December 31, 2018, in order to ensure that at the Company level these data were collected, prepared, collated and included in the Report appropriately,
- ▶ Visit next subsidiaries:
 - Atyrau refinery LLP, Atyrau;
 - KazTransOil JSC, Nur-Sultan;
 - Asia Gas Pipeline LLP, Almaty

in order to interview executives responsible for production and finance, human resources, environmental protection, safety, labor protection, charitable and social activities, and gather evidence supporting the assertions on the Company's sustainability policies, activities, events, and reviewing production performance regarding health, safety and environment activities,
- ▶ Collection on a sample basis of evidence substantiating other qualitative and quantitative information included in the Report at the headquarters level,
- ▶ Assessment of compliance of the Report and its preparation process with Company's sustainability reporting principles, and
- ▶ Assessment of compliance of information and data disclosures in the Report with the requirements of the Core option of reporting 'in accordance' with the GRI Standards.

Our evidence gathering procedures are more limited than for a reasonable assurance engagement, and therefore less assurance is obtained than in a reasonable assurance engagement.

Conclusion

Based on the procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the information in the Report does not represent fairly, in all material respects, the sustainability policies, activities, events and performance of the Company for the year ended December 31, 2018 in accordance with the GRI Standards and sustainability reporting principles of the Company.

Nothing has come to our attention that causes us to believe that the Report is not prepared 'in accordance' with the GRI Standards using the Core option.

Ernst & Young Kazakhstan LLP

10 October 2019

ANNEX 1 REPORTING BOUNDARIES, CHANGES, NOTES

GRI 102-45, 102-46, 102-48, 102-49

Reporting boundaries

The Report covers subsidiaries and affiliates of KMG, in which fifty or more percent of voting shares (participation shares) are directly or indirectly owned by KMG by right of ownership or trust management, as well as legal entities whose activities KMG is entitled to control.

The list of legal entities included in the consolidated financial statements is presented by the following organizations: “KMG Exploration Production” JSC, “KazTransGas” JSC, “KazTransOil” JSC, “Atyrau Refinery” LLP, “Pavlodar Refinery” LLP, “KMG Onimderi” LLP, “KazMunayTeniz” LLP, “KMG” LLP, “Cooperative KMG PKI U.A.”, “KMG International N.V.”, “KMG Karachaganak” LLP, “Kazmortransflot” LLP, “KMG Drilling & Services” LLP.

Boundaries of sections “Management System for Health, Safety and Environmental Protection” and “Safety at the Workplace”: subsidiaries and affiliates with 50% or more of KMG’s participation. Contractors and joint ventures with a KMG interest of <50% are not included in the reporting boundaries (with the exception of “TenizService” LLP with a 49% interest). Additionally, besides to full-time employees, the outsourced and outstaffed workers of the Company are included in the reporting boundaries.

Boundaries of sections “Use Of Energy Resources And Energy Performance”, “Utility Consumption”, “Reducing Energy Consumption” and “Energy Intensity” include 14 subsidiaries and affiliates that fully reflect the energy-intensive enterprises of the Group: Upstream – “Ozenmunaygas” JSC, “Embamunaygas” JSC, “Kazgermunai” LLP JV, “Karazhanbasmunay” JSC, “Mangistaumunaygas” JSC, “Kazakhturkmunay” LLP, “Kazakhoil Aktobe” LLP. Midstream – “NMSK “Kazmortransflot” LLP, “KazTransGas” JSC, “KazTransOil” JSC. Downstream – “Atyrau Refinery” LLP, “Pavlodar Refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPI BITUM” LLP.

Boundaries of the section “Water resources use”: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP,

“Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” JSC, “Kazgermunai” LLP JV, “Karazhanbasmunay” JSC, “KazGPZ” LLP, “KazTransOil” JSC, “KazTransGas” JSC, “NMSK “Kazmortransflot” LLP, “Pavlodar Refinery” LLP, “Atyrau Refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPI BITUM” LLP, “Zhambyl Petroleum” LLP, “Ozenmunayservis” LLP, “Oil Construction Company” LLP, “Oil Services Company” LLP.

Boundaries of the section “Climate change and air quality” cover the following subsidiaries and affiliates of KMG: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” JSC, “Kazgermunai” LLP JV, “Karazhanbasmunay” JSC, “KazGPZ” LLP, “KazTransGas” JSC, “KazTransOil” JSC, “Pavlodar Refinery” LLP, “Atyrau Refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPI BITUM” LLP and oilfield service organizations. The Report does not cover subsidiaries and affiliates such as “KMG Security” LLP, “Cooperative KMG PKI U.A.”, “KMG Karachaganak LLP”, “KMG Onimderi” LLP and “KMG Drilling & Services” LLP, which were covered by the financial statements.

Boundaries of the section “Associated petroleum gas utilization” cover the following subsidiaries and affiliates of KMG, in which fifty or more percent of voting shares (participation shares) are directly or indirectly owned by KMG on the right of ownership or trust management, as well as legal entities whose activities KMG is entitled to control: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” JSC, “Kazgermunai” JV LLP, “Karazhanbasmunay” JSC.

Boundaries of the “Waste Management” section: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” JSC, “Kazgermunai” JV LLP, “Karazhanbasmunay” JSC, “KazGPZ” JSC, “Urikhtau Operating” LLP, “KazTransOil” JSC, “KazTransGas” JSC group of companies, “Pavlodar Refinery” LLP, “Atyrau Refinery” LLP, “PetroKazakhstan Oil Products” LLP,

“JV “CASPI BITUM” LLP, “Zhambyl Petroleum” LLP, “Ozenmunayservice” LLP, “Oil Construction Company” LLP, “Oil Services Company” LLP.

Boundaries of the section “Greenhouse gas emissions” cover the following subsidiaries and affiliates of KMG: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” JSC, “Kazgermunai” JV JSC, “Karazhanbasmunay” JSC, “KazGPZ” LLP, “KazTransGas” JSC, “KazTransOil” JSC, “Pavlodar Refinery” LLP, “Atyrau Refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPI BITUM” LLP, KMG-International (Rompetrol, Petroleum, Vega), “Batumi Oil Terminal” LLC and oilfield services organizations.

Boundaries of the section “Compliance with environmental requirements”: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” JSC, “Kazgermunai” JV LLP, “Karazhanbasmunay” JSC, “KazGPZ” LLP, “KazTransOil” JSC, “KazTransGas” JSC, “NMSC “Kazmortransflot” LLP, “Pavlodar Refinery” LLP, “Atyrau Refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPI BITUM” LLP, “Zhambyl Petroleum” LLP and oilfield services organizations.

Boundaries of the “Environmental Expenses” section include: “Ozenmunaygas” JSC, “Embamunaygas” JSC, “Karazhambasmunay” JSC, “Kazgermunai” JV LLP, “Kazakh GPZ” LLP, “Ozenmunayservice” LLP, “Ural Oil and Gas” LLP, “TulparMunayService” LLP, “Kazakhturkmunay” LLP, “Kazakhoil Aktobe” LLP, “Mangistaumunaygas” JSC, “KazTransOil” JSC, “KazTransGas” JSC, “KazMunayTeniz” JSC MNE, “NMSC “Kazmortransflot” LLP, “Oil Construction Company” LLP, “Oil Services Company” LLP, “Satpayev Operating” LLP, “Urikhtau Operating” LLP, “KMG Systems & Services” LLP, “Atyrau Refinery” LLP, “Pavlodar Refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPI BITUM” LLP.

The “Employment” section includes data on the actual number of employees for all subsidiaries and jointly controlled entities on the activities of which KMG has a significant influence regardless of percentage of voting shares (ownership interest).

Boundaries of the “Personnel Development” section: subsidiaries, affiliates, and jointly controlled entities with a 50% or more KMG interest, with the exception of “TenizService” LLP with a 49% interest and “PKOP” LLP with a 49.7% interest.

Boundaries of the “Equal Opportunities” section: subsidiaries, affiliates and jointly controlled entities with a 50% or more KMG interest, with the exception of “TenizService” LLP with a 49% interest, “PKOP” LLP with a 49.7% interest and Caspi Meruerty Operating Company BV with a 40% interest.

Boundaries of the “Our Communities” section: subsidiaries, affiliates and jointly controlled entities with a 50% or more KMG interest, with the exception of “TenizService” LLP with a 49% interest.

Boundaries of the section “Human Rights”: subsidiaries, affiliates and jointly controlled entities with a 50% or more KMG interest, with the exception of “PKOP” LLP with a 49.7% interest.

Supplements, assumptions and description of methodology for data collection, consolidation and calculation

Data in the text of the Report may slightly differ from the data presented in consolidated financial statements (CFS) due to estimate indicators rounding. In such cases, data of the relevant CFD posted on the KMG website is correct and paramount. Given data may slightly differ from previously published due to different calculation methods and approaches to information disclosure in the Report.

The following business areas are included in the text of the Report: “Upstream” – KMG’s subsidiaries and affiliates engaged in oil and gas exploration and production; “Midstream” – KMG’s subsidiaries and affiliates engaged in oil and gas transportation; “Downstream” – KMG’s subsidiaries and affiliates engaged in oil refining.

Methodology for collection, consolidation and indicators estimation in the “Environmental Responsibility and Safety in the Workplace” chapter

The IOGP (International Oil and Gas Producers Association) benchmarks are listed in the chapter on various parameters. KMG has been a member of this Association since 2018. The Association posts HSE report compiled on the basis of data provided by all the major players in the world oil and gas industry on a yearly basis. Thus, KMG obtains HSE industry average values to grasp the state of this or that aspect. IOGP Report 2017s – Safety performance indicators – 2018 data and

Environmental performance indicators – 2017 data benchmarks, which can be read on the Association official website: <https://www.iogp.org> were used in this report.

KMG currently does not record and calculate data on absentee rate & lost day rate in accordance with GRI 403: Occupational Health and Safety 2016.

Methodology for collection, consolidation and indicators estimation in the “Key Performance Indicators for KMG Group” Section

Average barrelization ratio for each asset is determined for reserves data. Each field has its own ratio (through hydrocarbon densities), and for the asset and KMG in general we use the average ratio.

Oil and gas production data are presented considering operating assets in which KMG is directly involved in the management of production processes, as well as in megaprojects where KMG has a share of participation, but is not involved in the production process.

Methodology for collection, consolidation and indicators estimation in the “Water footprint” Section

Analysis of water withdrawal, water consumption and water disposal is carried out in accordance with IOGP and IPIECA reporting requirements. Based on these requirements, forms for environmental information provision by subsidiaries and affiliates were developed. Besides numerical information, information on measurement methods, metering devices and technological features of water resources use in fields and oil refineries is also taken into account.

POCR purchases steam from the city CHP. Condensate return to the CHP is about 30% and is recorded using metering devices. The remaining condensate is recorded by the calculation method as part of the POCR water withdrawal since 2016. Consequently, direct water withdrawal from natural sources is calculated for the AOR and PKOP, and for the POCR the withdrawal from urban water

supply systems plus indirect water withdrawal from the Irtysh River through the city CHP in the form of non-return of condensate and chemically purified water.

KazTransOil supplies the Volga water through the Astrakhan – Mangyshlak water line to users of droughty Atyrau and Mangystau regions of Kazakhstan. KTO transfers more than 90% of the collected water to other water users without using it. Therefore, in order to calculate total water withdrawal value for the entire group of companies corresponding to the physical picture, it is necessary to not take the water transferred by KTO to other KMG companies into account. Also, the amount of actual water withdrawal for the group of companies will not be equal to the sum of water withdrawal volumes for business areas for the same reason.

Supplements to the “Water footprint” Section

The Caspian Sea and the Irtysh River, the total length of which is 4,254 km, are included in the List of water bodies of special state significance approved by the Government of the Republic of Kazakhstan dated January 21, 2004. The Ural River, with a length of 2,428 km, is not included in this list, however, in October 2016, a Treaty between the Government of the Republic of Kazakhstan and the Government of the Russian Federation on preservation of the transboundary Ural basin ecosystem was signed in Astana city (now – Nur-Sultan city), which, in turn, is based on the Convention on wetlands of international importance, mainly as habitats for waterfowl, dated February 2, 1971 and the Convention on Protection and Use of Transboundary Watercourses and International lakes dated March 17, 1992. The Pyatimar reservoir, having a water line area of 5,000 ha and located on the territory of the Pyatimar rural district along the Kushum River, is included in the list of fishery reservoirs of local importance (Resolution No. 176 of the West Kazakhstan Region Akimat dated June 16, 2017).

KMG also conducts exploration and production of hydrocarbon raw materials at the “Urikhtau” field, an oil and gas condensate field located in the Mugalzhar district of the Aktobe oblast. Most of the field is located in the Kokzhide sands known for their fresh water reserves. Kokzhide sands are the largest underground water reserves in Western Kazakhstan and unique in drinking water quality. There are also rare, endemic plant species listed in the “Red Book” of Kazakhstan on the territory, for example: *Medicago komarovii* – a rare, endemic species with a declining range; *Centaurea talievii* – a rare species with a declining range; *Tulira Schrekii* Ragel – a species with a declining range. Underground waters of Kokzhide are included in the List of geological, geomorphological and hydrogeological bodies of the state nature reserve fund of national and international significance (Resolution No. 1212 of the Government of the Republic of Kazakhstan dated November 18, 2010) and represent a huge potential for providing the population with drinking water in the future.

Supplements to the “Drill mud generation” Section

Drilling is carried out at KMG exclusively by contracting companies and on a turnkey basis – meaning that all generated drilling waste is initially owned by drilling contractors, which conclude agreements with specialized waste disposal/

recycling companies. Further treatment of drilling waste is carried out in accordance with requirements of the environmental legislation of the RoK.

Supplements to the “Biodiversity Conservation and Environmental Monitoring” Section

KMG conducts the necessary research in the field of forecasting impacts and assessing the level of impacts on biodiversity as part of the EIA in accordance with the legislative requirements of the Republic of Kazakhstan in the field of environmental protection. These studies, as well as the implementation of environmental monitoring programs, allow the Company to identify risks and

make timely decisions on measures to preserve biodiversity or mitigate the negative impact on ecosystems. More detailed information on the impact of our company’s activities on biodiversity in the regions of presence is disclosed in the EIA projects at http://kmg.kz/rus/ustoichivoe_razvitie/environment/.

Methodology for collection, consolidation and indicators estimation in the “Energy consumption” Section

Indicators for the generation and consumption of electric and thermal energy are presented on the basis of data obtained from energy metering (consumption) devices on a monthly basis, including data from commercial metering devices for calculating consumption of purchased electric and thermal energy. In the absence of metering devices, the indicators are determined by calculation method in accordance with regulatory and technical documentation. Reporting on other

types of fuel and energy resources is presented according to actual consumption data for the following types of fuel: natural gas, oil, associated gas, fuel gas, fuel oil, gasoline and diesel fuel. National ratios are used in order to convert data on energy resource consumption to tons of fuel equivalent in accordance with Appendix 2 to the Rules for the Formation and Maintenance of the State Energy Register.

Methodology for collection, consolidation and indicators estimation in the “Employment” Section

 102-8

The employee turnover rate is calculated according to the formula $E_t = A / B \times 100\%$, where A is the number of employees who quit on their own initiative, by agreement of the parties and due to the employee’s fault at the end of the reporting period; B – average number for the period

forms, which are filled out by subsidiaries and affiliates on a quarterly basis.

The text of the Report reflects the actual number of employees of the Company; the number of staff was presented earlier in the Reports.

Information on subparagraph d) “Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work, by gender” (Disclosure 401-3) is partially collected; The information for subparagraph e) “Return to work and retention rates of employees that took parental leave, by gender” (Disclosure 401-3) is not calculated, since both subparagraphs are not material topics. ■

Data on the number of employees are consolidated on the basis of national statistical

ANNEX 2 KEY SUSTAINABLE DEVELOPMENT INDICATORS

Environmental Indicators

	Upstream			Midstream			Downstream		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
Greenhouse gas emissions									
Greenhouse gases direct emissions (CO ₂ , mln ton) ¹	2.8	2.7	2.5	0.7	1.6	2.4	4.1	4.2	4.4
Greenhouse emissions intensity (ton CO ₂ per 1,000 ton HCS)	115	110	101	–	–	–	219	221	–
APG combustion									
Flame combustion (mln ton CO ₂)	0.7	0.7	0.3	–	–	–	–	–	–
Number of combusted gas per unit of extracted HCS (ton per 1,000 ton of extracted HCS)	12.0	11.0	6.0	–	–	–	–	–	–
Flame combustion (mln m ³)	332.9	315.8	148.9	–	–	–	–	–	–
Energy consumption (mln gigajoule)									
Power capacity	40.7	39.1	55.2	32.3	37.4	55.6	40.2	43.0	56.8
Pollutant emissions									
Sulfur oxides (SO _x) (thousand ton SO ₂)	9.0	7.8	6.7	0.4	0.2	0.2	7.5	6.8	6.5
Nitrogen oxides (NO _x) (thousand ton NO ₂)	5.8	5.9	4.8	3.2	3.5	5.5	3.5	3.9	5.9
Spillages									
Illegal tapping – volume (thousand ton)	–	–	–	–	–	–	–	–	–
Illegal tapping – quantity	1	–	–	3	6	1	–	–	–
Oil spillages – volume (ground) (thousand ton)	1.6	1.7	0.78	–	–	0.005	–	–	0.063
Water									
Total amount of water withdrawal (mln m ³)	49.6	49.4	52.2	29.2	30.9	33.5	10.7	12.2	16.2
Water discharge – volume (mln m ³)	0.8	1.1	1.1	1.2	1.4	1.0	6.8	6.5	8.8
Wastes									
Hazardous (thousand ton)	195	273	220.6	8.8	8.9	2.9	38	41.2	39.1
Unhazardous (thousand ton)	6.7	2.7	5.9	6.6	3.4	5.2	11	6.6	8.0
Total wastes (thousand ton)	201.7	275.7	226.5	15	15.4	8.1	49	47.8	47.1
* among them drilling wastes, ground (thousand ton)	151	186	174.2	–	–	–	–	–	–
* among them drilling wastes, sea (thousand ton)	0	2.05	2.2	–	–	–	–	–	–

¹ Direct GHG emissions by Company business areas were rounded to decimal places. In this regard, the amount of emissions by areas slightly differs from the total values of emissions presented in the section "Greenhouse gas emissions"

* Values by indicators in this table are presented by KMG business areas and their summation may not correspond to the total volumes / values relevant indicators presented in the text of the Report, since this breakdown does not take into account the reallocation of resources within the KMG group of companies and does not provide data in the "Service" business area.

Environmental expenses*

Expenses	2015		2016		2017		2018	
	mln KZT	mln USD	mln KZT	mln USD	mln KZT	mln USD	mln KZT	mln USD
1 Expenses related to waste management, emission and discharges clearing, total	4,719.8	21.2	6,682.8	19.5	10,929.4	33.5	11,844.6	34.3
1.1 Waste disposal and processing	1,858.1	8.4	2,330.6	6.8	5,285.1	16.2	5,833.9	16.9
1.2 Emissions and discharges clearing	2,515.1	11.3	3,778.3	11.0	5,398.4	16.5	4,531.5	13.1
1.3 Expenses for development and confirmation of document package on greenhouse gas emissions	79.9	0.4	52.6	0.15	91.5	0.3	104.4	0.3
1.4 Ecological insurance	238.0	1.0	365.5	1.1	97.2	0.3	58.6	0.2
1.5 Expenses for liquidation of environmental damage, including expenses for oil spill response	27.8	0.1	152.1	0.45	1.3	0.004	1,278.8	3.7
1.6 Expenses for compensatory measures in the area of environment protection	n/a	n/a	n/a	n/a	55.8	0.17	34.3	0.1
2 Expenses for prevention of environmental impact and Environmental management, total	1,367.2	6.2	1,394.7	4.08	1,398.7	4.3	1,035.8	3
2.1 Staff for employees education and training	9.7	0.04	246.3	0.7	76.4	0.2	58.6	0.17
2.2 Management systems external certification	62.9	0.25	47.2	0.11	50.7	0.2	47.8	0.14
2.3 Staff for general activity in the area of Environmental management	4.3	0.02	2.1	0.006	3.7	0.01	2.6	0.008
2.4 Research and developments	376.1	1.7	263.1	0.76	839	2.6	548.5	1.6
2.5 Additional expenses for introduction of cleaner technologies	6.5	0.03	0.0	0.0	0	0	158.4	0.5
2.6 Additional expenses for “green purchases”	5.1	0.02	6.1	0.01	68.7	0.2	2.3	0.007
2.7 Other expenses related to environmental management	902.9	4.0	835.7	2.4	360	1.1	217.6	0.6

* Disaggregated indicators may differ slightly from aggregate indicators due to rounding to decimal places

Environmental payments (standard)

	2015		2016		2017		2018	
	mIn KZT	USD	mIn KZT	USD	mIn KZT	USD	mIn KZT	USD
Atmospheric emissions due to APG flame combustion	3,340	15,063,365	4,325	12,655,820	3,886	11,917,244	1,998	5,795,192
Atmospheric emissions (without APG flame combustion)	1,087	4,902,359	1,064	3,113,478	1,217	3,733,852	1,424	4,133,201
Water pollution	38	171,379	40	117,048	43	131,125	47	135,858
Waste disposal	514	2,318,135	412	1,205,595	178	547,228	259	753,902

Affected kinds of flora and fauna on specially protected natural reservations

Kind of flora and fauna	Kenderli-Sayanskaya state conservation area	Ustyurt state nature reserve	Novinskiy reserve	Conservation area of the North part of the Caspian Sea	State integrated nature reserve "Kokzhide-Kumzhargan"
Vegetation	20 (13)	336 (5)	4	229 (54)	94
Birds	10	166 (18)	27	466 (63)	75
Animals, including	18		3		
Mammals	17	29 (8)		125 (41)	44
Reptiles		15 (1)		20 (9)	8
Fish				133 (27)	

* In brackets: number of species, listed in the Red Book of the RoK.

Indicators of social aspects

	2016	2017	2018
Actual number of employees, people	90,267	84,061	78,933
Employees, detailed by gender, including:			
women, %	21	19.2	18.8
men, %	79	80.8	81.2
Employee turnover rate, %	13.8	14	14
Lost time injury rate (LTIR)	0.49	0.42	0.32
Fatality rate (FAR)	4.5	3.25	0.65

Actual number of employees at the end of 2018

Indicators	men			women			Total	Share of each category in total number of employees, %
	under 30 years	from 30 to 50 years	older than 50 years	under 30 years	from 30 to 50 years	older than 50 years		
KMG								
Total in organization, including:	11,013	36,801	16,280	2,189	9,199	3,451	78,933	100%
managers of all levels	421	4,129	1,667	54	896	283	7,450	9%
experts	2,062	6,021	2,086	1,371	4,108	1,051	16,699	21%
workers	8,530	26,651	12,527	764	4,195	2,117	54,784	69%

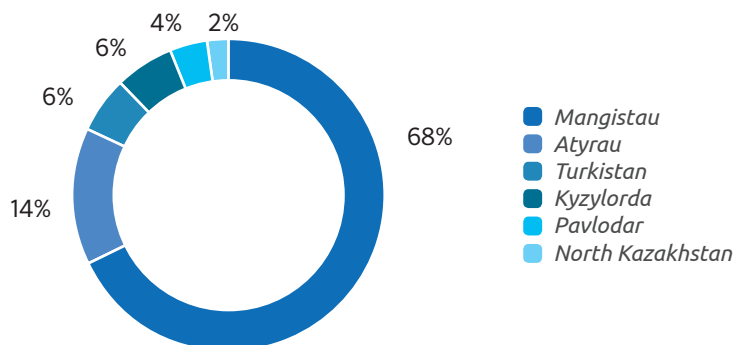
Actual number of KMG Group of companies' employees in Kazakhstan by regions and city of republican significance (Almaty and Nur-Sultan)

Mangistau	31,296
Atyrau	12,990
Aktobe	3,330
Pavlodar	2,381
Karaganda	1,426
Turkistan	4,178
Kyzylorda	1,919
Zhambyl	1,356
West Kazakhstan	2,331
Kostanay	734
East Kazakhstan	29
North Kazakhstan	131
Nur-Sultan city	6,294
Almaty city	3,577
Total	71,972

Actual number of KMG Group of companies' employees by countries

Kazakhstan	71,972
Romana	5,581
Georgia	1,253
United Kingdom	13
China	39
Russia	75
Total	78,933

Number of injured in industrial accidents by region, %



Indicators of economic aspects

	2016	2017	2018
Profit, billion tenge	360,1	525.4	693.5
Purchases, billion tenge	1,871	2,553	2,428
Social support expenses, billion tenge	19	18.9	22
Expenses for personnel development, billion tenge	4.5	5.6	5.7
Charity, billion tenge	1.5	1.2	1.7

ANNEX 3 GRI CONTENT INDEX

For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report.



GRI 102-55

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
GRI 101 Foundation 2016					
General Disclosures					
GRI 102: General Disclosures 2016	102-1 Name of the organization	1, 10			
	102-2 Activities, brands, products, and services	1, 10-13			
	102-3 Location of headquarters	137			
	102-4 Location of operations	10-11			
	102-5 Ownership and legal form	10			
	102-6 Markets served	10-11			9
	102-7 Scale of the organization	1, 10-11, 51, 98			9
	102-8 Information on employees and other workers	1, 99			8
	102-9 Supply chain	10-11, 54			12
	102-10 Significant changes to the organization and its supply chain	6, 16-17			9, 12
	102-11 Precautionary Principle or approach	71		7	14, 15
	102-12 External initiatives	42			17
	102-13 Membership of associations	42-43			17
	102-14 Statement from senior decision-maker	6, 44			
	102-15 Key impacts, risks, and opportunities	28, 48, AR			9
	102-16 Values, principles, standards, and norms of behavior	14, 29, 37-38		1, 2, 4	5, 10, 16
	102-17 Mechanisms for advice and concerns about ethics	39-40		2, 6, 10	5, 10, 16
	102-18 Governance structure	20			16
	102-19 Delegating authority	21			
	102-20 Executive-level responsibility for economic, environmental, and social topics	21-22			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
	102-21 Consulting stakeholders on economic, environmental, and social topics	22			
	102-22 Composition of the highest governance body and its committees	23			
	102-23 Chair of the highest governance body	23			
	102-24 Nominating and selecting the highest governance body	24			
	102-25 Conflicts of interest	25			
	102-26 Role of highest governance body in setting purpose, values, and strategy	25			
	102-27 Collective knowledge of highest governance body	26			
	102-28 Evaluating the highest governance body's performance	26			
	102-29 Identifying and managing economic, environmental, and social impacts	27		7	
	102-30 Effectiveness of risk management processes	27, AR			
	102-31 Review of economic, environmental, and social topics	27, AR			
	102-32 Highest governance body's role in sustainability reporting	4			
	102-33 Communicating critical concerns	28, AR			
	102-34 Nature and total number of critical concerns	28, AR			
	102-35 Remuneration policies	28, AR			
	102-36 Process for determining remuneration	28, AR			
	102-37 Stakeholders' involvement in remuneration	28, AR			
	102-38 Annual total compensation ratio	28, AR			
	102-39 Percentage increase in annual total compensation ratio	28, AR			
	102-40 List of stakeholder groups	30			17
	102-41 Collective bargaining agreements	102-103		3	17
	102-42 Identifying and selecting stakeholders	30			17
	102-43 Approach to stakeholder engagement	30-31			17

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
	102-44 Key topics and concerns raised	6, 15, 44			
	102-45 Entities included in the consolidated financial statements	116			
	102-46 Defining report content and topic Boundaries	4, 34, 116			
	102-47 List of material topics	34-37			
	102-48 Restatements of information	116			
	102-49 Changes in reporting	116			
	102-50 Reporting period	4			
	102-51 Date of most recent report	137			
	102-52 Reporting cycle	4			
	102-53 Contact point for questions regarding the report	137			
	102-54 Claims of reporting in accordance with the GRI Standards	4			
	102-55 GRI content index	126			
	102-56 External assurance	114			
Material topics					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	48-51			
	103-2 The management approach and its components	48-51			
	103-3 Evaluation of the management approach	48-51			
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	51			8
	201-2 Financial implications and other risks and opportunities due to climate change	48			7, 13
	201-3 Defined benefit plan obligations and other retirement plans	51			8
	201-4 Financial assistance received from government	51			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	107			
	103-2 The management approach and its components	107			
	103-3 Evaluation of the management approach	107			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	107			8
	202-2 Proportion of senior management hired from the local community	107-108			10
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	48			
	103-2 The management approach and its components	48			
	103-3 Evaluation of the management approach	48			
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	52, 53, 108			8
	203-2 Significant indirect economic impacts	52			8
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	54			
	103-2 The management approach and its components	54			
	103-3 Evaluation of the management approach	54			
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	54			8
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	55			
	103-2 The management approach and its components	55			
	103-3 Evaluation of the management approach	55			
GRI 205: Anti-Corruption 2016	205-1 Operations assessed for risks related to corruption	55-56		10	16
	205-2 Communication and training about anticorruption policies and procedures	55-56		10	16
	205-3 Confirmed incidents of corruption and actions taken	55-56			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	72			
	103-2 The management approach and its components	72			
	103-3 Evaluation of the management approach	72			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
GRI 302: Energy 2016	302-1 Energy consumption within the organization	48, 72			
	302-2 Energy consumption outside of the organization	73			
	302-3 Energy intensity	74			
	302-4 Reduction of energy consumption	73		8	7
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	75			
	103-2 The management approach and its components	75			
	103-3 Evaluation of the management approach	75			
GRI 303: Water 2016	303-1 Water withdrawal by source	75			6
	303-2 Water sources significantly affected by withdrawal of water	75-77			6
	303-3 Water recycled and reused	75-77			6
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	78			
	103-2 The management approach and its components	78			
	103-3 Evaluation of the management approach	78			
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	78-79			14, 15
	304-2 Significant impacts of activities, products, and services on biodiversity	82			14, 15
	304-3 Habitats protected or restored	91		8	14, 15
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	78-79		8	14, 15
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	84			
	103-2 The management approach and its components	84			
	103-3 Evaluation of the management approach	84			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	84-91			
	305-2 Energy indirect (Scope 2) GHG emissions	84-91			
	305-3 Other indirect (Scope 3) GHG emissions	84-91			
	305-4 GHG emissions intensity	84-91			
	305-5 Reduction of GHG emissions	84-91		8	13
	305-6 Emissions of ozone-depleting substances (ODS)	84-91			
	305-7 Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	84-91			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	91			
	103-2 The management approach and its components	91			
	103-3 Evaluation of the management approach	91			
GRI 306: Effluents and Waste 2016	306-1 Water discharge by quality and destination	75			
	306-2 Waste by type and disposal method	91-92			12
	306-3 Significant spills	70			
	306-4 Transport of hazardous waste	91			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	93			
	103-2 The management approach and its components	93			
	103-3 Evaluation of the management approach	93			
GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	93			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	98-99			
	103-2 The management approach and its components	98-99			
	103-3 Evaluation of the management approach	98-99			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	100			8
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	100			8
	401-3 Parental leave	101			8
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	102			
	103-2 The management approach and its components	102			
	103-3 Evaluation of the management approach	102			
GRI 402: Labor / Management relations 2016	402-1 Minimum notice periods regarding operational changes	101			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	64-66			
	103-2 The management approach and its components	64-66			
	103-3 Evaluation of the management approach	64-66			
GRI 403: Occupational Health and Safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	64-66			3
	403-3 Workers with high incidence or high risk of diseases related to their occupation	66-67			
	403-4 Health and safety topics covered in formal agreements with trade unions	66-67			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	104			
	103-2 The management approach and its components	104			
	103-3 Evaluation of the management approach	104			
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	105			4
	404-2 Programs for upgrading employee skills and transition assistance programs	106			4
	404-3 Percentage of employees receiving regular performance and career development reviews	107			4

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	107			
	103-2 The management approach and its components	107			
	103-3 Evaluation of the management approach	107			
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	107			10
	405-2 Ratio of basic salary and remuneration of women to men	108			10
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	55			
	103-2 The management approach and its components	55			
	103-3 Evaluation of the management approach	55			
GRI 406: Non-Discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	55-56, 102		10	16
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	102			
	103-2 The management approach and its components	102			
	103-3 Evaluation of the management approach	102			
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	102		3	16
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	107			
	103-2 The management approach and its components	107			
	103-3 Evaluation of the management approach	107			
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	107		5	16
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	55			
	103-2 The management approach and its components	55			
	103-3 Evaluation of the management approach	55			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection With 17 Sustainable Development Goals
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	55, 102		4	16
GRI G4 Sector Disclosures: Oil and Gas	OG1 Volume and type of estimated proved reserves and production	1			
	OG3 Total amount of renewable energy generated by source	50		9	7
	OG4 Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored	78, 82		8	14, 15
	OG5 Volume and disposal of formation or produced water	75			
	OG6 Volume of flared and vented hydrocarbon	90			
	OG7 Amount of drilling waste and strategies for treatment and disposal	93			
	OG8 Benzene, lead and sulfur content in fuels	13			
	OG13 Number of process safety events, by business activity	68			3

ANNEX 4 ABBREVIATIONS AND ACRONYMS

BOE	Barrel of oil equivalent
NGVRS	NGV refill station
EMBA	Executive master of business administration
ERP-system	Specific software package that implements a strategy for the integration of production and operations, labor and asset management, financial management through an integrated application software package that provides a common data and process model
FFS	Fuel filling station
AR	Annual Report
AtR	Atyrau Refinery
ANS	Aktaunefteservis Limited liability partnership
JSC	Joint-stock company
HEI	Higher education institution
GMI	The Global Methane Initiative
SDE	Subsidiary dependent entities
RVA	Road vehicle accident
ENU	Gumilyov Eurasian National University
ICA	“Intergas Central Asia” JSC
KazGPZ	“Kazakh gas refining plant” LPP
CAPEX	Capital expenses
KMG	JSC NC “KazMynayGas”
KMG EP JSC	“KazMunayGas Exploration Production” JSC
KMT	Limited liability partnership Marine oil company “KazMunayTeniz”
KOA	Joint-stock company “Kazakhoil Aktobe”
CNG	Compressed natural gas
KPI	Key performance indicators
KTO	Joint-stock company “KazTransOil”
OSR	Oil spill response
mIn	Million
MMG	Joint-stock company “Mangistaunaygas”
IFRS	International financial reporting standards
NC	National company
EIA	Environmental Impact Assessment
OMG	“Ozenmunaygas” JSC
UN	United Nations
LPE	Labor protection and environment, industrial and fire safety, environmental protection, emergency prevention
SBO	Safety behavioral observations
SDR	Sustainable development report

SPR	Single personnel reserve
SMCh	Systematic and methodological changes
PJSC	Public joint-stock company
PKOP	“PetroKazakhstan Oil Products” JSC (Shymkent Refinery)
APG	Associated Petroleum Gas
PPCP	Pavlodar Refinery
RoK	The Republic of Kazakhstan
RME	Regular medical examinations
IAS	Internal Audit Service
BD	Board of directors
MM	Mass media
LLP	Limited liability partnership
FER	Fuel and energy resources
RWC	Raw hydrocarbons
WF	Wage fund
ES	Emergency situation
EMG	“Embamunaygas” JSC
FAR	Fatality Accident Rate
GRI	Global Reporting Initiative
IAOT	International Association Oil Transportation
JCCP	Japan Cooperation Center, Petroleum
JOGMEC	Japan Oil, Gas and Metal National Corporation Technology and Research Center
LTIR	Lost-time Injury Rate
OSRL	Oil Spill Response Limited
SPE	Society of Petroleum Engineers

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