



КазМұнайГаз
NATIONAL COMPANY ҰЛТТЫҚ КОМПАНИЯСЫ

*Creating
sustainable
future*

2017

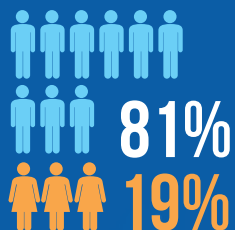
**SUSTAINABILITY
REPORT**

KAZMUNAYGAS GROUP



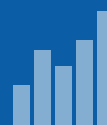
EMPLOYEES

90,111
people



PROFIT

519.5 billion
KZT
\$1,6 billion



SOCIAL SUPPORT OF EMPLOYEES

18.9 billion KZT



16.1 hours of education
per person



Number of fatal incidents

Our target — 0
fatal incidents

2017 5 people

2016 7 people

2015 4 people



ENVIRONMENTAL INDICATORS

85% level of gas
utilization

6.5 mln tons
CO₂ emissions

0.8 mln GJ energy
resources saving

84.5 mln m³ total water
withdrawal

119.42 mln GJ total energy
consumption



PROCUREMENT

2,553 billion
KZT \$7,8 billion

75% local content proportion



RESERVES
MMbbl

5,379

Oil reserves
in the category A+B+C1

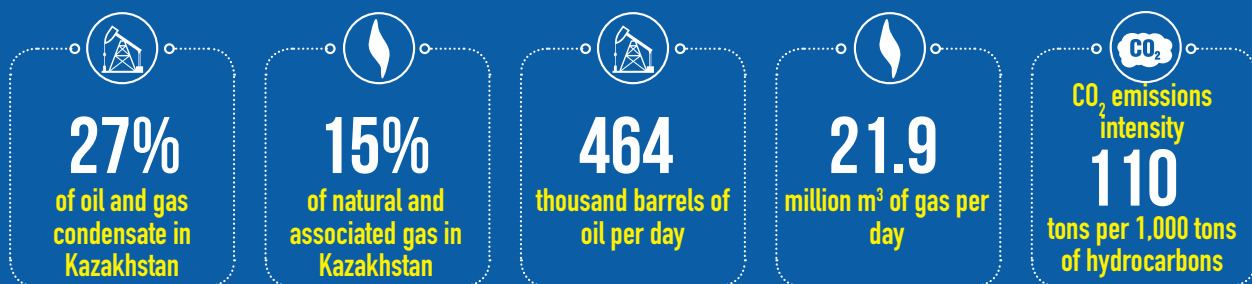
358

Condensate reserves by
category A+B+C1

3,008

Reserves of natural gas
in the category A+B+C1, m³

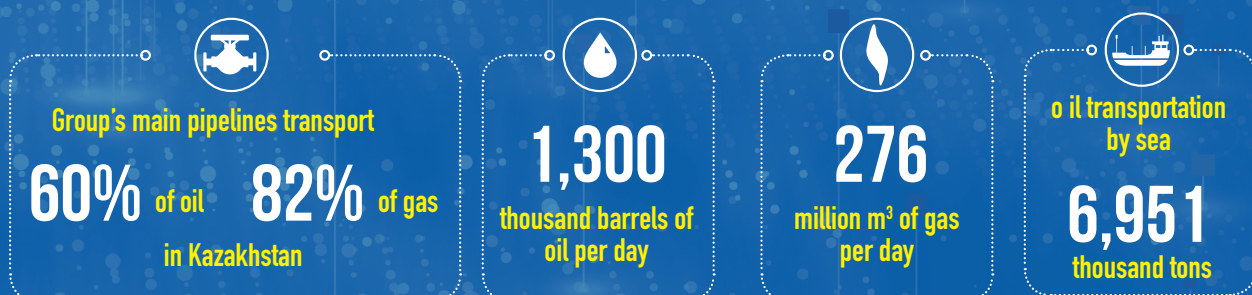
Oil and Gas Production



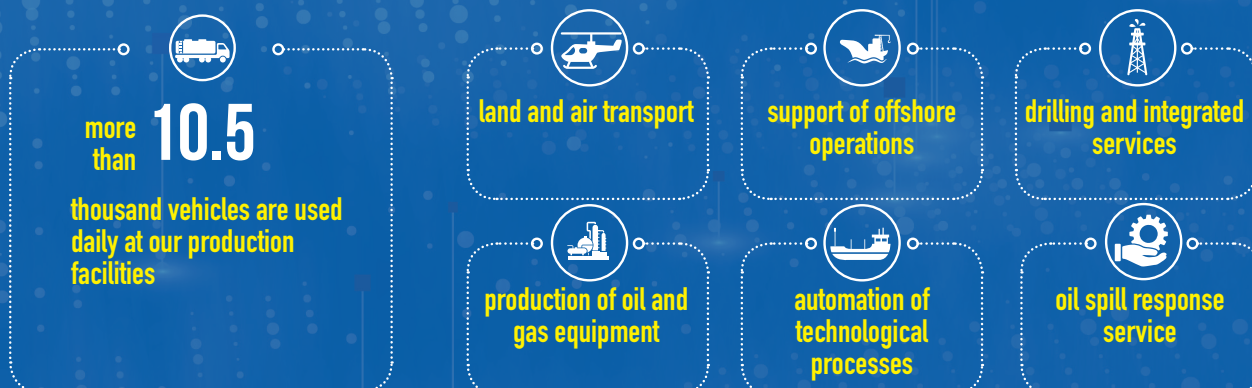
Refining and Marketing



Oil and Gas Transportation



Service





ABOUT OUR REPORT

PURPOSE OF THE SUSTAINABILITY REPORT

The concept that long-term profitability should be combined with social justice and environmental protection becomes more and more widespread. And these expectations will only grow and intensify as the need to move towards a truly sustainable economy will be more fully realized by those who finance companies and organizations, consumers and other stakeholders.

JSC NC "KazMunayGas" annually issues a "Sustainable Development Report" to describe the Company's activities in the field of sustainable development. Sustainability reporting is aimed at helping the Company and its stakeholders to interact effectively, to set goals consistently, to evaluate the results of the global work, and to manage the transformations aimed at making the interrelated activities more sustainable.

- ◆ Global Reporting Initiative Sustainability Reporting Standards
- ◆ Our commitment to the principles of the UN Global Compact and SDG.

GLOBAL REPORTING INITIATIVE

This Report has been prepared in accordance with the GRI Standards: Comprehensive option.

The KMG Sustainability Report has also been prepared by using the GRI G4 Oil and Gas Sector Disclosures. Based on the Materiality Disclosures Service, GRI Verifies that at the time of publication of the Report, the Disclosures 102-40 to 102-49 of GRI 102: General Disclosures were correctly located in both the Content Index and in the text of the final Report. The content of the report is determined by using the GRI Standards methodology and the principles for determining the content and quality of the report.

This Report is the second KMG Report in accordance with the GRI Standards, it presents indicators and achievements for 2017, starting from January 1 and ending on December 31. To ensure data comparison and comparability capabilities for some indicators, information is presented taking into account the dynamics of previous reporting periods and plans for the coming years. All KMG Sustainability Reports are available in Kazakh, Russian and English on the company's website: http://www.kmg.kz/rus/ustoichivoe_razvitie/reports/.

(GRI) 102-45
102-46
102-50
102-52
102-54

COMMUNICATION ON PROGRESS

The 2017 Sustainability Report also represents the annual Communication on Progress (hereinafter – CoP) within KMG membership in the United Nations Global Compact (hereinafter – UNGC) and reflects information on the Company’s assistance in achieving the global sustainable development goals. The Communication on Progress is an annual report, whereby the company informs stakeholders about the efforts made for UNGC principles integration. All Sustainability Reports that reflect KMG Communications on Progress are posted on the UNGC website and are available for the stakeholders through the link: <https://www.unglobalcompact.org/what-is-gc/participants/6810>.

Since 2018, KMG signed a “Participant” tier according to the UNGC classification. Participants actively engage with the UN Global Compact networks at the global level as well as at the state or regional level and interact with all stakeholders on sustainable development issues and the current UNGC agenda.

As a “Participant” of the UNGC, KMG supports 17 Global Sustainable Development Goals adopted by the UN General Assembly aimed at transforming our world. The Sustainable Development Report provides information on KMG’s commitment to 17 Global Sustainable Development Goals and demonstrates the Company’s achievements for their implementation.



COMMUNICATION ON PROGRESS

This is our **Communication on Progress** in implementing the principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

The Ten Principles of the UN Global Compact

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



SUSTAINABLE DEVELOPMENT PRINCIPLES

GRI 102-16

OPENNESS

We are open to meetings, discussions and dialogue.
We strive to build long-term cooperation with stakeholders, based on consideration of mutual interests, observance of rights and balance between the interests of the parties.



ACCOUNTABILITY

We are aware of our accountability for impact on the economy, the environment and society.

We realize our responsibility to shareholders and investors for the growth of long-term value and sustainable development in the long run.

We seek to minimize the negative impact of our activities on the environment and society by taking care of resources (including energy, raw materials, water), sequential reduction of emissions, waste, and the introduction of high-performance, energy and resource-saving technologies.

We pay taxes and other fees provided by law to the state budget.

We preserve and create jobs in the framework of our development strategy and opportunities.

We strive to promote the development of the locality in which we operate within our strategy and within the available financial possibilities.

We wisely and reasonably make decisions and take actions at every level, starting from the level of officials and finishing with employees.

We strive to introduce innovative technologies aimed at careful and responsible use of resources, increasing labor productivity.

Our products, goods and services must comply with the standards of health and consumer safety established by law and be of proper quality.

We value our customers.



TRANSPARENCY

Our decisions and actions should be clear and transparent for stakeholders.

We timely disclose information provided by law and our documents, taking into account the norms for the protection of confidential information.



ETHICAL BEHAVIOR

In the basis of our decisions and actions, our values, such as respect, honesty, openness, team spirit and trust, good faith and justice.



RESPECTFULNESS

We respect the rights and interests of interested parties that follow from the legislation, concluded contracts, or indirectly within the framework of business relations.



LEGITIMACY

Our decisions, actions and behavior are in accordance with the legislation of the Republic of Kazakhstan and decisions of the bodies of organizations.



RESPECT FOR HUMAN RIGHTS

We respect and promote the observance of human rights provided for by the Constitution of the Republic of Kazakhstan and international instruments, such as the Universal Declaration of Human Rights.

We are categorically not acceptable and prohibit the use of child labor.

Our employees are our main value and the main resource, the results of our activity and the value created for investors directly depend on the level of their professionalism and security.

We involve openly and transparently professional candidates from the labor market and develop our employees on the basis of the principle of meritocracy.

We ensure the safety and security of our employees.

We carry out health programs and provide social support to employees.

We create an effective system of employee motivation and development.

Develop corporate culture.



INTOLERANCE TO CORRUPTION

Corruption destroys the value that our organizations create for our shareholders, investors, other stakeholders and society as a whole.

We declare intolerance to corruption in any of its manifestations in cooperation with all stakeholders.

Officials and employees involved in corruption cases are subject to dismissal and prosecution in accordance with the procedure provided for by laws.

Internal control systems in the Fund and organizations should include, inter alia, measures aimed at preventing, preventing and detecting corruption offenses.

A dialogue with stakeholders to increase their awareness in the fight against corruption shall develop.



INADMISSIBILITY OF A CONFLICT OF INTEREST

Serious violations related to a conflict of interest may damage the reputation of the Company and undermine the credibility of shareholders and other stakeholders.

Personal interests of an official or an employee shall not affect the impartial performance of their official and functional duties.

In relations with partners, counting on the establishment and preservation of fiduciary relations, under which the parties are obliged to act with respect to each other possibly honestly, conscientiously, fairly and loyally, take measures to prevent, identify and eliminate a conflict of interests.



PERSONAL EXAMPLE

Each of us daily in his actions, behavior and decision-making contributes to the implementation of the principles of sustainable development.

Officials and employees occupying managerial positions should, by their personal example, motivate the implementation of the principles of sustainable development.



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CREATING SUSTAINABLE FUTURE

KazMunayGas is the leading national oil and gas company that owns a number of 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 oil refineries plants in Kazakhstan and owns oil refineries and petrochemical plants in Romania, as well as an extensive network of retail petroleum products in Kazakhstan and the Black Sea region.

The section details the business model of the Company and the value chain by sectors of activity, our mission, vision and strategy of the Company, our way of transformation through new projects:

- ◆ Implementation of a new operating model
- ◆ Implementation of process management
- ◆ Establishment of common service centers
- ◆ Introduction of category management of purchases

GRI 102-10
102-14
102-15
102-44

MESSAGE FROM THE CHAIRMAN OF THE MANAGEMENT BOARD



DEAR READERS

We are pleased to bring to your attention the consolidated 2017 Sustainable Development Report of JSC NC "KazMunayGas" Group of companies.

Following the strategic goals of our shareholder, the Samruk-Kazyna Fund, for achieving sustainable development, we strive to ensure that our activities are in compliance with the sustainable development principles, and to ensure the coherence of our economic, environmental and social goals.

KMG considers sustainable development as one of the strategic goals along with the growth of longterm value.

Implementation and integration of the sustainable development principles into the key business processes, operating activities and decision-making processes are among the Company's top priorities.

In 2017, we were focused on improving our financial sustainability through consistent and continuous transformation of our business model and operating activities. We continue the active implementation of the Transformation Program, and we are already getting visible positive results of the decisions made.

Throughout the holding structure, the work on optimizing business processes, simplifying the management system and improving the quality of work performed is in progress. The total economic benefit from the implemented Transformation Program since the start of the program is KZT 61.8 billion.

The most important achievement of this period is the development and implementation of a new target operating management model, which involves reducing the number of management levels from five to two. This will allow the Company to concentrate on direct operations management of production assets.

According to the new management model, in 2017, one of the largest subholdings was merged – KMG – Refining & Marketing. In 2018, further merger of other subholdings of the Company is planned. Production asset management will be carried out directly from KMG.

We strive to bring the non-core activities into the market environment and reduce duplication of functions, while separation of basic and auxiliary functions occurs with maximum preservation of jobs, social guarantees and support of adaptation of personnel are brought into external environment.

Working in the conditions of changes, the Company managed not to reduce its performance indicators for the reporting period in comparison with the last period. The volume of hydrocarbon production in 2017 was 23.4 MMt.

An important event for us was completion of modernization of the Pavlodar Petrochemical Refinery and the end of all mechanical works for installation of new equipment at the Atyrau Refinery. In the second half of 2018 the modernization of Shymkent Refinery is planned to be completed. Completion of the modernization of

the Kazakhstani refineries will allow assuring the RoK domestic market with oil products by the end of 2018. This will also create conditions for switching to automotive fuel output in compliance with the K4, K5 standards.

The highest priority for the Company has always been and still are the people. Being one of the largest employers of the country, we are striving for social stability and settlement of labor disputes and conflicts. In 2017, by agreement of the parties, a collective agreement of Oil Services Company LLP was signed for a period of 3 years.

Within the Job matching program, all interested applicants, both inside the company and outside it, were given an equal opportunity to apply for management positions in the central office of KMG in an open competition. This program will be continued.

We also seek to promote a culture of safety and health, involving all employees. The course for safe conduct of work performance both for Company employees and contractors has remained unchanged; we impose high requirements to safety measures and aim at minimal impact on the environment in the regions of operation.

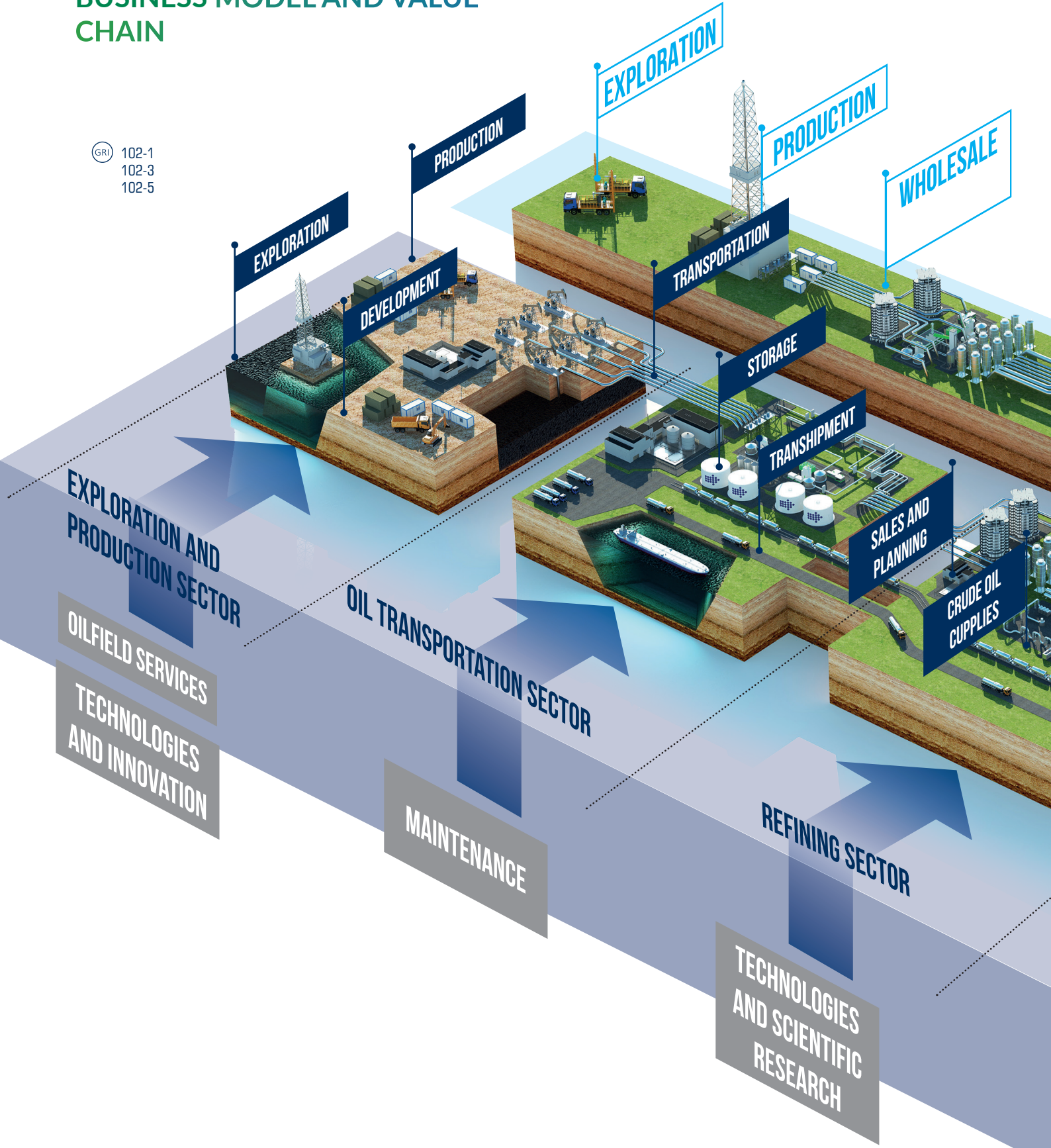
Being aware of the importance of our environmental impact, we aim at comprehensive disclosure of information about our results and achievements. So, taking part in the first environmental responsibility rating project for the oil and gas companies of Kazakhstan, we received recognition of our Company as a leader and environmentally responsible company from independent international organizations.

The last year became for us a year of EXPO-2017 international exhibition. The KMG Group of companies acted as one of the sponsors of the exhibition, and presented its own exposition within Astana EXPO-2017, providing information on its activities and development of new technologies in the Company.

Faithfully, Sauat Mynbayev

BUSINESS MODEL AND VALUE
CHAIN

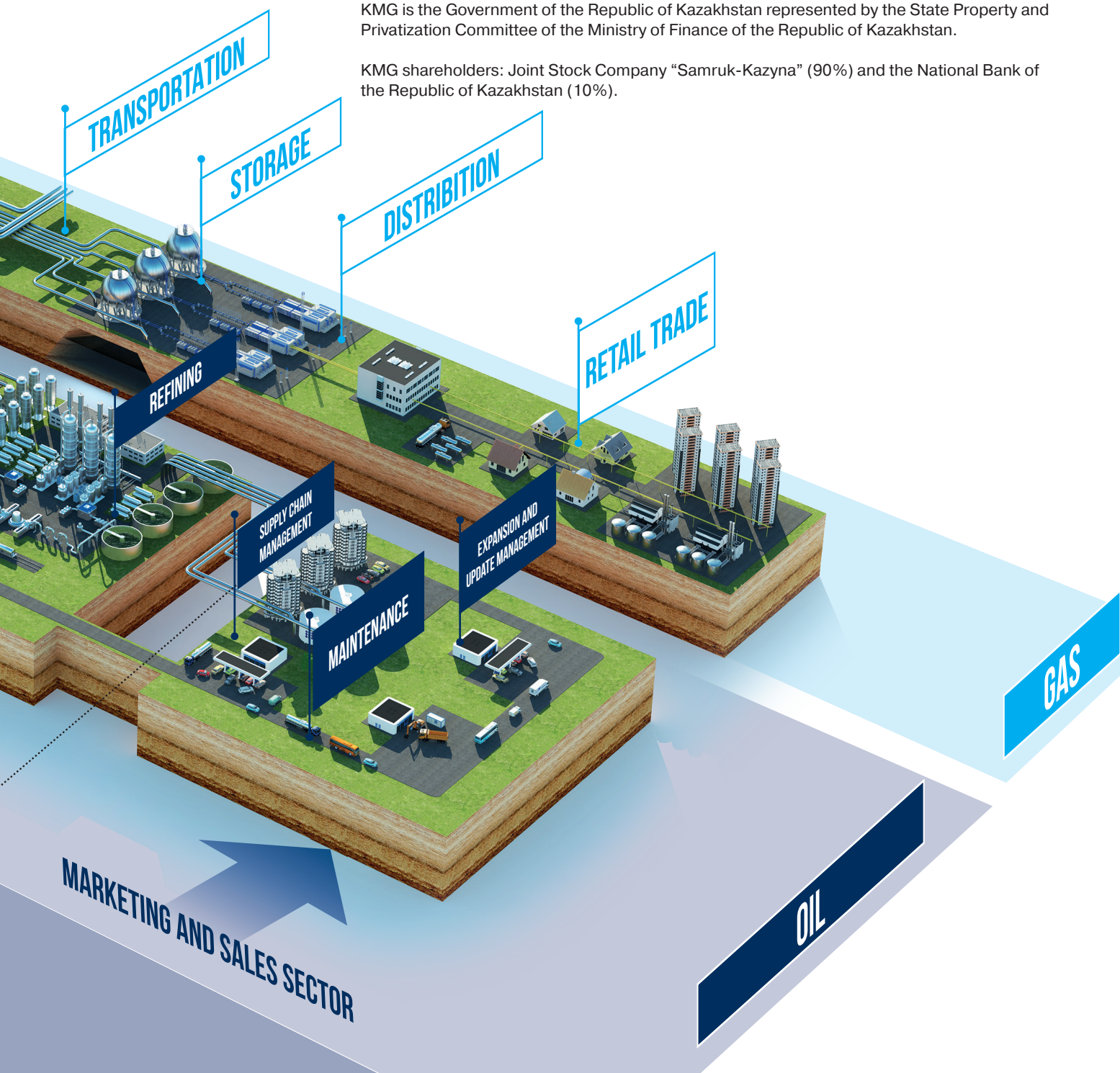
GRI 102-1
102-3
102-5



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, representing 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 represented by the State Property and Privatization Committee of the Ministry of Finance of the Republic of Kazakhstan.

KMG shareholders: Joint Stock Company “Samruk-Kazyna” (90%) and the National Bank of the Republic of Kazakhstan (10%).




EXPLORATION AND PRODUCTION SECTOR

(GRI) 102-2, 102-4, 102-6, 102-7, 102-8

Main Exploration Assets

Urikhtau Operating LLP	Satpayev Operating LLP	NGKTs LLP (Central Oil&Gas Company)	Caspi Meruerty Operating Company B.V.
Zhambyl Petroleum LLP	Issatay Operating LLP	N Operating Company LLP	
Bekturly Energy Operating LLP	Kurmangazy Petroleum LLP	Caspian Oil and Gas Company	
KMG-Ustyurt LLP	Ural Oil and Gas LLP	Karpovsky Severny LLP	

Production

KMG EP JSC	 ҚазМұнайГаз KazMunayGas	Kazakhoil Aktobe LLP	Tengizchevroil LLP
Kazgermunay LLP	Embamunaygas JSC	Kazakhturkmunay LLP	Karachaganak Petroleum Operating B.V.
PetroKazakhstan Inc.	Karazhanbasmunay JSC	Mangistaumunaygas JSC	North Caspian Operating Company N.V.
Ozenmunaygas JSC		KazMunayTeniz LLP	

Oilfield Services

Oil Services Company LLP	Oil Transport Corporation LLP	Oil Construction Company LLP	Mangistauenergomunay LLP	MunayTeleCom LLP
JSC TTWSM	KazGRF	JSC OMS	JSC KKS	KMG EP-Catering LLP
Argymak Trans Service LLP	KMG Drilling & Services	Tulpar Munay Service LLP	JSC WPTM	

Scientific Research and Technology

SRI TEP	CaspiMunayGas	KazNIPI (R&D)
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Oil reserves

247.8 MMT



Production assets:

1. Ozenmunaygas JSC (100%) – 5,480 Kt
2. Embamunaygas JSC (100%) – 2,840 Kt

Joint ventures:

3. PetroKazakhstan Inc. (33%) – 1,077 Kt
4. Karazhanbasmunay JSC (50%) – 1,071 Kt
5. Kazgermunay JV LLP (50%)-1,400 Kt

Exploration assets:

6. Ural Group Limited JSC (50%)
7. Karpovsky Severny LLP (100%)

KazMunayGas Exploration & Production JSC is a subsidiary of KMG, which in 2017 owned 58% of the total number of shares. KMG EP was established in March 2004 through the merger of Ozenmunaygas JSC and Embamunaygas JSC. The KMG EP's own assets, excluding acquisitions made in 2007–2011, of 41 fields. The largest of these is the Ozen field, which has been operating since 1965. In 2017, KMG EP planned to join to its parent company, the deal was scheduled for 2018.



Oil reserves

63 MMT



МАҢҒЫСТАУМУНАЙГАЗ
АКЦИОНЕРЛІК ҚОҒАМЫ

Mangistaumunaygas (50%) is one of the largest oil and gas producing enterprises in the Republic of Kazakhstan, and is currently developing 15 oil and gas fields with total initial reserves of 1,124.671 MMt (8,131 MMbbl).

Tengizchevroil LLP (TCO), Karachaganak Petroleum Operating B.V. (KPO) and North Caspian Operating Company N.V. (NCOC) are the largest non-operating assets of KMG.

OIL TRANSPORTATION SECTOR

GRI 102-2, 102-4, 102-6, 102-7, 102-8

KazTransOil JSC

MunaiTas

Kazakhstan – China Pipeline

Kazmortransflot

Batumi Oil Terminal

Batumi Sea Port

Petrotrans

CPC

Oil transportation systems are one of the main elements of Kazakhstan's economic and energy potential, as well as an instrument for integrating the state into the global economy.

NMSC Kazmortransflot LLP – the national sea carrier.
KMTF's assets include 8 tankers, 17 tug barges.

Subsidiaries:

- ◆ Kazmortransflot Ltd. – 100%
- ◆ Kazmortransflot UK Ltd – 100%
- ◆ Altai Shipping Ltd – 100%
- ◆ Alatau Shipping Ltd – 100%



KazTransOil JSC renders services for oil transportation to the domestic market, for export, and also transits oil.

The assets structure of the KazTransOil Group of companies:

- ◆ “MunaiTas” NWPC” JSC (Kazakhstan) – 51%
- ◆ Kazakhstan – China Pipeline LLP – 50%
- ◆ Batumi Oil Terminal Ltd. (Georgia) – 100%
- ◆ Batumi Sea Port Ltd. (Georgia) – 100%
- ◆ Petrotrans Limited (UAE, ADGM) – 100%
- ◆ Main Waterline LLP (Kazakhstan) – 100%

The total length of the pipelines is 5.4 thousand km.

To date, the main export routes of Kazakhstan oil are:

- ◆ Atyrau – Samara pipeline (KazTransOil JSC – 100%);
- ◆ Caspian Pipeline Consortium pipeline (JSC NC “KazMunayGas” – 20.75%);
- ◆ Atassu – Alashankou pipeline (KazTransOil JSC – 50%);
- ◆ Aktau sea terminal.

In 2017 oil transportation amounted to 65,489 Kt, including by pipeline – 58,538 Kt, (length of MN – 7,585.3 km), by marine fleet – 6,951 Kt.

Vessels of Kazmortransflot JSC are the most modern in the Caspian Sea and comply with all applicable international standards of navigation.

Export is carried out by pipeline transport by marine transportation from the Aktau Port in the Caspian Sea, from the ports of Batumi and Novorossiysk on the Black Sea, and also in the Mediterranean Sea.

Directions of transportation:

- ◆ Aktau – Makhachkala
- ◆ Aktau – Baku
- ◆ Black Sea
- ◆ Mediterranean Sea
- ◆ Turkmenbashi – Baku/Makhachkala
- ◆ Yuri Korchagin MTC – Baku

REFINING SECTOR

(GRI) 102-2, 102-4, 102-6, 102-7, 102-8

AR LLP

Kazakhstan's refining sector is represented by a number of large oil and gas refineries:

1. Atyrau Refinery (AR): refinery design capacity – 5.0 MMtpa, refining depth – 62.73%.
2. Shymkent Refinery (PetroKazakhstan Oil Products, PKOP): design capacity – 6.0 MMtpa, refining depth – 73.03%.
3. Pavlodar Petrochemical Plant (PPCP): the most technologically complicated oil refinery in Kazakhstan. Balanced capacity capacity – 5.1 MMtpa, refining depth – 76.08%. The plant is designed for refining oil of West Siberia.
4. CASPIBITUM: a plant for producing road bitumen of heavy Karazhanbas oil. The refinery design capacity is 1.0 MMtpa.

KazMunayGas Refining & Marketing JSC is a Kazakhstani leader in the field of refining and marketing of oil products, owning modernized oil refining assets. As part of KMG transformation, KazMunayGas Refining & Marketing JSC was merged with the structure of the KMG parent group in 2017.

PPCP LLP

PKOP LLP

CASPIBITUM LLP

There are 3 gas processing plants with a total refining capacity of 18.9 bcma in the republic:

1. Kazakh Gas Processing Plant (KazGPP) with a refining capacity of natural gas of 2.9 bcm.
2. Zhanazhol Gas Processing Plant (ZGPP) – 4 bcm.
3. Tengiz Gas Processing Plant (TGPP) – 12 bcm.

In addition, in accordance with the Agreement on Counter Deliveries of Gas Supplies between Gazprom, Uzbekneftegaz NHC and JSC NC “KazMunayGas” dated December 27, 2006, the gas of the Karachaganak field is refined at the Orenburg GPP.

In 2017, oil refining – 14,874 Kt, oil sales – 23,158 Kt, gas sales – 17,759 MMcm.

Key refining indicators in 2017:

- ◆ AR 4,724 Kt
- ◆ PKOP 2,343 Kt
- ◆ PPCP 4,747 Kt
- ◆ CASPIBITUM 359 Kt

MARKETING AND REALIZATION OF OIL PRODUCTS

(GRI) 102-2, 102-4, 102-6,
102-7, 102-8

KMG Onimderi LLP

KazMunayGas Onimderi LLP is a company for retail sale of fuels and lubricants. We sell a wide range of oil products, including high-quality gasoline, diesel fuel, aviation kerosene, heating oil, fuel oil, vacuum gasoil, coke, liquefied gas, sulfur and bitumen – both for export and domestic market of the RoK, wholesale and retail.

KMG AERO LLP

TH KazMunayGas A.G

To date, the retail network of “KazMunayGas” FFS is the largest in the RoK both in the number of FFSs and in terms of sales volumes.

In KMG there are 11 own oil bases.

No.	Type of oil product	Oil product wholesale volume, Kt	Market share in the RoK, %
1	Gasoline (AI-80, AI-92, AI-95, AI-98 retail sale)	409.29	14
2	Diesel fuel	726.43	14
3	Fuel oil	717.31	
4	Bitumen	18.76	
5	Liquefied gas	46.83	
6	Sulfur	1.55	
7	Pet coke	86.32	
8	Vacuum gasoil	327.2	
9	Jet fuel	9.78	
10	Other	3.65	

The main mission of KazMunayGas Onimderi JSC is to provide the RoK's domestic market with high-quality oil products and their sale through the extensive retail network of “KazMunayGas”.

Retail sales of oil products on the domestic market of Kazakhstan

343 FFSs under the brand of “KazMunayGas” (KazMunayGas Onimderi LLP), including

- ◆ 25 DODO FFSs;
- ◆ 176 COCO FFSs;
- ◆ 142 CODO FFSs.

In the assortment of the retail basket of KazMunayGas Onimderi LLP light oil products of AI-80, AI-92, AI-95, AI-98, DF gasoline brands prevail.

Large consumers by segments:

- ◆ national companies – 18%
- ◆ state bodies and institutions – 21%
- ◆ other legal entities – 55%
- ◆ individuals – 6%

The FFS retail network is territorially located in the following regions:

No.	Region	FFS number	Sales volumes of FFSs for 2017, in tons
1	Astana city	26	111,885.77
2	Pavlodar	13	52,095.97
3	Akmola	19	55,031.37
4	Kostanay	12	42,054.26
5	North Kazakhstan	20	52,394.09
6	Karaganda	44	112,563.02
7	East Kazakhstan	26	90,711.22
8	Almaty city	22	63,205.55
9	Almaty	34	82,786.11
10	Zhambyl	16	44,892.46
11	Kyzylorda	14	35,714.33
12	South Kazakhstan	18	26,896.00
13	Atyrau	24	65,933.43
14	Mangistau	20	79,025.24
15	Aktobe	21	74,105.46
16	West Kazakhstan	14	60,866.96
TOTAL		343	1,050,161.26

There are also 12 GFSs and 3 GFSs/FFSs in Mangistau Region, which supply consumers with refueling gas.

KMG International N.V.

Petromidia

Vega

Midia Maribe
Terminal

Dyneff SAS

KMG International N.V. is a foreign asset of KMG in Europe and owns one of the largest and most modern oil refineries in the Black Sea region – Petromidia Năvodari, as well as the Vega Ploiesti refinery and the only polymer producer.

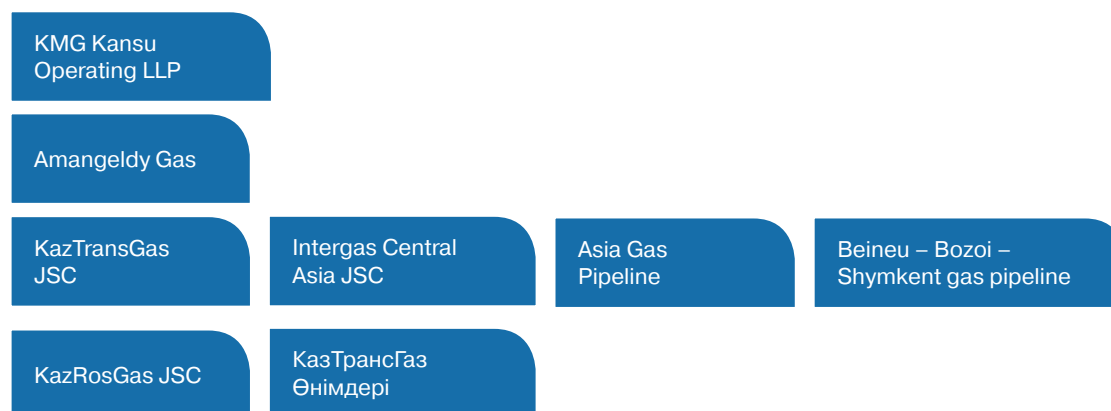
Outside of Kazakhstan, the KazMunayGas group has more than a thousand fuel sales points in Romania, Moldova, Bulgaria, Georgia, France and Spain. KMG International N.V. is a strategic enterprise for oil refining, marketing of oil and oil products in Romania and the countries of the Black Sea and Mediterranean basins.

The network of gas stations of the KMG International group under the Rompetrol brand has more than 1,000 points of sale, of which 600 are company owned filling stations.

The subsidiary KMG Trading, is a single operator that exports crude oil from the company's resources to the parent company of KMG, as well as trading operations in international markets.

EXPLORATION, PRODUCTION, TRANSPORTATION AND SALE OF GAS

(GRI) 102-2, 102-4, 102-6, 102-7, 102-8



The management of the KazTransGas Group of companies has an extensive infrastructure for transporting sales gas through trunk gas pipelines and gas distribution networks, which provides domestic transit of sales gas to more than seven million domestic consumers. Today, gas is delivered to many parts of the country, supplying villages and large cities, and gas provides jobs for Kazakh industrial and manufacturing enterprises.

The gas transportation infrastructure of the Republic of Kazakhstan for gas transit consists of the following trunk gas pipelines:

- ◆ Central Asia – Center – length – about 4,151 km, capacity – 47.2 bcmpa;
- ◆ Bukhara –Ural – length – about 1,575 km, capacity – 8.5 bcmpa;
- ◆ Orenburg – Novopskov and Soyuz TGP – length – 760 km, capacity – 16 bcmpa and 24.4 bcmpa;
- ◆ Kazakhstan – China – length – 3,917 km, part of the Central Asia – China trunk gas pipeline, operating capacity – 50 bcmpa with further expansion to 65 bcmpa;
- ◆ Okarem – Beyneu (with looping) – length – 546 km, capacity – 7.2 bcmpa;
- ◆ Beineu – Bozoy – Shymkent – length – 1,454 km, capacity – 10 bcmpa;
- ◆ Bukhara gas-bearing region – Tashkent – Bishkek – Almaty (BGR – TBA) – length – 1,637 km, capacity – 5.8 bcmpa.

Gas transportation othrough the main gas pipelines in 2017 amounted to 100.857 billion m³ (the length of the gas pipelines is 18,960 km).



KazTransGas JSC is the national operator in the field of gas production and supply, is the main gas-energy and gas transportation company of Kazakhstan.

The asset structure consists of 14 subsidiary dependent entities:

1. Intergas Central Asia JSC – 100%
2. Beineu – Shymkent Gas Pipeline LLP – 50%
3. Intergas Finance B.V. – 100%
4. KMG Kansu Operating LLP – 100%
5. Kaztransgas – Bishkek LLC – 100%
6. KazTransGas – Tbilisi LLC – 100%
7. Asia Gas Pipeline LLP – 50%
8. Asia Gas Pipeline – Khorgos LLP – 100%
9. KazTransGas Aimak JSC – 100%
10. KazRosGas LLP – 50%
11. KazTransGas Onimderi LLP – 100%
12. AvtoGas Almaty LLP – 50%
13. Astana Gas KMG JSC – 100%
14. Amangeldy Gas LLP – 100%

KEY ECONOMIC INDICATORS FOR 2017

GRI 102-2, 102-4, 102-6, 102-7, 102-8

Indicator Name	UoM	2017 Actual
PRODUCTION INDICATORS		
Oil and gas condensate production	Kt	23,362
Gas production	Kt	7,997
Oil transportation	Kt	65,489
Oil turnover	MMt*km	48,360
Gas transportation	MMcm	100,857
Volume of goods transport works for gas transportation	bcm*km	47,652
Oil refining	Kt	16,879
FINANCIAL INDICATORS		
Income from operating activities	KZT bn	2,459
Cost	KZT bn	2,380
Net income (loss)	KZT bn	437
Capital expenditures	KZT bn	703

KMG Ratings in 2017:

Moody's	S & P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
A1	A+	A+
A2	A	A
Aa3	AA-	AA-
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Ba1	BB+	BB+
Ba2	BB	BB
Ba3	BB-	BB-
B1	b+	B+
B2	b	B
B3	b-	B-
Caa1	ccc+	CCC+
Caa2	ccc	CCC
Caa3	ccc-	CCC-

Following the results of 2017, KMG showed the following results results on the KPI main strategic indicators KPIs:

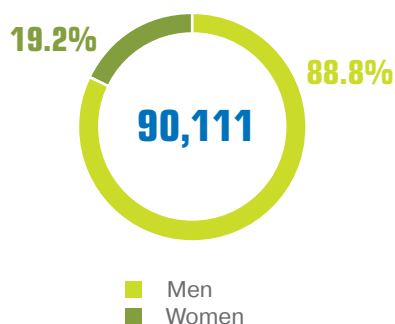
KPI	Unit of Measurement	2016 (actual)	2017 actual
Volume of oil and condensate production	MMt	22,6	23.4
Reserves (A+B+C1)	MMt	786	756
ROACE*	%	7.1	9.1

For reference: * ROACE = (profit for the year + compensation costs, adjusted for tax payments) / average capital employed excluding cash and bank deposits

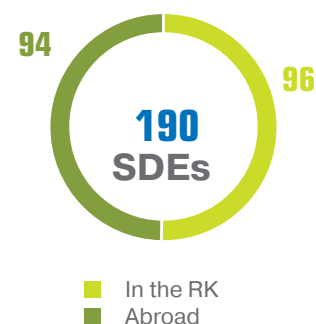
Volume of oil product sales in 2017, thousand ton



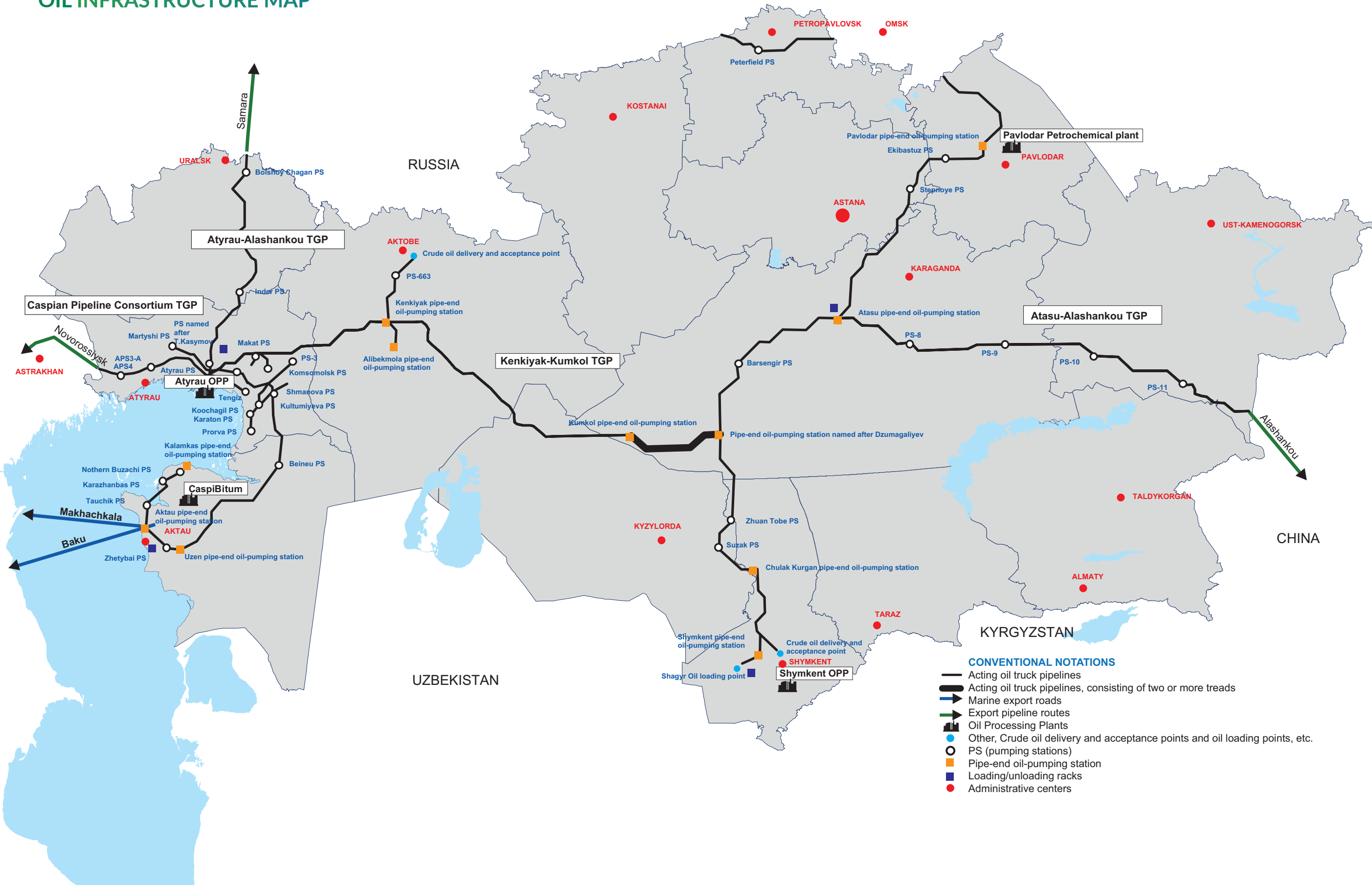
Number of employees



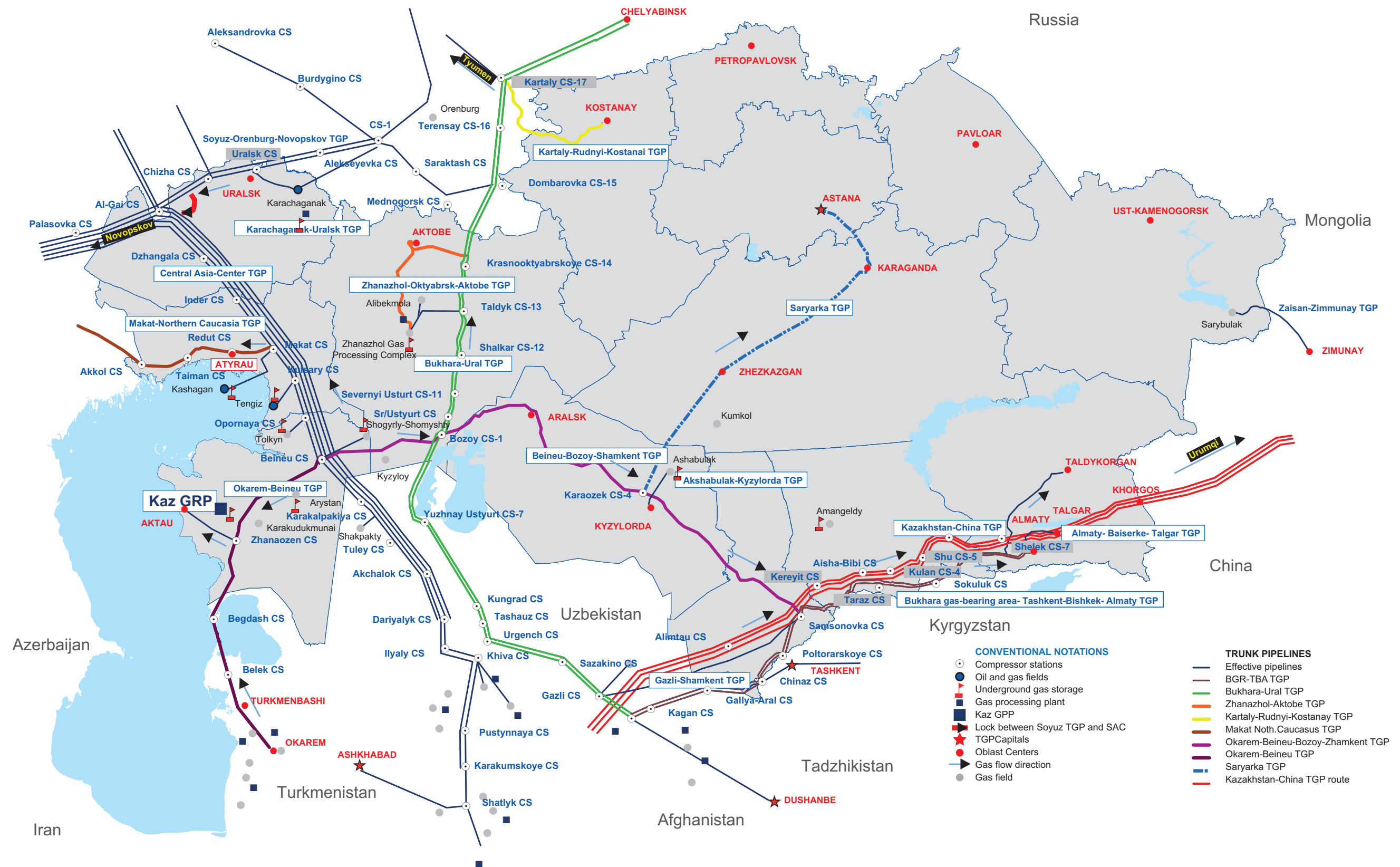
Total number of subdivisions



OIL INFRASTRUCTURE MAP



GAS INFRASTRUCTURE MAP



MISSION AND VISION

(GRI) 102-16, 102-15

KMG confirms its commitment in the direction of development and achievement of the shareholders' goals: increasing long-term value of assets and assisting to modernization and diversification of the national economy of Kazakhstan.

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.

MISSION

Ensuring Maximizing maximization the of profits of for the Republic of Kazakhstan from participation in the development of the national petroleum industry.

STRATEGY

In 2018, the Fund has developed new Strategy for 2018–2028, with its mission to increase national wealth of the Republic of Kazakhstan and long-term sustainability for future generations. In this regards, KMG will update its Development Strategy by the end of August, 2018 in line with the Fund's Development Strategy for 2018–2028.

TRANSFORMATION

(GRI) 102-8, 102-10



The modern world is throwing new challenges for the oil and gas industry and the participants of the rank, among which the main trends are:

- ◆ mature deposits;

- ◆ reduction of oil production;
- ◆ increase in operating costs;
- ◆ volatility in global crude oil prices.

Due to these market and economic changes, it becomes necessary to develop new approaches for successful competition in the world market. Competent and intelligent solutions for long-term competitiveness are required. Regular implementation of changes, improvement of production and other business processes is a matter of competitiveness of any company, and for the oil and gas industry to some extent is even the question of survival in conditions of low crude oil prices.

Understanding the need for changes from 2015, KazMunayGas continues the Transformation Program of Samruk-Kazyna JSC. Transformation is a systemic, interrelated process, affecting all areas

of the organization’s activities, aimed at optimizing business processes, increasing production efficiency, launching a process of continuous improvement and, ultimately, increasing the company’s value. The tasks of transformation are:

- increasing organizational potential;
- improving the managing processes;
- specialization of operating units in core activities;
- optimization of business processes;
- increasing the efficiency of all production units;
- personnel development and training;
- social satisfaction and prospects for future generations.

A portfolio of projects was formed in three key areas of transformation: improvement of KazMunayGas business processes, organizational and structural adjustments and changes in the company’s supporting business processes. As such, in the second direction, two projects were initiated: transition to a new operating model and creation of a shared service center for JSC “NC “KazMunayGas”. Initiatives have been formed along the production lines. They are called “Quick Wins” and represent specific projects with a fast payback, requiring the least cost. In general, the portfolio of transformation projects at the end of 2017 included:

- 32 “quick wins”, that is, specific, quick-payback projects that require the least costs;
- transition to a new operating model;
- 13 projects of systemic and methodological changes in management and supporting processes with implementation of automation, including creation

of shared service centers (SSC) for IT and financial functions;

At the heart of sustainable transformation, parallel work is being done in three key areas:

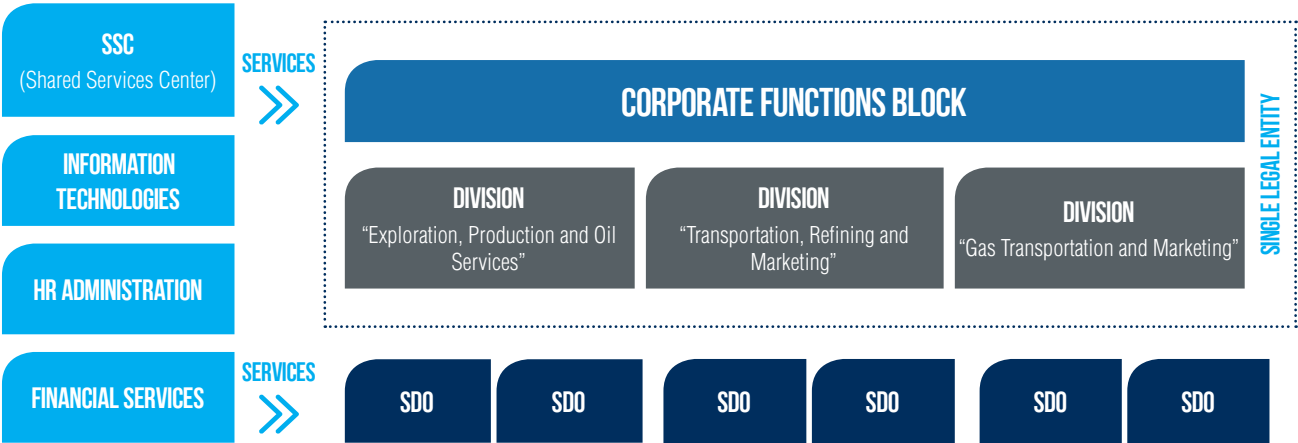
- processes – formation of a single, transparent, standardized process model describing the company’s activities;
- people – analysis and improvement of the skills and competencies of people needed to perform new tasks;
- technologies – definition of prerequisites for automation of business processes.

The following subsidiaries and dependent entities of KMG are included in the transformation perimeter: KazMunayGas Exploration & Production JSC, KazTransGas, and the Transportation, Refinery and Marketing Division.

The “quick wins” in production in 2017 recorded successful results, such as:

- increase in production in Kazakhturkmunay LLP;
- implementation of a new model of MRO management in Embamunaygas JSC (EMG) and Mangistaumunaygas JSC;
- implementation of the “UAZ Digital Oil Field” concept in EMG;
- transition to the increased overhaul period at the refinery, including automation of the maintenance system;
- implementation of Lean 6 Sigma/Lean Productions Programs in the companies of the TRM division and others.

New operating model



In 2017, as part of implementation of the Transformation Program, implementation of the Project “Development of the target organizational structure of the Group of companies of JSC NC “KazMunayGas” and the plan of transition” was launched. The project is aimed at improving the Company’s efficiency by reducing management levels.

The perimeter of the project includes a corporate center and all business lines of the Company, including exploration and production, transportation of oil and gas, refining and marketing of oil and oil products, oilfield services. Within the Project, extensive diagnostics of corporate and production processes of the KMG Group of companies, analysis of the best world practices among the leading vertically integrated oil and gas companies were carried out. A value chain along the entire vertical structure of the Company’s business was modeled, the Target Operating Model of JSC NC “KazMunayGas” was developed, which was approved by the Company’s Board of Directors on June 29, 2017.

According to the new operating model, KMG transits from the holding management system to the active management of production assets. As a result, Management levels are reduced to two levels: at the first level – a single Corporate Center, at the second level – subsidiaries and dependent entities of the Company. The KMG Corporate Center forms a strategy, carries out planning and full innovative support, and its subsidiaries focus exclusively on implementation of production plans.

The developed Transition Plan assumes the implementation of a whole set of measures for the gradual transformation of the company from the current management model (“as is”) to the target model (“to be”). Expected results are the following:

- ◆ simplified legal structure (without subholdings);
- ◆ direct influence on production activities;
- ◆ centralization of support processes, conclusion of routine operations in the Shared Service Center;
- ◆ centralized management of financial reserves and investments of the Group;
- ◆ centralized management of a margin across all of the value-added chain and realization of products of the KMG Group.

Within the Plan at the initial stage in 2017 the liquidation of the sub-holding of KazMunayGas Refining and Marketing JSC, which became a part of the Corporate Center in the form of the oil “Transportation, Refinery and Marketing” (TRM) Division, was successfully completed, the blocks of the corporate center of KMG “Exploration and Production” and “Oilfield Services” in the “Exploration, Production and Oilfield Services” Division.

In the future, in order to increase efficiency and rapidness of decision-making in the company, abolishment of duplicative functions and simplification of procedures, the main sub-holdings of KMG in the form of divisions will be gradually introduced into the Corporate Center – JSC “KazMunayGas Exploration and Production”, JSC “KazTransOil” JSC “KazTransGas”, and “KazMunayTeniz”.

Building and improving the business processes

In addition to the foregoing, within the Project, in order to improve the management system, systematic and methodological activities were undertaken aimed at further automating and implementing the process approach in the Company on the basis of the ARIS platform within the “Transformation of Core Business Functions and ERP Implementation” Project.

Thus, the description and detailing to the third level of core corporate and production business processes was completed, the modeling of processes in ARIS with decomposition of processes up to fourth level (the level of performers) is carried out.

The results of the Project will allow to provide methodological support for the forecast of the target number, the formation of a typical organizational structure for SDEs, the unloading of the Rules and Regulations for each business process separately and business functions in general, to implement the system of risk analysis, dependencies and control procedures at key stages of the processes in each structural subdivision of the Company.

Great attention is also paid to the development of new skills and competences for the process approach and modeling in ARIS among the Company’s employees. The Department of Organizational and Sustainable Development, established in 2017, becomes a full Process Office, responsible for management of business processes architecture, management of organizational design and facilitation of continuous improvement of the Company’s business processes.

As a result of implementation of the Transformation Program for the period 2015–2017 actual net benefits amounted to KZT 61.8 billion.

In the period from 2018 to 2025 from the projects of the Transformation Program it is expected to receive net benefits in the amount of KZT 215 billion.

Shared Service Centers

In 2017, the shared service centers (SSC) of KMG for IT and HR (“HR Qyzmet”) officially started operating. In the SSC for IT, in the form of a separate legal entity, IT specialists from several KMG subsidiaries were removed to perform routine IT service operations. Currently, SSC for IT has already started servicing the corporate center of KMG, the TRM division, as well as Production and Drilling Technology Research & Development LLP in the “single window” mode based on service level agreements (SLA). In the current year, the replication of the operational model of the SSC for IT to the remaining subsidiaries of the TRM division begins.

“HR Qyzmet”, created on the basis of Samruk-Kazyna Corporate University (SKCU), is engaged in functions in the field of personnel management. Now the center serves 3.5 thousand employees of 9 companies of the Samruk-Kazyna group. Until the end of 2018, the coverage of the center, as planned, will be 28 thousand people.

Changes in the field of human resources management are aimed at solving the following problems:

- ◆ a sufficient number of specialists to achieve current and prospective business results;

- ◆ high level of involvement and social stability of employees;
- ◆ labor productivity at the level of the world’s leading oil and gas companies;
- ◆ professional personnel service, capable of effectively solving tasks with personnel in partnership with business customers;
- ◆ a transparent system for attracting, selecting and evaluating staff;
- ◆ efficient and quality management of administrative functions at minimal cost through automation and use of the Shared Service Center (SSC) for HR.

The work on implementation of this initiative continues with the preparation of the necessary methodology within the accompanying project of “Transformation of core business functions and ERP implementation.”

In general, for the KMG subsidiaries, establishment of the SSC has several benefits in terms of reducing the cost of maintaining these non-core support functions, improving the quality of service services, executing business processes according to uniform standards and methodologies, and increasing the availability of information necessary for prompt decision-making.

Category Procurement Management

As part of the work to improve the procurement system and implementation of category management in the past year, the methodological part was completed. The transition to practical activities began – establishment of a Competence Center for category management. Three key categories for KMG have already been developed: the drilling and production pipes, oil production pumps and transport. The company is tasked with implementing category management by 70% of the total volume of KMG purchases in 5 years.

The Competence Center has been tasked with reducing costs for the procurement function, reducing the timing of procurement and improving the quality of purchased goods, works and services. For this, it is necessary to develop and approve procurement category strategies in 39 categories.

For reference: the status of the “Creation of a competence center for category management” project / Department of category management and GWS provision of large projects:



- ◆ The Competence Center for KMG categorical management / the Department of category management and GWS provision of large projects was created – 16 people.
- ◆ Six Procurement Category Strategies were developed, approved and are being implemented.
- ◆ The economic effect of KZT 546 million was received from implementation of the Procurement Category Strategy under the “Purchase of motor transport services for a Group of companies in Astana” category.
- ◆ Participation in the development of Procurement Category Strategies in the “Cars and buses” category for JSC “Samruk-Kazyna”.



TASKS OF KMG FOR 2018

GRI 102-14

KMG's plans for 2018 include the implementation of the following strategic objectives and initiatives:

INCREASE IN RESERVES

- Striving to realize strategic goals, the company will continue to work to increase operational efficiency through the reorganization of business processes and implementation of new technologies. In particular, emphasis will be placed on improving the efficiency of geological and technical measures, increasing the interrepair period, oil refining depth increase, and increase the profitability of oil and gas transportation operations.

LABOR

- It is planned to develop a Methodology for calculating the estimated salary for construction of oil and gas facilities in the KMG Group of companies in the order of the state, as a state pricing standard.
- It is planned to sign collective agreements in MEM LLP, MTK, OTC and OSC.
- Implementation of programs for the early termination of labor contracts will be continued with the agreement of the parties with employees and on early retirement.

MODERNIZATION OF THE SHYMKENT REFINERY

- In the second half of 2018, completion of modernization of SR is planned, which will allow increasing the processing volume to 6.0 MMtpa and, accordingly, to increase the production of petroleum products.

GAS EXPORT TO CHINA

- In field of gas transportation and marketing, it is planned to launch compressor stations No.5 and No.7 of the Kazakhstan – China trunk gas pipeline in July and October 2018, the launch of the SCADA system of the Kazakhstan – China trunk gas pipeline in November 2018, start of construction of three compressor stations along the Beineu – Shymkent trunk gas pipeline to increase the capacity of the gas pipeline to 15 bcm of gas.

PRIVATIZATION OF ASSETS

- KMG will continue to sell non-core and service assets.



CORPORATE GOVERNANCE

We are aware of the importance of transparency in the structure of corporate governance and the structure of the organization for stakeholders. The next section of the report contains information on how we form the structure of supreme bodies of corporate governance in accordance with the goals, and how these goals are correlated with the economic, environmental and social impacts of the KMG group.

In the field of corporate governance, the following projects are being implemented:

- ◆ introduction of the corporate governance system
- ◆ introduction of a new model of risk management

MESSAGE FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS

GRI 102-7
102-14
102-10
102-15



THE MAIN RESULTS OF KMG IN 2017

2017 for the Group of companies JSC NC “KazMunayGas” was successful in all areas of activity. Our net profit for the year amounted to 519 billion, which is 44% higher than in the previous year. Payment of dividends for the previous year to our shareholders amounted to 41 billion tenge in favor of Samruk-Kazyna JSC and 4 billion tenge in favor of the National Bank of the Republic of Kazakhstan.

We note significant growth in all our key performance indicators compared to last year. Thus, oil and condensate production increased by 3%, gas production by 10%, oil transportation by main pipelines grew by 3%, with the accompanying overall increase in oil turnover by 12%, gas transportation by main pipelines grew by 15%, with total growth of gas transport by 6%. The total volume of oil refining by the Group of companies, taking into account the large-scale repairs carried out during the year at all three refineries, grew by 2%, which also reflects the growing effectiveness of the company’s measures and decisions.

We note the achievement of targets for the main criteria for financial stability: the Debt to EBITDA ratio of 3.57, and the EBITDA to interest expense ratio of 6.25 met our shareholders’ expectations. In 2017, the rating agency Moody’s changed the forecast of KMG Baa3 rating from “negative” to “stable”. Another rating agency Standard & Poor’s lowered the rating of NC KMG from “BB” to “BB-”, the outlook is stable.



PERSONAL EXAMPLE

Each of us daily in his/her actions, behavior and decision-making contributes to implementation of sustainable development principles.

Officials and employees in managerial positions should, by their personal example, motivate implementation of sustainable development principles.

THE MOST SIGNIFICANT EVENTS IN 2017

In 2017, the modernization and reconstruction of the Atyrau oil refinery and the Pavlodar petrochemical plant was completed within the framework of the State Program of Forced Industrial and Innovative Development of Kazakhstan for 2015–2019. At the Atyrau oil refinery, work began on the Deep Oil Refining Complex, and a new complex for the production of light petroleum products was put into operation at the Pavlodar Refinery.

At the Shymkent oil refinery, the first stage of the modernization and reconstruction project was completed and the first certified party of K6 and K5 ecological grades of gasoline was already received. The second phase of the Shymkent Refinery modernization project aimed at increasing the depth of processing and capacity is planned to be completed in 2018.

The Caspian Pipeline Consortium completed all works under the CPC Capacity Expansion Project to 53.7 million tons per year in Kazakhstan.

The productivity of the Kazakhstan – China and Beineu – Shymkent gas pipelines was increased to 52 and 10 billion m³ per year, respectively. In Kyzylorda oblast, a high-tech gas compressor station Karaozek was put into operation.

We continued our work in the framework of a comprehensive privatization plan for 2016–2020, and in the reporting period 100% of the shares of JSC Airline Eurasia-Air were successfully implemented by a private investor – Sky Logistics Service LLP.

In 2017, KMG and “KMG – processing and marketing” merged after the reorganization within the transformation program, implying a new organizational structure focused on operational asset management, instead of the previously used concept of portfolio investor management.

Work is under way to increase the capacity of oil transportation to China through the pipeline infrastructure of KTG from 7 million tons to 10 million tons per year, and the tariff system of services for transit and export transportation is gradually being improved. At the same time, a large-scale investment program is continuing, aimed at maintaining and developing the system of oil and gas main pipelines.

This is only a small part of the tremendous work done by our employees, but at the same time they are historic milestones in the development of KMG as a national oil and gas operator and we are proud to share this with our stakeholders.

THE COURSE OF SUSTAINABLE DEVELOPMENT

We are aware that the basis for sustainable development of KMG and our stakeholders is protection of the environment, human life and health; respect for human rights and social responsibility, prevention of corruption

and global partnership to justly meet the needs of present and future generations.

By the decision of Samruk-Kazyna JSC in 2017, the Reference Model for Sustainable Development was approved, which in the future will be adopted as the basis of our main project in this direction – the development of a unified integrated management system for sustainable development, which will balance the economic, social and ecological components.

Since 2016, we have entered into the UN Global Compact and are taking consistent steps to ensure compliance with the universal Principles for the protection of human rights, labor relations, environmental protection and anti-corruption. We are also making efforts to implement 17 Global Sustainable Development Goals, which include such global priorities as poverty reduction, gender equality, combating climate change and partnership for sustainable development. Now is the time when the world needs a strong and united voice to protect our most important priorities and values for future generations, and KMG supports positive changes towards the world we want to see. This Sustainability Report is also our Report on the progress made for 2017 within the framework of KMG membership in the UN Global Compact.

KMG is the largest oil and gas enterprise and an exporter of raw materials, and has a significant impact on the economic well-being of Kazakhstan. We work in constantly changing market conditions both in the regional perspective and at the world level. The main factors affecting the Company's performance in 2017 are fluctuations in prices for crude oil and refined products and preliminary sales of crude oil by the Company, the impact of changes in the exchange rate, changes in tariffs for oil and gas transportation services, and changes in taxation.

All these factors help organizations to increase their financial sustainability by consistently and continuously transforming their business model, operations, revaluation of values and increasing their ability to adapt to the constantly changing market conditions. We continue our well-considered and thought-out steps for transformation, and we are already getting visible positive results of the decisions taken. So, everywhere in the holding structure work on optimization of business processes, simplification of a control system and improvement of quality of carried out works proceed. We strive to bring non-core activities into the market environment and reduce duplicative functions, while the separation of basic and auxiliary functions takes place with maximum preservation of jobs, social guarantees and support for the adaptation of personnel being outsourced to the external environment. All our efforts are focused on the constant course of sustainable development and increasing the long-term value of the company.

**Faithfully,
Christopher Walton**

The corporate governance system in KMG ensures proper management and control of activities, and aims at increasing long-term value and sustainable development.

CORPORATE GOVERNANCE

GRI 102-18, 102-22

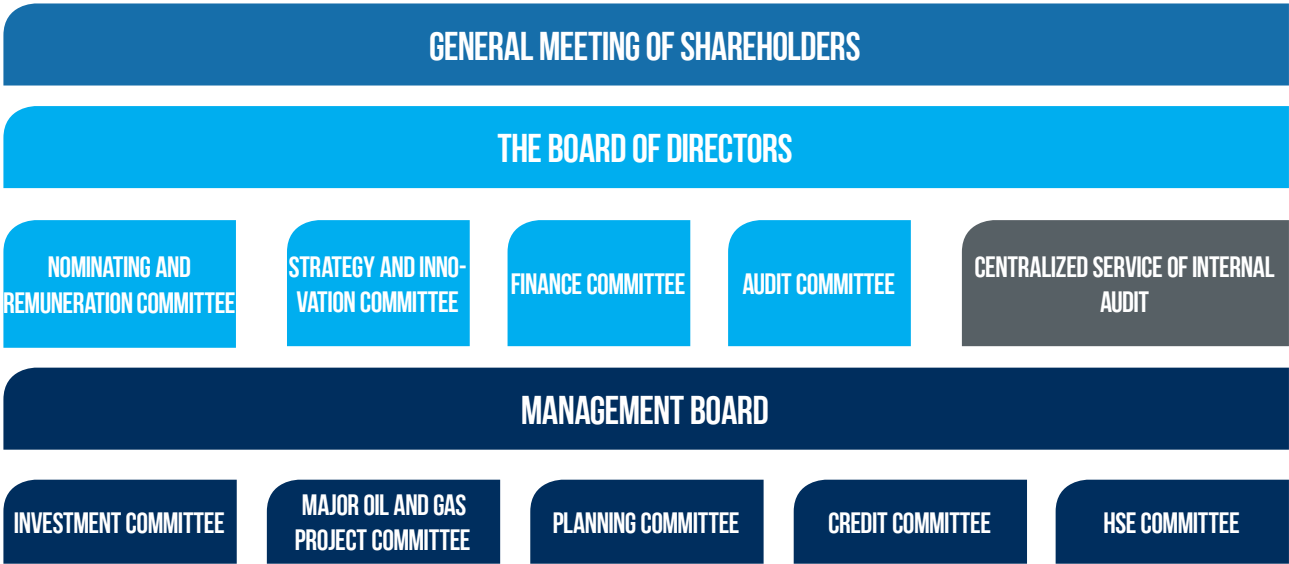


Strengthen the means of implementation and revitalize the global partnership for sustainable development.



CORPORATE GOVERNANCE STRUCTURE IN KMG

GRI 102-18



Consulting stakeholders on economic, environmental and social topics

GRI 102-21

In KMG, there are various ways of communication, which allow to properly build a dialogue with stakeholders and the company, and in the prescribed manner to bring their content to KMG BoD. Thus, discussion of problem issues with a shareholder is carried out within the framework of the meetings of the Board of Directors and its Committees through representatives of the shareholder who are members of the BoD and its relevant committees. In addition, members of the Board regularly meet with potential investors in the road show. In addition, the BoD carries out communications with stakeholders through the organization of such work through structures directly subordinate to the BoD – the Corporate Secretary, the

Ombudsman, the Internal Audit Service, the Compliance Service. On a monthly basis, information on sustainable development is included in the report of the Chairman of the Board.

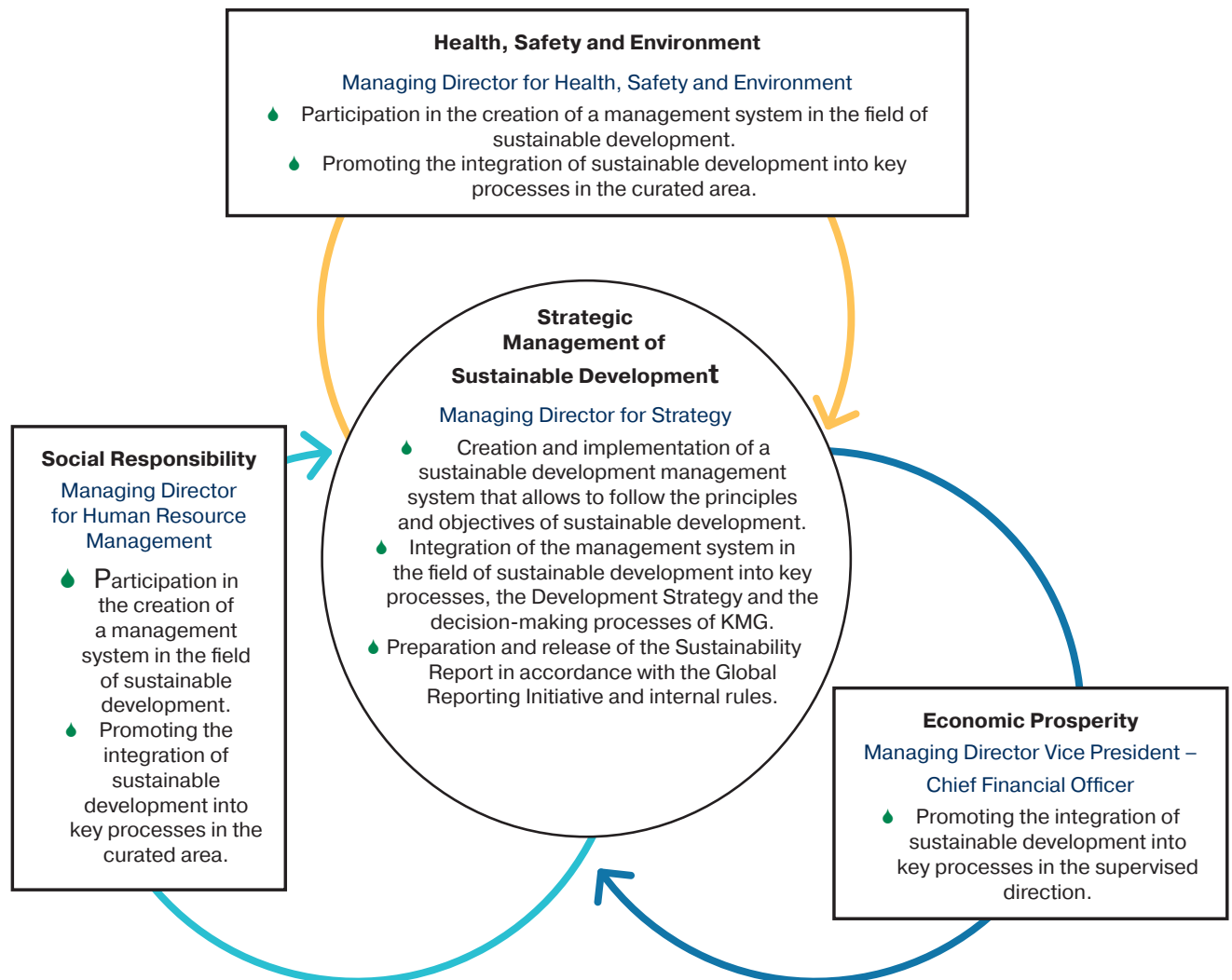
Receipt of feedback is carried out by discussing problem issues at meetings of the Board and its Committees, meetings of the Chairman and members of the BoD with the CS, Ombudsman, IAS and Compliance.

Executive level responsibility for economic, environmental and social topics GRI 102-20, 102-34

Responsibility for solving economic, environmental and social problems is assigned to the respective heads of the blocks for strategy, finance, human resources management and labor and environment protection, which in turn report to the Chairman of the KMG Management Board. The issues are submitted for consideration to the members of the Management Board, Committees of the Board of

Directors and the Board of Directors on a regular basis in accordance with plans and schedules for consideration.

Responsibility for sustainable development in KMG is distributed in the following order:



(GRI) 102-21, 102-22, 102-23, 102-24, 102-26, 102-27, 102-29

Composition of the Board of Directors and its committees in 2017

The composition of the Board of Directors is elected by the decision of the person owning all voting shares of KMG (hereinafter – the Shareholder) (minutes of the Board of JSC Samruk-Kazyna No. 20/17 dated June 29, 2017) for a period of 3 years. Later, by decision of the shareholder, a change was made to KMG SD (the minutes of the Board of JSC Samruk-Kazyna No. 23/17 of October 4, 2017), and as of December 31, 2017, the composition of KMG BoD includes:



Walton Christopher John – Independent Director, Chairman of the BoD

Chris Walton is the Interim Chairman of the Institute of Directors, Audit Committee of the United Kingdom's Submarine Delivery Agency and a non-executive member of the UK Royal Navy's Naval Shipbuilding Strategy Client Board. He is a Fellow of the Royal Aeronautical Society (UK) and a Fellow of the Institute of Directors.



Whyte Stephen James – Independent Director

Whyte Stephen James is a Chairman of Genel Energy plc. and Independent Director of the Board of Directors of Echo Energy.



Baymuratov Yerlan Urazgeldiyevich – Independent Director

Baymuratov Yerlan Urazgeldiyevich simultaneously holds the position of Chairman of the Board of Directors of Bayan Sulu JSC and is a member of the Supervisory Board of Samruk-Kazyna Invest LLP.



Karabalin Uzakbay Suleymenovich – representative of the shareholder (JSC Samruk-Kazyna)

Karabalin Uzakbay Suleymenovich has more than 20 years of experience in the oil and gas industry, including as President of KMG, as Minister of Oil and Gas of the Republic of Kazakhstan and as Deputy Minister of Energy of the Republic of Kazakhstan. Currently he is Deputy Chairman of the Board of the Association "KAZENERGY" and a member of the Board of Directors (independent director) of JSC "KING".



Baljeet Kaur Grewal – representative of the shareholder (JSC Samruk-Kazyna), Managing Director for Strategy and Portfolio Investment at Samruk-Kazyna -member of the Management Board of Samruk-Kazyna JSC

Before this, she was Advisor and Finance Specialist at the Asian Development Bank, where she advised on national economic policy and sovereign funds. Prior to this, Ms. Grewal was Managing Director and Vice Chairman of the Investment Advisory arm of Kuwait Finance House. She was formerly the Head of Investment Banking at Maybank Group, Malaysia. Ms. Grewal also held senior positions at ABN AMRO Bank and Deutsche Bank, London. Ms. Grewal holds a degree in Economics (1st Class) and an Executive MBA from the University of Cambridge.



Ilkevičius Adamas Olegas – representative of the shareholder (JSC Samruk-Kazyna), Managing Director for Asset Transformation and Optimization – Member of the Management Board of JSC Samruk-Kazyna

Ilkevičius Adamas Olegas has experience working in senior positions in such companies as Hi-Tech-HP, Siemens and IBM, Eurasian Natural Resources Corporation PLC (ENRC BTS).



Mynbayev Sauat Mukhametbayevich – Chairman of the Board of JSC NC “KazMunayGas”

Mynbayev Sauat Mukhametbayevich has significant work experience, including on managerial positions in the central state bodies of the Republic of Kazakhstan, including positions of the Minister of Finance of the Republic of Kazakhstan, the Minister of Agriculture of the Republic of Kazakhstan, the first head of the Kazakhstan Development Bank CJSC, Caspian Industrial and Financial Group LLP, Deputy Prime Minister of the Republic of Kazakhstan, Minister of Industry and Trade of the Republic of Kazakhstan, Minister of Energy and Mineral Resources of the Republic of Kazakhstan, the Minister of Oil and Gas of the Republic of Kazakhstan.

Thus, KMG BoD and its committees ensure the balance of skills, experience and knowledge ensuring independent, objective and effective decisions in the interests of KMG and taking into account the fair treatment of all shareholders and the principles of sustainable development. The structure of the KMG BoD is one woman Grewal Baljeet Kaur. By the time of publication of the present Report, the composition of the Board of Directors of KMG have changed, Ilkevičius Adamas Olegas left, and Philip John Dayer joined the KMG Board of Directors.

CORPORATE GOVERNANCE IN SUBSIDIARIES

Note: Information on SDEs whose shares (participatory interests) are owned directly or indirectly by KMG are prepared by analyzing the existing corporate governance system in KMG group companies that significantly affect KMG's activities. These companies are represented both in the organizational and legal form of the joint-stock company (AO) and limited partnership (LLP). The list of the main SDEs included in the perimeter of the analysis: KazMunayGas EP JSC, KazTransGas JSC, KazTransOil JSC, AR LLP, PPCP LLP, PKOP LLP.

Delegation of authority

GRI 102-19

Delegation of powers from the head of the Executive Body to other employees of SDEs is usually carried out on the basis of an order on the distribution of duties or provisions

on the powers of the company's management (for internal use) and powers of attorney (representing the company's interests to third parties).

Responsibility of the executive power in SDEs for economic, environmental and social issues

GRI 102-20

In all SDEs that have entered the perimeter of the analysis, there are separate management positions, whose competence includes making decisions on economic,

environmental and social issues (usually the level of deputy heads of the executive body). These officials are directly subordinate to the first head of the executive body.

Interaction in SDEs on economic, ecological and social directions of development

GRI 102-21

Among the SDEs that have entered the perimeter of the analysis, the procedure for consultations on economic, environmental and social issues between stakeholders and the supreme body of corporate governance is available at KazTransOil JSC. In order to identify and select stakeholders in the company, an analysis of the internal and external environment is conducted on an annual basis.

Thus, the relationship between the company and individuals whose interests are affected by the company's activities, as well as having or considering that they have legitimate requirements for certain aspects of the company's activities are analyzed. Based on the results of the analysis, the list of stakeholder groups of the Company is reviewed and updated. Powers for consultations are not delegated.

GRI 102-29, 103-2, 103-3

KMG is developing an action plan for sustainable development in the framework of improving the corporate governance system on an annual basis. In addition to monitoring the activities of the Company in implementing measures for the three components of sustainable development, KMG is committed to:

— conducting open and transparent activities, taking into account respect for human rights;

— development and implementation at the corporate level of the KPIs for sustainable development;

— respect for the interests of stakeholders through regular meetings;

— involvement of youth councils with the aim of their active participation in the promotion of sustainable development in the KMG Group of companies;

— intolerance to corruption and violations of corporate ethics;

— continuous improvement of the competence of managers and employees in the field of sustainable development;

— introduction of environmentally friendly and energy-saving technologies throughout the entire production cycle;

— preparation of the company's annual report on sustainable development in line with the requirements of the GRI Standards.

KPI System for Sustainable Development

GRI 102-29, 102-31, 102-20, 103-2, 103-3

In order to promote the principles of sustainable development, the Board of Directors has a decisive responsibility for promoting the principles of sustainable development. BoD of KMG:

- ◆ Controls implementation of the Company's Strategy based on analysis of short-term and long-term efficiency.
- ◆ Determines the importance of sustainable development principles for the Company and ensures their effective communication to all stakeholders.
- ◆ Actively reviews the principles of corporate governance, social issues and ecology enshrined in the Code when forming the Company's strategy, business plan and investment strategy.
- ◆ Ensures a clear link between sustainable development activities and the Company's strategic goals.
- ◆ Conducts analysis and approves key principles for sustainable development in the Company and its subsidiaries.

- ◆ Monitors the Company's performance in the field of sustainable development by establishing appropriate efficiency and monitoring the achievement of targets.
- ◆ Monitors implementation of the sustainability program throughout the Group.

Our key performance indicator for the functional of sustainable development is the achievement of the following main criteria:

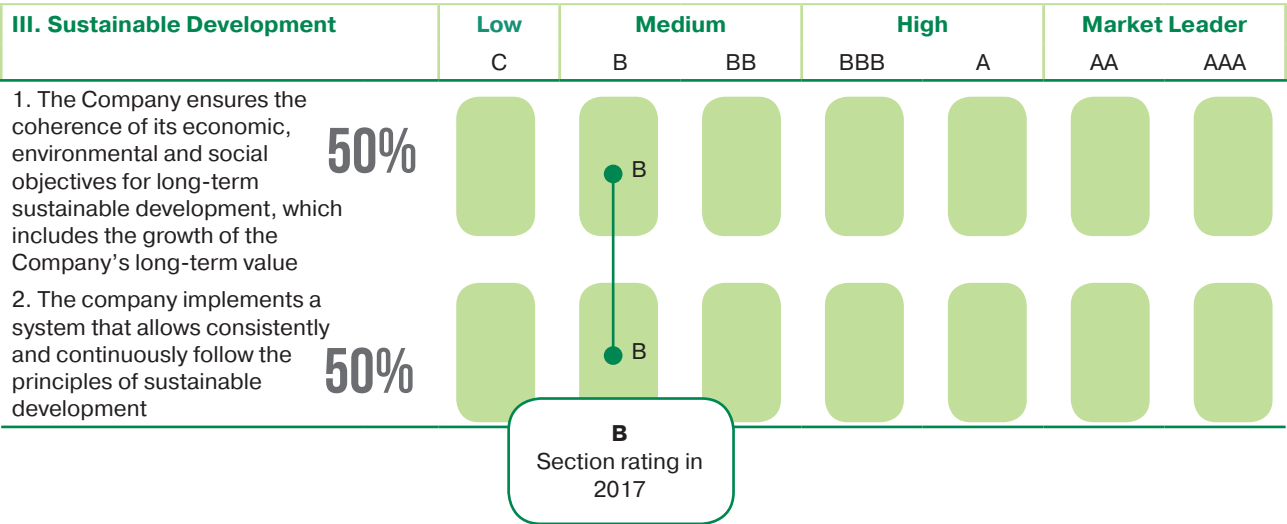
1. The Company ensures the consistency of its economic, environmental and social objectives for long-term sustainable development, which includes the growth of the Company's long-term value.
2. The Company implements a system that allows consistent and continuous follow the principles of sustainable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

Corporate Governance Diagnostics

GRI 102-28, 103-2, 103-3

In 2017, KMG conducted a diagnosis of corporate governance, which resulted in a rating for the “Sustainable Development” component. The corporate governance diagnostics for sustainable development in KMG included performance analysis in all relevant functional areas,

including risk management, planning, human resources management, investments, operations, safety and health, environmental protection, corporate security and procurement management.



Example from practice

GRI 102-21, 102-27, 102-28, 102-29

Diagnostics of Sustainable Development in KazMunayGas

On October 6, 2017, JSC NC “KazMunayGas”, chaired by Vice President for Strategy Assiya Narymanovna Syrgabekova, held a working seminar of JSC NC “KazMunayGas” (KMG) on the implementation of the Samruk-Kazyna (SK) Reference Model for Sustainable Development for Samruk-Kazyna JSC portfolio companies. More than 35 managers representing representatives of KMG structural units took part in the seminar, the goal of such an event was facilitating the implementation of sustainable development with the participation of independent consultants of PriceWaterhouseCoopers (PWC).

The concept of sustainable development in KMG, as a national oil and gas operator, in the economic and social well-being of Kazakhstan is unique, as is the Company's contribution to global initiatives for sustainable development. At the seminar, representatives of the

PWC spoke about the SK project on implementation of the reference model of sustainable development, as part of a comprehensive transformation program for the second half of 2017. Benchmarking of the world's best practices of leaders of the oil and gas sector on sustainable development management was held, as well as presentation of the vision and approach of the SK to sustainable development. Also within the framework of the facilitation session, the employees conducted a group exercise to identify the main aspects of sustainable development, their assessment of the importance for the KMG Group of companies and the formation of a matrix of significant aspects. Such a method is a collection of the collective opinion of internal stakeholders, whereas for an objective compilation of a complete matrix, it is also planned to conduct a survey on an external group of interested parties in the future.



SUSTAINABILITY MANAGEMENT

We are committed to the growth of long-term value, we are aware of the need for sustainable development of the Company and our responsibility to the interested parties.

The implementation and integration of the principles of sustainable development into key business processes, operational activities and decision-making processes are one of the Company's top priorities. The sustainable development management system will consist of the following processes:

- ♦ *Interaction with stakeholders*
- ♦ *Preparation of reports on sustainable development*
- ♦ *Enhancing the culture of sustainable development*

INTERVIEW OF THE MANAGING DIRECTOR FOR STRATEGY

(GRI) 102-20, 102-21, 102-26, 102-29, 102-31, 102-32



Why sustainable development function is important for KMG?

As a national company, KMG has always been a socially responsible organization. Solving the priority tasks to improve our efficiency, we have always paid great attention to the social aspects of our activities.

The principles of sustainable development are part of our mentality, as we live in the post-Soviet space. Therefore, the theme of sustainable development is not new for us.

In the face of the priority of achieving economic efficiency, KMG has always tried to maintain a balance of interests between financial gain, compliance with environmental legislation and the desire to meet the social needs of both its employees and the population in its regions of presence.

KMG today pays more attention to its stakeholders, providing an opportunity to speak out to all, to listen to all opinions to find the right balance of interests, suiting all parties.

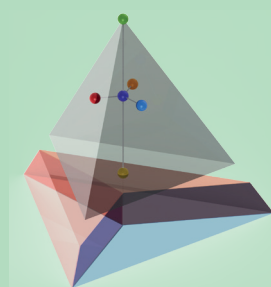
Commitment to the principles of sustainable development advances us on the development of new clean technologies to reduce the negative impact on the environment.

What is the current position of sustainable development in KazMunayGas?

Kazakhstan, along with 169 countries, signed the UN Global Compact (UNGC), thereby reaffirming commitment to global goals and principles of sustainable development. In its new Development Strategy, our shareholder, the Samruk-Kazyna Fund, has determined the sustainable development of one of the three strategic goals. KMG in the Corporate Governance Code identified sustainable development, along with the growth of long-term value, its strategic objective.

As a representative of the corporate sector in 2017, KMG joined UNGC, and the past year was a year of qualitatively new development for the functional of sustainable development of KMG. To ensure the equal development and implementation of values of sustainable development across the entire Group of companies of KMG, a new Department was created by the decision of the Board of Directors, whose list of functions includes a full range of issues on sustainable development.

If previously our main focus was to increase stakeholder awareness of activities through the release of the annual consolidated reporting on sustainable development, today we are focused on the development of a sustainable development management system. The new management system will ensure the coherence of KMG's economic, environmental and social goals, and consistently and continuously implement the principles of sustainable development in our operational and strategic activities.



- | | |
|---|--|
| ● Board of Directors / CSI | ● GP under HRM |
| ● GP under HSE | ● GP under E&F |
| ● GP under Strategy | ● Department for Organizational and Sustainable Development |

Please tell us about the essence of KMG transformation?

KMG is implementing a transformation program that focuses on three components: the transformation of people, the improvement of processes and the use of advanced technologies. At present, a lot of work is under way to achieve the goals set in these areas.

Since this report is devoted to sustainable development, I will focus on some aspects of the transformation process related to changes in management processes of KMG.

In 2017, in order to increase the efficiency of operations and better controllability of processes, a new operational model for managing a group of KMG companies was developed. According to this model, it is supposed to consolidate the main corporate functions at the level of the Corporate Center of KMG, routine processes for the Group of companies transfer the Shared Service Center (SSC), and concentrate only production processes in subsidiary dependent entities (SDEs). Implementation of the new operating model also implies a reduction in management levels, from existing, in some directions, 5 to the target 2 levels. Thus, the main production SDEs will be managed directly by KMG.

As part of this work, last year, KMG-Recycling Marketing was merged. To date (on the date of publication of the report), we can also say that in June 2018 we added another sub-holding – Exploration Production-KMG. Until the end of 2018, it is planned to complete the merger of KazTransGas sub-holding.

As part of the transition to the target operating model for each production and non-productive management function, a Business Process Catalog up to the 3rd level was developed with the distribution of responsibility areas between the Corporate Center, the newly created Business Units in Profile Areas, SSCs and SDEs.

What can you add in conclusion?

Sustainable development for KMG is a format for promoting the principles of social responsibility. In order to balance the interests of stakeholders, it is important for us to regularly interact with stakeholders on issues of sustainable development. In this regard, the Sustainable Development Report for today serves as the central communication channel through which we publicly disclose information about our influence and impact on the economy, the environment and society.

In order to determine the register of significant aspects of sustainable development in 2017, a questionnaire was conducted by key stakeholders of KMG. Along with KMG employees, representatives of state and local executive authorities, NGOs, partners and other categories of stakeholders of KMG participated in the survey for the first time. The analysis of the questionnaires formed the basis for the formation of a matrix of materiality, an understanding of those areas of our activity, on which we need to concentrate our efforts first.

Faithfully,
Assiya Syrgabekova

GRI 102-46, 102-47, 102-49, 102-50, 102-54, 102-56, 102-40, 102-42, 102-43

PREPARATION OF THE SUSTAINABILITY REPORT FOR 2017



ACCOUNTABILITY

We are aware of our accountability for impact on the economy, the environment and society.



TRANSPARENCY

Our decisions and actions should be clear and transparent for stakeholders.

The Department for Organizational and Sustainable Development is the responsible structural unit for the preparation of the Sustainability Report for 2017. To prepare this Report, the Department organized work on

stakeholder engagement with the responsible structural units of the corporate center of KMG and individual SDEs, collecting and consolidating the necessary information.

Interviewing stakeholders

To determine the content of the Report, an assessment of the material topics was carried out through questionnaires of interested parties to display information on the Group’s activities in field of sustainable development. The evaluation was carried out on the basis of the GRI Standards classification of topics and those identified significant in

the previous reporting periods. Also in the perimeter of the reporting key events of the reporting period, determined on the basis of the analysis of publications of authorized parties and the media were included. The list of involved internal and external stakeholders is given in the Annexes to this Report.

Identifying material aspects

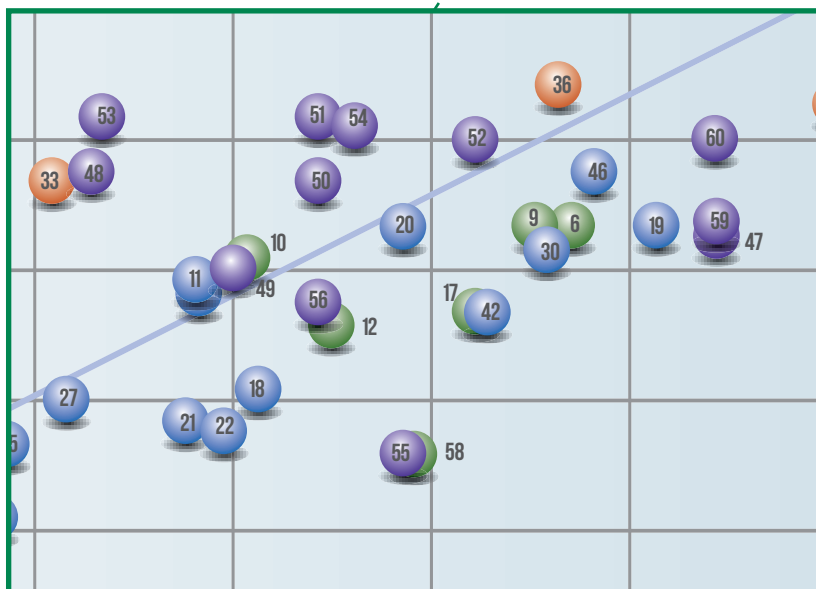
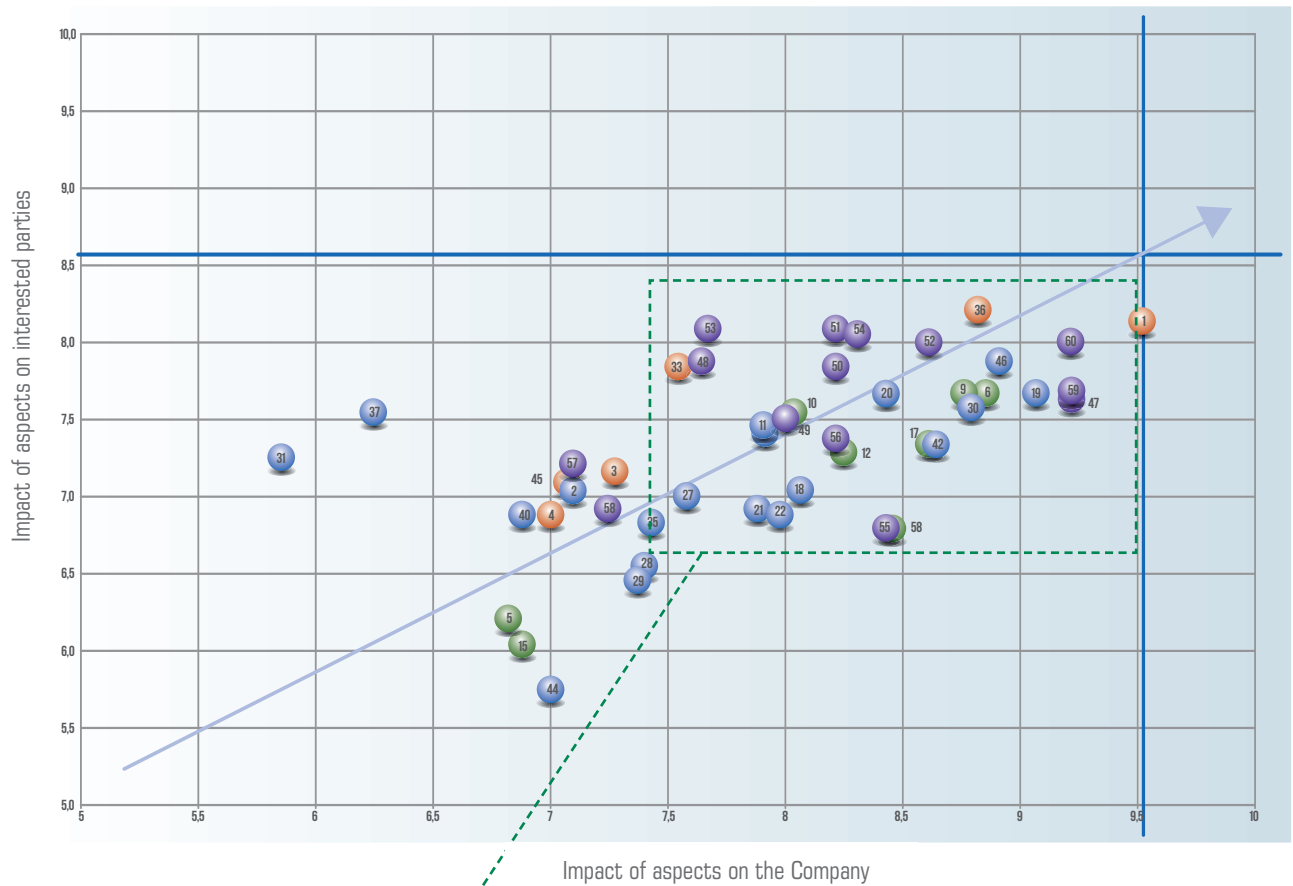
Capturing the opinions and ensuring the balance of our stakeholders’ interests is a high priority for us. To determine whether the contents of the Sustainable Development Report is consistent with the GRI principles, we have conducted a survey of a wide range of external stakeholders to evaluate the aspects of sustainable development. According the their responses we have formed a Materiality Matrix on sustainable development aspects.

Thus, we were able to identify the most important aspects for us and for stakeholders, and as a result, we identified the following trends:

- ◆ We are in a similar correlation of interests and priorities with our stakeholders, that is, the visualization of a linear correlation indicates that the interests of the parties are generally similar.

- ◆ The issues of environmental safety remain one of our main priorities.
- ◆ Stakeholders reflected a high concern for the issues of production integrity and dynamism, which was not seen in earlier reporting periods.
- ◆ KMG’s overall concern for sustainability issues generally exceeds the concern of stakeholders, which indicates a special responsibility employees of the company.

MATRIX OF SIGNIFICANT ASPECTS – 2017



In the Materiality Matrix, the color classification of the aspects is as follows:

- Economic
- Environmental
- Social
- Industrial oil and gas

Priority of aspects in 2017

#	Aspects of materiality above 10
1	Direct economic value generated and distributed
60	Development of innovation and operational efficiency
36	Anti-corruption
59	Asset Integrity and safety of production processes
47	Volume and classification of valuation and proved reserves and production
46	Conformity of products and services with regulatory requirements
19	Health and safety in the workplace
52	Drilling waste management
6	Energy
9	Emissions
30	Security practices
51	Volume of burned hydrocarbons and greenhouse gas leaks
54	Information on the composition of the products
20	Training and education
7	Water
42	Consumer health and safety
50	The volumes of associated water and their recovery
53	Spill Prevention and Emergency Preparedness
38	Obstacle to competition
48	Investments in renewable energy sources
10	Discharges and wastes
49	Monitoring of the impact on biodiversity in the regions of operation
26	Non-discrimination

17	Employment
56	Conflict resolution and litigation with the local population in the regions where the activity is carried out
12	Environmental compliance
55	Strategies and programs for interaction with the population in the regions where the activities are carried out
8	Biodiversity
18	Staff-management relations
#	Aspects of materiality above 8.5
21	Diversity and equal opportunities
32	Human rights assessment
27	Freedom of association and collective bargaining
3	Indirect economic impacts
57	Decommissioning of production facilities
2	Presence in the markets
45	Privacy of the consumer
58	Forced population resettlement
35	Local Communities
40	Evaluation of suppliers' impact on society
4	Procurement practices
28	Risk of child labor
29	Risk of using forced and compulsory labor
37	Government policy
#	Aspects of materiality above 7.5
31	Rights of indigenous minorities
5	Use of materials
15	Environmental assessment of suppliers
44	Marketing Communications

Formation of the Sustainability Report

With a purpose to for a consolidated Report, a number of information requests about company's impact on the economy, environment and society were sent across the Corporate Center and Subsidiary and Dependent Organizations.

After receiving the information, the Department drafted the Report, which was then agreed in the final version with all the responsible stakeholders of the KMG Corporate Center in accordance with the internal regulations. The report was approved by the decision of the Board of KMG, and approved by the decision of the Board of Directors of KMG.

The Sustainable Development Report for 2017 was not verified by independent auditor. The correctness of the data included in the Report is provided by existing systems of accounting and information collection and KMG's internal control procedures.

The stakeholders involved in the survey were determined taking into account the criteria of independence of the interviewed party, the interests of the Group, the degree of influence and awareness that were determined on the basis of the engagement practice. Thus, the content of


the Report is formed in accordance with the identified expectations of the parties concerned.

More than 10 explanatory seminars and meetings for various structural divisions of KMG were held by the responsible division subject to methodology, structure and content of information requests. Thus, clarification was carried out for all involved departments of the corporate center of KMG, responsible for corporate governance, communication and engagement, human resources management, procurement management, budgeting, accounting, labor and environmental protection, security,

strategy, investment management, asset management and other.

The range of issues included in the reporting perimeter also widened. This sustainability report is the result of the collection and consolidation of information across the entire KMG group on more than 160 aspects in accordance with the GRI Standards methodology and the main themes raised by stakeholders during the reporting period. The information was compiled for the entire KMG group, including its units located outside of Kazakhstan.

Reporting Boundaries, Indicators, Notes

 102-45, 102-46, 102-47, 102-48, 102-49, 102-50, 102-51, 102-52, 102-53, 102-54, 102-55, 102-56

The boundaries of this Sustainability Report are covered by all subsidiaries and affiliated organizations of KMG, the share of KMG in which during the reporting period was 50% or more. This report does not provide information on large non-operating assets – TCO, KPO and NCOC.

Some sections provide information on KMG International, the share of which in 2017 was 100%. Some of KMG's subsidiaries and affiliates issue a separate Sustainability Report, including KMG International. The last Sustainable Development Report was launched in 2017.

Notes to the Sustainability Report

The list of companies of the KMG Group, whose results are reflected in the Sustainability Report, is formed in accordance with the principles of including companies in the consolidated financial statements under IFRS "Consolidated financial statements". In this report, a number of financial, economic and operational performance indicators are determined in accordance with the principles of IFRS. In the text of the Report, the

amount of individual data may differ slightly from the presented data of the Consolidated Financial Statements on financial and economic activities due to round-offs or other management considerations in order to improve the format and style of the Report. In such cases, the data of the relevant financial statements, which are freely available via the link on the KMG website, are correct.

Enhancing the Culture of Sustainable Development

 102-27, 102-29, 102-42, 102-43

The practice of reporting in the field of sustainable development requires extensive interaction on informing stakeholders about the report, advising on the definition of materiality and collecting information and feedback to the report.

In 2017, a number of training events were held, including a certified training for heads of structural units on GRI Standards with the participation of the invited trainer of

the Swiss consulting company Schwery Consulting. So, based on the results of the two-day training for managers, more than 20 employees received training in determining the materiality and interaction, and 8 employees of various structural subdivisions of KMG received GRI Certificate of Attendance.

Example from practice



Executive training in the field of sustainable development

On November 16–17, 2017, the corporate center of JSC NC “KazMunayGas” held a training for heads of structural divisions in the field of sustainable development. The two-day training included training in two international standards: GRI Standards and the AA1000Stakeholder Engagement Standard.

The Global Sustainability Standards Board (GSSB) is established as an independent operating entity under the auspices of GRI, the GSSB is formed of 15 members representing a range of expertise and multi-stakeholder perspectives on sustainability reporting. KazMunayGas, as a national oil and gas operator, launches the Sustainability Report since 2015, the Report reflect the impact of the company’s activities in the context of economic, social development and environmental protection. Stakeholder management in accordance with AA1000SES, accounting and balancing of their interests is one of the key priorities of KazMunayGas on the way to increasing the sustainable development and long-term value of the company. In practical terms, the training is aimed at enriching the management tools of managers in identifying and analyzing risks and opportunities, approaches to managing relationships with different stakeholder groups, smart goal setting and assessing the effectiveness of achievements, and promoting global sustainable development initiatives. This practice

of reporting using GRI Standards and management of interaction with stakeholders in accordance with AA1000SES is the most popular among public companies that place their shares on world stock exchanges and is in great demand among potential investors, non-governmental organizations, public movements, mass media and simple citizens.

Training was conducted with the participation of the certified GRI Standards and AA1000SES trainer, head of Swiss company Schwery Consulting – Rolf Schweri, PhD, who has unique experience and internationally recognized qualifications in this field, as well as an expert organization in the field of corporate sustainability and social responsibility in CSR Central Asia in the person of the head Aliya Kadrallyeva. The training program for top management was conducted on a special order from KazMunayGas and in this format was conducted for the first time in Kazakhstan. Thus, KazMunayGas enters a new level of corporate governance quality in the field of sustainable development, as the only company in Kazakhstan, which includes more than 20 certified specialists in sustainable development. As participants of the training noted, the constant increase of workers’ awareness is extremely important for the effective implementation of the values of sustainable development in the activities of the KazMunayGas group of companies.

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



The KMG Sustainability Report for 2016 won the nomination in best annual reports competition

December 8, 2017, the ceremony of awarding laureates and nominees of the VII Annual Annual Report Competition, organized by the RAEX Rating Agency (Expert RA Kazakhstan), was held. In 2017, within the framework of the contest, 105 annual reports of Kazakhstan companies, including 41 financial organizations and 64 non-financial companies, were evaluated.

The Sustainability Report for JSC “NC “KazMunayGas” for 2016, prepared by the Department for Health, Safety and Environment, won prizes in three categories at once. The

Sustainability Report of KMG this year not only became one of the Best reports on Corporate Social Responsibility, but for the first time went beyond this nomination, taking also prizes as “Best Interactive Report” and “Best Design of the Annual Report”. Members of the jury and experts of the rating agency noted many advantages of this report – qualitative disclosure of information, professional presentation of material, as well as unique creative design.

Earlier, on November 24, 2017, the Sustainability Report of JSC “NC “KazMunayGas” was already recognized as

the winner in the annual reports contest in Russia in the nomination of “Design and Polygraphy” among non-financial reports according to the version of Expert RA, the

largest rating agency of RAEX Russia. <http://raexpert.kz/press-center/news/show/342/>



ETHICS AND INTEGRITY

(GRI) 102-16, 102-17, 102-33, 102-43



Achieve gender equality and empower all women and girls.



Reduce inequality within and among countries.



ETHICAL BEHAVIOR

In the basis of our decisions and actions, there are our values such as respect, honesty, openness, team spirit and trust, good faith and justice.

Values, principles, standards and norms of behavior

The Code of Business Ethics of JSC NC “KazMunayGas” is a set of important rules of business conduct of the Company and its employees, ethical norms of internal corporate relations, social responsibility of each employee.

The Code defines corporate values, the adherence to which demonstrates the commitment of KMG and its employees to basic ethical principles that determine business conduct and form the reputation of the Company, its competitiveness and effectiveness.

The Code is an important part of KMG’s corporate governance system; it contributes to the Company’s economic growth in the long term.

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.

KMG accepts and follows the provisions of this Code in its relations with KMG shareholders, employees, subsidiaries and affiliates, government bodies, partners, other interested parties, both in making business decisions and in everyday situations.

The Code is an open document and freely distributed to business partners of KMG and any other interested persons.

Norms of employees' behavior

KMG strives to create a working environment in which there will be no place for manifestation of any forms of harassment on any grounds protected by the legislation

of the Republic of Kazakhstan. Any behavior that creates a frightening offensive atmosphere or hostility in the work environment, and also interferes with the performance of KMG employees, is unacceptable.

Mechanisms for seeking advice on unethical behavior

(GRI) 102-17, 102-33, 102-43



INADMISSIBILITY OF A CONFLICT OF INTEREST

Serious violations related to a conflict of interest may damage the Company's reputation and undermine the credibility of shareholders and other interested parties.

Personal interests of an official or an employee should not affect the impartial performance of their official and functional duties.

In relations with partners, counting on the establishment and preservation of fiduciary relations, under which the parties are obliged to act with respect to each other as honestly, conscientiously, fairly and loyally, take measures to prevent, identify and eliminate a conflict of interests.

Along with the Company's structural divisions, which are responsible for identifying, preventing and preventing possible violations of business conduct and business ethics (such as human resources management, corporate security, hotline, etc.), KMG also has a corporate Ombudsman for settlement of disputed/conflict situations.

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 conflictologist, 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 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 and prevent any kind of disputes and conflicts in the organizations of the Group. The right of any person to appeal should not be violated. We have developed various mechanisms by 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;
- ◆ Employees and others – by phone 78-65-65, or via email of trust: doverie@kmg.kz (information can be submitted anonymously).

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

- ◆ Meetings of managers with labor collectives and the trade union;
- ◆ Reception of employees by the First Head for personal matters;
- ◆ Blog of the first leader;
- ◆ Boxes for the collection of offers.

Applications for non-compliance with the Code of Business Ethics are considered with mandatory participation of the Ombudsman on confidential terms.

Whenever any requests are received, the Group's management is informed. All received complaints and proposals are registered, the management decision on the results of consideration of the appeal is brought to the applicant.

STAKEHOLDER ENGAGEMENT

GRI 102-40, 102-41, 102-43, 102-44

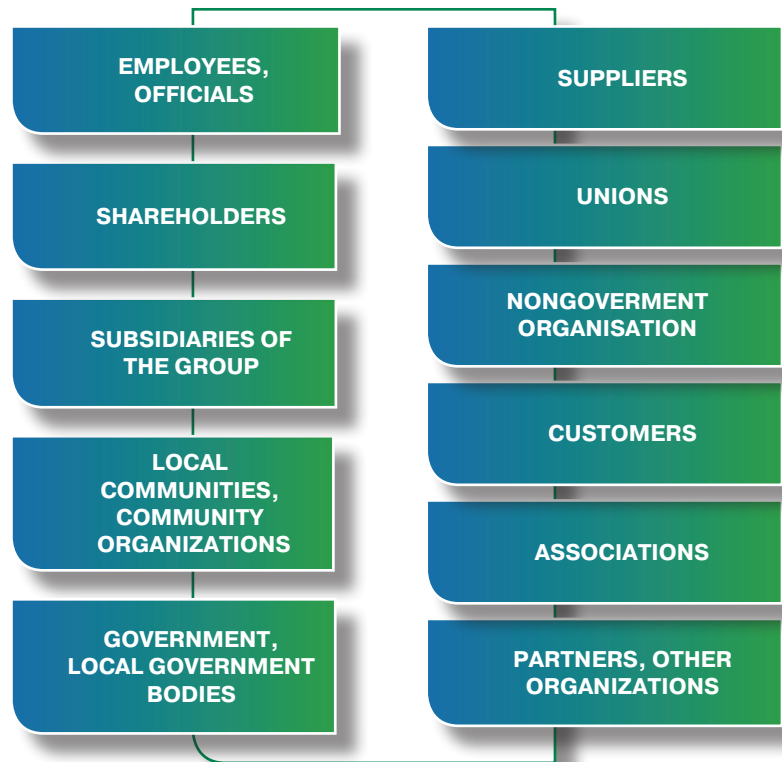


OPENNESS

We are open to meetings, discussions and dialogue. We strive to build long-term cooperation with stakeholders, based on taking into account mutual interests, observance of rights and balance between the interests of the parties.

JSC “NC “KazMunayGas” (hereinafter – 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.

Our key stakeholders are:



Methods of interaction with the Stakeholders include the following:

Interaction level	Interaction methods
Consultations: bilateral interaction; Stakeholders answer the questions of the Fund and organizations	Questionnaires; focus groups; meetings with stakeholders; public meetings; seminars; providing feedback through means of communication; advisory councils
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 (if applicable) participate in the management	Integration of issues of interaction with stakeholders in management, strategy and operations

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 (various) perspectives.

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

Key Areas of Interaction



Strengthen the means of implementation and revitalize the global partnership for sustainable development.



ACCOUNTABILITY

We realize our responsibility to shareholders and investors for the growth of long-term value and sustainable development in the long run.

IR / Investor Relations

Classification of stakeholders:

- ◆ Holders of bonds
- ◆ Investment banks
- ◆ Rating agencies
- ◆ Potential investors of KMG
- ◆ Kazakhstan Stock Exchange JSC
- ◆ Depositary 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.

In KMG, there are no procedures and principles for the selection of stakeholders in the investor community. 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 (investor's day, analyst's day, meetings at KMG office);
- ◆ 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, etc.

Interaction with investors

April 2017	Road show on the issue of Eurobonds worth USD 2.75 billion
June 2017	Conference call with investors on the results of financial and operational results for 1Q 2017
May 2017	Management meeting with a group of investors in the office of KMG (HSBC, Barclays, Bank of America Merrill Lynch, Renaissance Capital)
September 2017	Conference call with investors on the results of financial and operational results for 2Q 2017
November 2017	Road show with investors and bondholders (non-deal road-show) in London
December 2017	Conference call with investors on the results of financial and operational results for 3Q 2017

PR / Public Relations:

Classification of stakeholders:

- ◆ Kazakhstani and foreign media;
- ◆ The general public;
- ◆ Profile structural subdivisions of KMG SDEs and state-owned companies of the RoK.

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, infosessions, etc. with the invitation of the media
- ◆ Organization of briefings and interviews with the Company's management.

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. Based on the foregoing, there are no principles for the selection of interested parties for interaction with government bodies in GR-activities.

GR department mainly interacts with production units, as well as directly with SDEs, if necessary.

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 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.

Key topics in 2017

GRI 102-44, 102-15

The following events became significant for KazMunayGas in 2017:

1. Signing an historic purchase and sale agreement between KazTransGas JSC and PetroChina International Company Limited on the delivery of 5 bcm of Kazakhstani gas. Since October 16 this year KazTransGas began exporting domestic gas to China.
2. Completion of modernization of Pavlodar Petrochemical Plant. Plans for completion of the reconstruction and modernization of the Atyrau Refinery.
3. Completion of the first stage of modernization of Shymkent Refinery, which allowed to ensure the quality of automobile fuels in accordance with K4 and K5 emission standards.
4. Transition to the implementation stage of the transformation program and the launch of the implementation of the new operating model of KMG, according to the new operating model of KMG, departs from the role of a strategic holding company that manages a multitude of subholdings through the boards of directors, and focuses on active operational management of production assets.
5. Realization of a major asset of JSC “Euro-Asia Air” Airlines”. On November 8, 2017, within the framework of the Comprehensive Privatization Plan for 2016–2020, 100% of the airline’s shares were sold to KMG in a competitive environment. The buyer, Sky Logistics Service LLP, was defined within the framework of an open two-stage tender. The amount of sales was KZT 11,850 million.
6. Signing of an agreement on transfer of the share of subsoil use rights in Isatai in the Caspian Sea between KMG and the Italian ENI. According to the contract for combined exploration and production, ENI receives 50%. The parties also signed an agreement on the basic conditions for the joint implementation of an industrial investment project in Kazakhstan. Both agreements constitute a package deal for the development of both the oil and gas industry and the industry of the Republic of Kazakhstan.
7. Putting into operation the “Gas drying unit” on the “Bozoi” underground gas storage. The Head of the State gave a start to the work of the new installation on December 6, 2017 (live) during the traditional teleconference dedicated to the Day of Industrialization in the country. The gas drying unit made it possible to transport natural gas taken from the Bozoy gas storage facility through the Bukhara – Ural and Beineu – Bozoi – Shymkent trunk gas pipelines to consumers in the Aktyubinsk Region and southern regions of Kazakhstan, thereby ensuring high-quality, uninterrupted gas supply during the heating season.
8. NMSC Kazmortransflot LLP in the third quarter completed the construction of two self-propelled barges and two tugs in the framework of participation in the Future Growth Project / Wellhead Pressure Management Project of Tengizchevroil LLP (hereinafter – TCO FGP/WPMP). The vessels will be used by NMSK Kazmortransflot LLP for transportation of modules and wiring of ships in the shipping channel of the Cargo Route in the area of the Port of Prorva, providing a significant contribution of Kazakh companies to the implementation of TCO FGP/WPMP.
9. Oil production at the Kashagan field. In 2017, the Kashagan field continued to stabilize and increase production levels with the main priority for safety, environmental protection and reliability of equipment. The wells of Islands A, D and EPC-3 are in operation. In mid-2017, two compressors for the re-injection of crude gas were put into operation, which allowed the planned increase in production levels to continue.
10. Four high-power, high-tech compressor stations on transnational gas pipelines Kazakhstan – China and Beineu – Bozoy – Shymkent were launched in record time. For the first time, the most powerful AGRS-300 in Kazakhstan was launched in Aktobe. The gas distribution station is capable of supplying half of the region with gas.
11. JSC “KazTransGas” became the most important and technologically most powerful operator of gas flows in Central and Central Asia.
12. For the first time, the regional center of the Almaty region has been gasified in the city of Taldykorgan and the cities of Kapshagai, Esik, Zharkent and Shelek. Over 30 most remote settlements of Almaty, South-Kazakhstan, Kostanay, Aktobe and Mangistau Regions have been gasified.



13. The city of Baikonyr is connected to the gas supply system of Kazakhstan.
14. One of the most significant events of 2017 for the country was the holding of the international exhibition EXPO-2017. The KMG Group of companies acted as one of the main sponsors of the exhibition, and also presented to its visitors its own exposition within the framework of EXPO-2017, providing information on the company's activity as a vertically integrated national oil and gas operator, on KMG's contribution to the economy and society of Kazakhstan, general about the prospects for the development of the oil and gas industry in the changing world of new energy.
15. A new AFFS was put into operation in the city of Aktobe, which is capable of providing all the vehicles of the city with compressed gas (compressed methane).
16. JSC "KazTransGas" for the first time successfully placed Eurobonds with a maturity of 10 years, with a total value of \$ 750 million with listing on the Irish Stock Exchange "ISE" and Kazakhstan Stock Exchange "KASE". The bids of investors exceeded the offer at times.
17. For the first time, KazTransGas JSC and the Public Association "Republican Council of Gas Industry Veterans" together with the "Nur Otan" party organized large-scale outreach public receptions in the regions on gasification issues. Solved problematic issues of more than a thousand Kazakhstanians.
18. One of the longest and most powerful gas pipelines in the world – the main route "Central Asia – Center" celebrated its 50th anniversary.
19. By agreement of the parties (employer, trade union), the Collective Agreement of Oil Services Company LLP was signed with a term of 3 years.
20. Completion of construction and putting into commission of production and technical facilities of 400 units of mechanical transport at Kalamkas field.
21. Acquisition of a production base for 100 vehicles and special equipment at the Kalamkas field.
22. Acquisition of the shift camp for 200 places at the Kalamkas field.
23. On March 16, 2017 KMG Drilling & Services LLP has signed the Certificate of delivery and preliminary acceptance of the Self-lifting floating drilling rig "Satti" (hereinafter – SLFDR).

INITIATIVES AND MEMBERSHIPS

GRI 102-12



Strengthen the means of implementation and revitalize the global partnership for sustainable development.



<http://www.worldbank.org/>

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. In March 2017, KMG submitted its first financial statements under the 2016 initiative.



<https://www.globalmethane.org/>

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 control 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.



<https://www.worldwildlife.org/>



<http://creoncapital.lu/>



<https://www.unenvironment.org/>

Environmental responsibility rating for oil and gas companies in Kazakhstan

JSC NC “KazMunayGas” took part in the project organized by the World Wildlife Fund (WWF) of Russia and the group “CREON” with the support of the Ministry of Energy of the Republic of Kazakhstan and in partnership with the United Nations Environment Program in Central Asia (UNEP-CA), CREON Capital and the National Rating Agency, to develop the first environmental responsibility rating for oil and gas companies in Kazakhstan.

The Group of companies JSC NC “KazMunayGas” headed the first

environmental rating of oil and gas companies in Kazakhstan. KazMunayGas strives for continuous improvement of the environmental management system, actively interacts with all interested parties on environmental issues, and publishes information on all environmental aspects on an annual basis, thereby constantly reaffirming its commitment to openness and responsibility to the community.



<https://expo2017astana.com/>

Astana-EXPO 2017

Within the international exhibition “Astana Expo 2017”, JSC NC “KazMunayGas” presented its exposition on the selected area of 370 sq.m in the corporate pavilion. The exposition reveals information on the activities of the vertically integrated national oil and gas operator, on the company’s contribution to the economy and society of Kazakhstan, as well as on the prospects for the development of the oil and gas industry that are part of the exhibition “Energy of the Future”.

The Youth Rally Forum was also held where, in a discussion format, KMG promotes innovation and technological development and a vision of the trends in the oil and gas and energy industries among young workers and youth in Kazakhstan.



<https://www.iso.org/ru/home.html>

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 with a significant level of energy consumption are certified to ISO 50001.

In 2017 all the group companies successfully passed supervisory audits that confirmed the compliance of the existing integrated management systems with the requirements of international standards.



<https://eiti.org/>

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.

Membership in associations

GRI 102-13



Strengthen the means of implementation and revitalize the global partnership for sustainable development.



National Chamber of Entrepreneurs of the RoK "Atameken"

On November 10, 2017 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, and other.



<http://www.kazenergy.com/ru/>

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.

August 11, 2017 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, etc.



COMMUNICATION ON

<https://www.unglobalcompact.org/>

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.



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



<http://www.iaot.eu/>

International Petroleum Transportation Association (IPTA)

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.



АССОЦИАЦИЯ
НАЛОГОПЛАТЕЛЬЩИКОВ
КАЗАХСТАНА

<http://ank.kz/>

Association of Taxpayers of Kazakhstan



<http://smkz.kz/>

Union of Machine Builders of Kazakhstan

The main objectives of the Union: the formation in the interests of the Participants of the relevant organizational and legal infrastructure and the mechanisms for its functioning through the representative and executive bodies of the Republic of Kazakhstan;

formation of a coordinated strategy for the development of the machine-

building industry, including investing in joint projects, training and retraining of personnel;

uniting the efforts of the Participants to meet the needs of the economic sectors of the Republic of Kazakhstan in goods, works and services of machine building.

To promote its interests, ensure the mutually beneficial cooperation and increase local content in purchased goods, works and services, KMG is a member of the Association of Taxpayers of the Republic of Kazakhstan and Engineering Union of Kazakhstan.



<http://smkz.kz/>

Kazakhstan Welding Association "KazWeld"



Union of Energy Engineers of the Republic of Kazakhstan



<http://iriska.kz/>

National Association of Business "IRIS"



<http://shipowners.kz/>

Association of Marine Transport Entrepreneurs of the Republic of Kazakhstan



<https://www.iogp.org/>

IOGP International Association of Oil and Gas Producers

SC National Company KazMunaiGaz supports the vision and goals, as well as the initiatives of the International Association of Oil and Gas Producers (IOGP) in the field of improving labor protection, industrial safety and environmental protection (HSE) in the production.

Starting from 2014, KMG initiated and uses reporting in accordance with the requirements and standards of IOGP, conducts benchmarking with similar companies in the oil and gas sector to identify areas for improvement in health, safety, and environment, and to reduce the rates of accidents cases and industrial incidents. However, it became possible to become a full member of IOGP only from January 2018.



The issue of restoration of membership in the international association for oil spill response of Oil Spill Response Limited (OSRL) is under consideration.



In addition, in 2018 it is planned to update the memorandum between KMG and ROO "Kazakhstan Union of Lawyers".



ECONOMIC PROSPERITY

One of the Company's most important priorities is to strengthen its financial position through capital constraints and improve operating efficiency.

Within the framework of achieving the target functional in the economic block of KMG, the following projects are being implemented:

Transformation of the main business-functions and integration of ERP:

- ◆ Accounting
 - Tax accounting
 - Management accounting
 - Treasury and corporate finance
 - Supply management
 - Project management
- ◆ Introduction of a new model of investment portfolio management
- ◆ Introduction of a new model for the management of procurement activities
- ◆ Introduction of category purchase strategies

FINANCIAL SUSTAINABILITY STRATEGY

(GRI) 102-15, 102-10, 103-1, 103-2, 103-3

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.



KMG's Financial Stability

KMG strives to provide maximum benefits for Kazakhstan and contribute to the modernization of the country's economy diversification. The mission of the company is aimed at strengthening the financial position of the company among other priorities and goals.

There is a tendency to reduce the level of production on some mature assets and in order to maintain them at the current level of production and increase of oil recovery, it is necessary to make investments, capital investments.

KMG plans to cut costs and strengthen financial positions. If earlier in previous years large investments were directed to investment programs, for example, modernization of oil refineries, then in the future such costs are not planned. The stage of intensive capital costs has ended and further these projects will begin to give impact, accordingly the financial burden on the company decreases.

Major projects were basically modernized at the expense of borrowed funds attracted at favorable conditions. But at the same time, the income from their activities will not be significant due to the fact that the tariff for their services is approved at a level sufficient to service debts. Thus, the super-profits from recent capital expenditures are not expected. On the other hand, the overall multiplier effect on the economy of Kazakhstan as a whole is important. Basically, this concerns the creation of new jobs and the retention of available jobs. In the structure of companies there are unprofitable enterprises, to which a number of oilfield services companies belong. However, for reasons of social responsibility, KMG does not eliminate them, trying to help in other ways – to find orders, new work to save jobs.

Key Indicators of the DODO Program

Name/ Period	2017 (Actual)	2018	2019	2020	2021
Number of FFSs	25	40	60	80	100
Sales volumes (Kt)	30	102	158	217	277

For reference:



The DODO “Dealer Owned – Dealer Operated” program (the Partner owns – the Partner manages).

The main goal of the program is to enable the owners of gas stations to become part of the network of gas stations of KazMunayGaz – to work under the brand of KazMunayGaz, to sell oil products by coupons and KMG cards. Entrepreneurs (Partners) will be able to more effectively manage their own, existing gas stations.

For reference:



The CODO “Company Owned – Dealer Operated” program (the Company owns – the Partner manages) – the transfer to the management

of private entrepreneurs of FFSs with sales volumes of less than 300 tons / month. This program allows you to optimize the current costs for the content of gas stations, as well as enables small businesses to increase profits by concentrating efforts on a particular facility.

Economic Effect from the CODO Program (KZT mln)



RESERVES VOLUME AND CLASSIFICATION



ACCOUNTABILITY

We pay taxes and other fees provided by law to the state budget.

GRI 0G1

Hydrocarbon reserves in accordance with PRMS standards:

Proved and probable reserves of oil and condensate, MMbbl	3,209
– Proved developed oil and condensate reserves, MMbbl	1,826
– Proved undeveloped oil and condensate reserves, MMbbl	522
– Probable reserves of oil and condensate, MMbbl	860
Proved and probable reserves of liquefied petroleum gases, MMbbl	95
– Proved developed reserves of liquefied petroleum gases, MMbbl	35
– Proved undeveloped reserves of liquefied hydrocarbon gases, MMbbl	29
– Probable reserves of liquefied petroleum gases, MMbbl	30
Proved and probable reserves of commercial gas, MMbbloe	810
– Proved developed commercial gas reserves, MMbbloe	419
– Proved undeveloped commercial gas reserves, MMbbloe	216
– Probable reserves of commercial gas, MMbbloe	175
Total proved and probable reserves of hydrocarbons, MMbbloe	4,114
Production volumes:	
Oil production, MMbbl	174
Condensate production, MMbbl	6
Extraction of natural gas, MMbbloe	54
Total hydrocarbons, MMbbloe	234
Hydrocarbon reserves by SRC:	
Oil reserves in the category A+B+C1, MMbbl	5,379
Condensate reserves by category A+B+C1, MMbbl	358
Reserves of natural gas in the category A+B+C1, MMbbloe	3,008
Total hydrocarbon reserves in the category A+B+C1, MMbbloe	8,744

The Group of companies of KazTransGas JSC (hereinafter – KTG) includes two subsoil users: Amangeldy Gas LLP and KMG-Kansu Operating LLP, engaged in exploration and development of the Amangeldy deposit group and the Kansu deposit, respectively.

The volume and type of estimated proved reserves and production for 2017 for the Group of companies KTG:
At the deposits of the Amangeldy group:

- geological reserves of gas in category C1 – 26,762 MMcm, in category C2 – 13,664 MMcm;
- recoverable gas reserves in category C1 – 18,984 MMcm, in category C2 – 9,733 MMcm;
- geological reserves of condensate in category C1 – 1522.2 Kt, in category C2 – 664.2 Kt;

- recoverable reserves of condensate in category C1 – 493.8 Kt, in category C2 – 304.45 Kt;
- volume of produced gas – 343.738 MMcm, with the plan – 343.687 million m³;
- volume of produced condensate – 20.650 Kt, with the plan – 20.125 Kt.

The Kansu field is at the stage of geological exploration, gas reserves are accounted for as forecasted off-balance (forecasted) in the State balance of minerals in the amount of 4,314 MMcm in categories C1 + C2.

(for reference: category C1 – proved reserves, C2 – previously estimated (undeveloped)).

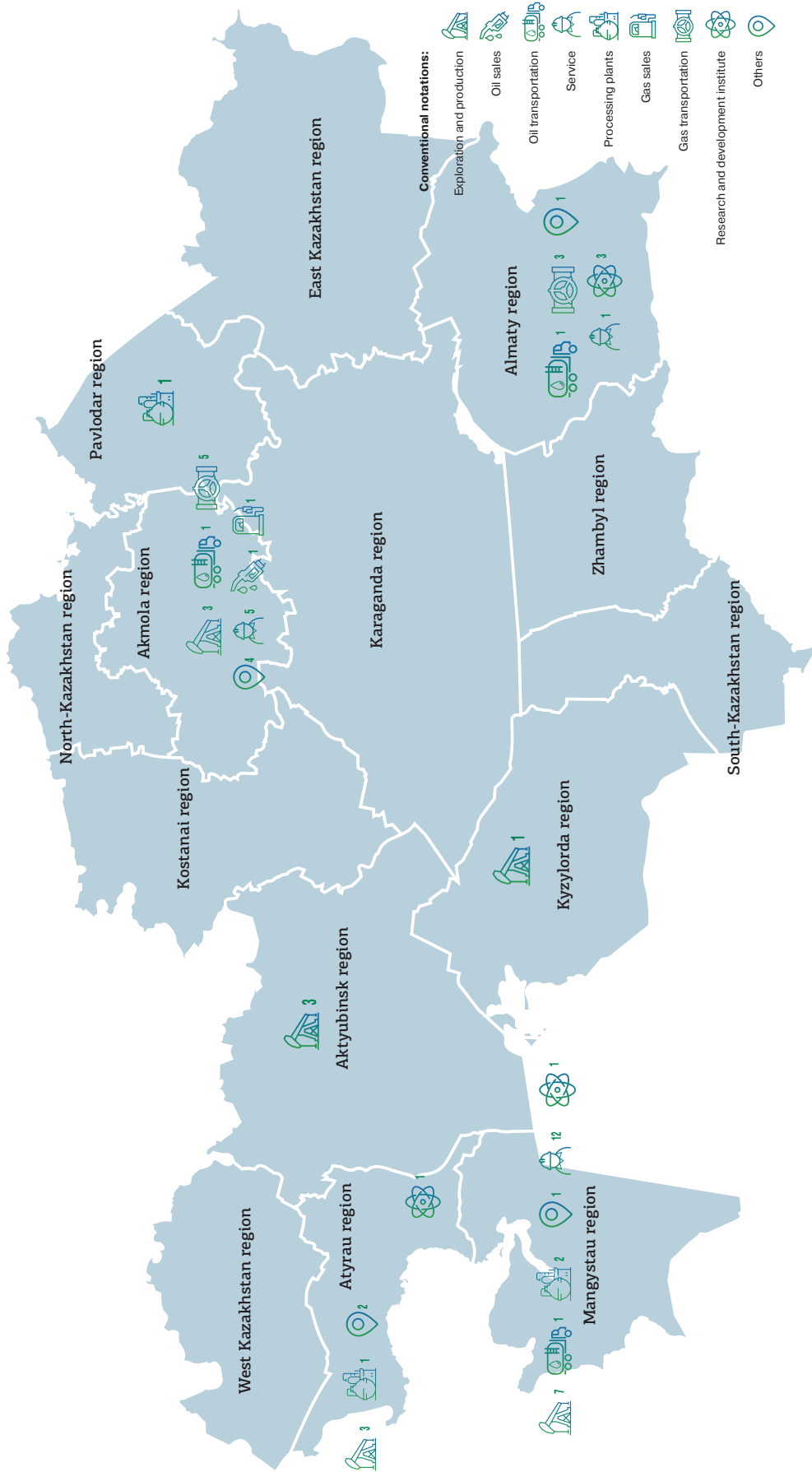
PRESENCE IN MARKETS –
GEOGRAPHIC FOOTPRINT

GR1 102-3, 102-4, 102-6, 102-7



ACCOUNTABILITY

We strive to promote the development of the locality in which we operate within our strategy and within the available financial possibilities.



STRATEGY FOR ENTERING THE WORLD MARKET

GRI 102-3, 102-4, 102-6, 102-7,
102-15, 103-2, 103-3



ACCOUNTABILITY

We strive to promote the development of the locality in which we operate within our strategy and within the available financial possibilities.

KazMunayGas International

The presence of KMG in KMGI is of strategic interest, because it provides a guaranteed sale of oil in the Black Sea and provide access to the end-user market with a population of more than 300 million people. In Romania, KMGI owns one of the largest and most modern refineries in the Black Sea region – Petromidia Navodari, as well as the Vega Ploiesti refinery. The network of gas stations of the group includes more than 1 000 points of sales in Romania, Moldova, Georgia, Bulgaria, France and Spain by owning jointly with CEFC 51/49 percent of shares in independent

oil and gas company DyneffSAS. The subsidiary company KMG Trading is a single operator that exports crude oil from the company's parent company KMG, as well as trading operations in international markets.

In 2007–2009 JSC NC “KazMunayGas” bought out 100% of the shares of the Romanian oil company Rompetrol. This was in line with the strategic plans of the Kazakhstan company not only to export its oil to Europe, but also to process it and sell it in the form of final products.

KMGI Growth Potential

According to the results of 2017, the total volume of KMGI processing amounted to 5.66 MMt, including 4.7 MMt of oil. The rest is in alternative raw materials, including a renewable energy source – bioethanol. For comparison, in 2010, the total volume of processing was 3.5 MMt, of which 3.37 MMt were oil.

The average daily processing of oil in 2017 was 16.76 Kt with a record figure of 19 Kt per day, which is the highest level achieved in the entire 41-year history of the plant. For comparison, in 2010, the average daily processing was 10.87 Kt. At the same time, the energy intensity index dropped to 99.97 against 120 in 2010. The Vega, which also reached its historic record of 373,000 tons of raw materials, is also on track.

The aim of KMGI is to provide the maximum economic added value for JSC NC “KazMunayGas” from oil refining, petrochemistry, sales of oil and oil products on foreign markets:

- ◆ Ensuring access of JSC NC “KazMunayGas” to international markets by developing units in Europe and promoting the Kazakhstan national oil brand;
- ◆ Increase of operational efficiency and technological equipment to ensure maximum use of internal resources of JSC NC “KazMunayGas” in the field of oil refining and petrochemistry;
- ◆ Formation of KMG as an integrated and diversified oil company in international markets, competitive in the sales segment of oil and petroleum products;
- ◆ Providing consumers with high-quality petroleum products and services by building an effective supply chain and developing controlled sales channels.

KMGI Development Strategy



Ensure access to affordable, reliable, sustainable and modern energy for all.



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.



In addition, the company plans to build up to 200 FFSs, develop industrial services in upstream and downstream, build a CHP in cogeneration mode at the site of the Petromidia plant.

The company is working to increase the share of gasoline and aviation kerosene in the total output of fuel. KMGI plans to start by providing aviation kerosene supplies to several Romanian regional airports. At the same time, the main goal is the largest airport in the country, Henri Coandă International Airport, located near Bucharest, the capital of Romania. The production growth will allow not only to follow the market trends of consumption of different types of fuel, but also to increase the margin of oil refining, taking into account the fact that aviation kerosene costs more than diesel fuel. In 2017, about 251 thousand tons of kerosene were produced.

The market share of Rompetrol in Romania for the sale of petroleum products is 25%, of which a separate retail share of 15%. The company is increasing market share in both Romania and the surrounding countries: Bulgaria, Moldova and Georgia. As for the plans in Spain and France, where the company also has its own assets, the task is to increase the share of the presence almost twofold – from 2.5% to 5%.

KMGI can sell the produced fuel for the most part in its own network of gas stations, consisting of 379 operating gas stations in Romania under the brand Rompetrol. In other countries of Western Europe the company works with serious competition. In general, in Georgia, Moldova and Bulgaria KMGI owns about 221 petrol stations. In 2017,

Romania, Georgia, Bulgaria and Moldova sold 2.8 MMt of gasoline and diesel fuel. Regarding the growth rates, sales of KMGI in Romanian retail in recent years have grown by 10% annually, while the Romanian market as a whole is growing by 2–5%.

Since 2013, the subsidiary company KMG Trading AG is a single operator that exports crude oil from the resources of the parent company KazMunayGas, as well as trading in international markets with third parties. KMG Trading manages petroleum products in the processing and retail sector, including sales to subsidiaries of the Group (Bulgaria, Moldova, Georgia, Ukraine, France and Spain) and third parties in the Black Sea region. KMG Trading was able to consolidate its position as the main trader of NC KMG, having a sufficient scale to start business development with third parties.

The main criteria for the export strategy of KMGI to other markets:

- ◆ Maximize the margin, which implies the wholesale sale of petroleum products at the maximum price in accordance with market conditions;
- ◆ Optimize the supply chain around the refinery, which consists of minimizing logistics costs when exporting to other markets;
- ◆ The opening of new profitable markets oriented for the medium-term perspective to the beginning of direct investments related to retail trade. Trade in oil products with bordering countries such as Serbia, Turkey and others;
- ◆ Development of trading business with third parties and structuring of new export deals.

Development of petrochemistry in Romania

One of the potential growth points for KMGI in Romania is petrochemicals, whose products have a growing demand all over the world. Currently, the company can produce annually 26 Kt of propane, 62 Kt of low-density polyethylene, 85 Kt of polypropylene. At the Vega refinery, the company produces special products: hexane,

environmental solvents, white spirit for the paint and varnish industry and bitumen. KMGI is the only bitumen producer in Romania, covering about 25% of the country's total bitumen demand. Petromidia refinery produces Euro-5 fuel, while processing various types of oil.

Marine terminal on the Black Sea

The presence of KMG in the geographic area connecting the Caspian and Black Seas is provided by the terminal "Midia Marine Terminal", which is part of the KMGI group.

The company "Midia Marine Terminal", which is part of the group, was founded in 2009, having received management of berths in the port of Midia from "Rompetrologistics". Since 2009 the terminal has been modernized, which

allowed it to become the most modern and multifunctional oil and gas terminal in the Black Sea for sea and river vessels. Annually, about 5 MMt of oil and 3.5 MMt of oil products pass through the terminal, which corresponds to the volume of transportation of 50 tankers and 60,000 railway tanks, respectively. Since the launch of the terminal, more than 385 tankers have been unloaded.

Management Approach

High growth rates of sales were achieved due to several factors. Over the past five years, Kazakhstani management has carried out a large-scale business transformation program, modernization of the Petromidia refinery, transformed and expanded the network of filling stations in several European countries. Firstly, this is a change in the operating model, secondly, it is rebranding the network of filling stations, and this is also an enhanced marketing policy. A well-considered and balanced investment program with the support of a shareholder of JSC NC "KazMunayGas" brings tangible results. Over the past five years, the company has been improving its operating indicators annually (raw materials processing, sales of petroleum products, reduction / optimization of costs for processing and marketing, financial indicators).

KMGI, through the Rompetrol brand, is an influential trademark of the national network of filling stations and fuel distribution points of other types known for the high quality

of the range of its fuel products, related services, the HEI restaurant network and the convenient filling system using Fill & Go cards. The fuel produced by Petromidia refinery brand Efix (Euro-5) is the most well-known and well-proven brand of fuel in the Black Sea region. Romania is a key market for KMGI, with a good profitability of sales channels. The retail market in Romania is characterized not only by a large level of fuel sales, but also by a significant margin, compared to other markets in the Black Sea region. Economic growth and rapidly changing infrastructure offer opportunities for rapid and profitable expansion. KMGI's strategy is to strengthen the company's position as a major player in the top three in the Black Sea region, through the organic development of all sales channels, including further development of its own network of gas stations and re-branding of existing stations. Strengthening positions in the vicinity of the city of Bucharest is at the heart of this strategy. In addition, the trading activities of KMGI on the distribution of liquefied petroleum gas will be expanded.

INDIRECT ECONOMIC IMPACTS

GRI 103-1, 103-2, 103-3, 203-1, 203-2

KMG is investing in infrastructure. According to the Group of companies of KMG, city-forming enterprises invest in social facilities, sports facilities. However, these investments for the company are non-core activities.

Implementation of projects on gasification of the RoK's regions

JSC NC "KazMunayGas" through its 100% subsidiary organization of JSC "KazTransGas"* makes a significant contribution to the development of the regions of the Republic of Kazakhstan, increase social and economic potential and improve the welfare of the population of the regions. Within the framework of the gasification program for the regions, JSC "KazTransGas" continues work on gasification and modernization of the settlements of the Republic of Kazakhstan.

In 2017 work on the project "Gasification of settlements and modernization of gas distribution networks of the Aktope region" was completed with a total cost of KZT 20 billion. In the project's boundaries:

- laying gas pipelines with a total length of 660 km, including a gas pipeline 173 km, high pressure 131 km, medium pressure 66 km, low pressure 290 km;
- 6 AGDSs, 13 FGUs, 158 GDPs were installed;
- Ten settlements of the Aktyubinsk region have been gasified: Irgiz village of Irgiz district, Komsomol village of Aitekebi rayon, Bogoslovka village of Alginsky district, Akkuduk village of Khromtau district, Altyndy village of Mugalzharsky district, Yenbek village and Taldysay village of Mugalzharsky district, Kosestek village of Kargalinsky district, Zhaisan village of Martuk district, village of Uil of Uil district. In general, in 2017 the population of the region consumed 817 MMcm of gas.

At the same time, JSC "KazTransGas" is also continuing to invest in the gasification of the regions:

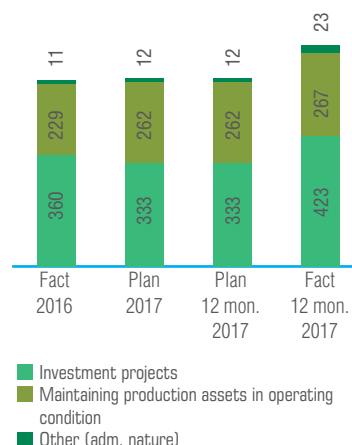
"Modernization of the gas distribution network of the city of Taraz." The project envisages replacement of low-pressure steel pipelines with polyethylene medium pressure in low-rise sector, replacement of dilapidated underground gas pipelines, installation of individual SHGRPs with SMART-card directly for each consumer of low-rise buildings. Following the results of 2017:

- gas pipelines with the length of 82.29 km have been constructed for 1 start-up complex of 2 stages;
- individual closets are installed – 2,596 pcs.

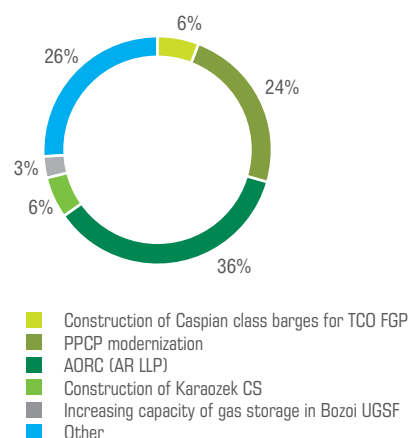
In total, in 2017, the population of the city of Taraz consumed 459 MMcm of gas.

"Modernization, reconstruction and new construction of gas distribution networks of settlements of Mangistau Region". The project is aimed at modernization and reconstruction, as well as the construction of gas networks in Mangistau region in order to improve reliability and improve the quality of services, eliminate gas shortage for consumers due to insufficient performance

Capital expenditures (KZT billion)



Key investment projects with a social impact (KZT billion)



* The company manages a centralized infrastructure to transport marketable gas through main gas pipelines and gas distribution networks, provides international transit and sells gas in the domestic and foreign markets, develops, finances, builds and operates pipelines and gas storage facilities.

Pursuant to Decree No. 914 of the Government of the Republic of Kazakhstan as of July 5, 2012, KazTransGas JSC was designated as the National Operator for gas and gas supply.

and unsatisfactory technical condition of gas networks. Within the framework of the project in 2017, KZT 23 billion of investments were invested.

In 2017, 737.44 km of gas pipelines were laid, including: high pressure 383.65 km, medium pressure 47.65 km, low pressure 306.14 km.

Installed: AGDSs – 6 pcs, GDCs – 23 pcs, FGUs – 28 pcs. 11 objects previously approved in the investment program were completed in the specified terms and put into operation. Five settlements of the region were gasified: Beyneu, Borankol, Batyr, Zharmat, Baskuduk.

“Expansion of gasification of settlements of the Kostanay region”. As of 01.01.2018 in the Kostanay region, six settlements were gasified within the project: Kachar village of Rudny town, Oktyabrsky village, Lisakovsk

village, Toguzak village, Karabalik district, Antonovka, Alyanovka, Denisovsky district, and Rudny town – continued gasification. In general, in 2017, the population of Kostanay Oblast consumed 364 MMcm of gas.

Investments in the gasification of regions, in addition to providing access to gas, also introduces other positive effects in the social and everyday life of the population:

- ◆ gasification of new territories will allow to create employment of the population in the operating organizations through work directly on the objects of gas distribution pipelines and AGDSs;
- ◆ transfer of the main industrial facilities to the ecological type of fuel – natural gas, improves the ecological situation in the regions;
- ◆ the comfort of living of the population in the region rises, the working and living conditions improve.

PROCUREMENT PRACTICES

(GRI) 204-1, 102-9, 102-10, 103-1, 103-2, 103-3



Make cities and human settlements inclusive, safe, resilient and sustainable.



One of the principles of procurement 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 purchases by the method of requesting price proposals only among the commodity producers of the purchased goods in the Register of Producers of the Holding Company, and also only among the organizations of the disabled who produce the purchased goods, which are in the Register of organizations of the disabled. In addition, the Rules provide for special conditions for the procurement of goods that are used by Subsurface Users of the Holding that 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 clause 3 of article 78 of the Law of the Republic of Kazakhstan “On Subsoil and Subsoil Use” to purchase goods from Kazakhstan producers of goods provided they meet the requirements of the project document and the legislation of the Republic of Kazakhstan in the field 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 JSC NC “KazMunayGas” 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 by the way of conducting an open tender with the use of tenders for a reduction, by the way of requesting price offers are conducted through the Electronic Procurement Information System in accordance with the Instruction for electronic procurement.

An important aspect in choosing a supplier of goods, works, services is the conduct of procurement procedures in strict accordance with the Fund’s procurement rules without the admission of violations affecting the outcome. This indicator is included in the Key Performance Indicators Card of KMG executives and its SDEs.

The Board of Directors of JSC NC “KazMunayGas” approved the Regulation on procurement of goods, works and services for JSC NC “KazMunayGas” and its subsidiaries. This Regulation was developed on the basis of Samruk-Kazyna Holding’s Purchasing Management

Standards and determines the procedure for the formation of Category Lists, Procurement category groups, the implementation of Purchasing category strategies, procurement planning, supplier selection procedures, and procedures related to maintaining the optimal stock size in KMG and KMG Organizations. This Regulation currently operates in a part that does not contradict the Fund's Purchase Rules.

The Fund has developed and approved a Special Procedure for Procurement among Qualified Potential Suppliers,

which provides for pre-qualified selection of potential suppliers and the formation of a database of potential suppliers that have passed prequalification.

In general, the volume of purchases of goods, works and services from resident companies of the Republic of Kazakhstan (irrespective of the nationality of their employees and the availability of certificates on the origin of the goods of the form "ST-KZ") amounted to:

KZT bn

Year	Total	Goods	Works and services
2015	1,481	570.7	910.3
2016	1,602.5	637.5	965
2017	2,257.9	775.1	1,482.8

Thus, in 2017 the purchase of goods, works and services from resident companies of the Republic of Kazakhstan amounted to KZT 2,257.9 billion, which is 88.4% of the total amount of purchases.

At the same time, the calculation of the share of local content in the procurement of goods, works and services is carried out on the basis of the Unified Calculation Methodology by local content organizations in the procurement of goods, works and services approved by Order No. 87 of the Minister for Investment and Development of the RoK of January 30, 2015.

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.

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

Year	Total	LC Share, %	Goods		Works / services	
			amount	LC Share, %	amount	LC Share, %
2015	1,669	77	620	81	1,049	74
2016	1,871	76	721	83	1,149	71
2017	2,553	75	863	79	1,690	73

ANTI-CORRUPTION AND SECURITY

GRI 103-1, 103-2, 103-3, 205-1, 205-2, 205-3, 406-1, 409-1, 410-1, 412-1, 412-2, 412-3



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.



Principle 10

Combating Corruption: Businesses must counteract all forms of corruption, including extortion and bribery.



INTOLERANCE TO CORRUPTION

Corruption destroys the value that our organizations create for our shareholders, investors, other stakeholders and society as a whole.

We declare intolerance to corruption in any of its manifestations in cooperation with all stakeholders.

Officials and employees involved in corruption cases are subject to dismissal and prosecution in accordance with the procedure provided for by law.

Internal control systems in the Fund and organizations should include, inter alia, measures aimed at preventing, preventing and detecting corruption offenses.

Dialogue with stakeholders should be developed to increase their awareness in the fight against corruption.

We are for
anti-corruption

0

cases of corruption

In 2017, by the decision of the KMG Management Board, the “Rules for conducting anti-corruption monitoring and internal analysis of corruption risks” (hereinafter in this section – Rules) and “Anticorruption Standard” were approved and implemented.

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

Publications in the mass media, circulation of individuals and legal entities, including through information systems of trust organized around the clock in KMG and in most SDEs, are also sources of information for conducting anti-corruption monitoring.

Today, KMG employees and every citizen can apply via e-mail or to the telephone line of trust about the legitimacy of actions of any employee, contractor or other persons whose activities are related to KMG.

The telephone number and email of the trust line are posted on the corporate site of KMG in the state, Russian and English languages. Similar information is available on the websites of SDEs.

So, last year, the information system of trust of KMG received more than 60 reports and statements about various violations in the group of the company. More than half of them concerned the quality of service provided by the personnel of the filling stations operating under the trademark of KazMunayGaz Onimderi LLP.

In addition, 7 complaints and applications on procurement of goods, works and services were considered.

All the appeals have been carried out corresponding checks, which resulted in measures taken to restore the violated rights of the applicants, as well as clarifications on the procedure for their resolution in accordance with the procedure established by law.

At the same time, there were no violations of the deadlines or unreasonable refusals to consider appeals.

Examination of over 90 internal documents, and more than 110 contracts for procurement. More than 435 employees and candidates for vacant positions were checked for involvement in corruption and other offenses in accordance with the Rules of Competitive Selection for Vacant Administrative Positions and Staff Adaptation approved by the decision of the KMG Management Board in 2016.

Along with this, for prevention purposes, in September 2017 an expanded general corporate event was organized in the form of a thematic meeting with representatives of the Agency for Civil Service and Anti-Corruption Affairs, as well as the Nur Otan Party.

Similar meetings and trainings on anti-corruption issues were held in almost all SDEs. 39.4% of employees received training in anti-corruption.

100% of employees and managers, including SDEs, were acquainted with anti-corruption policies and procedures.

As part of the prevention, on the information monitors in the administrative building of KMG, the promotional videos prepared on the initiative of the CSD are regularly broadcast on liability for corruption offenses in the state, Russian and English languages.

According to the data submitted by SDEs in 2017, 100% of suppliers of goods, works and services were notified to the group of anti-corruption policy and anti-corruption methods, whereas in 2016 this indicator did not exceed 55% of counterparties. This was made possible through the inclusion in the standard contracts for the procurement of

goods, works and services of KMG and SDEs of the anti-corruption section, as well as the obligations of KMG and SDEs as customers to familiarize prospective suppliers with the anti-corruption policy of the company group when concluding contracts.

In 2017, there were 85 companies audited to assess the risks associated with corruption and respect for workers' rights, whereas in 2016 only 38 companies were covered by such inspections. At the same time, there was not a single case of corruption manifestations, the facts of discrimination based on national, gender, religious beliefs and political views. The facts of using forced and compulsory labor, as well as legal proceedings and criminal prosecutions in connection with corruption and other violations were not allowed. Cases of abuse of authority by employees of corporate security units of the company's group are not established.

21.2% of security personnel were trained in policies and procedures for aspects of human rights.

We note that all the measures taken to prevent corruption and other illegal manifestations are systemic and strictly comply with the legislation of the Republic of Kazakhstan and internal documents of KMG.

100% of companies where human rights assessments were conducted, 25 hours of training were conducted on human rights issues.

During the reporting period, human rights compliance included 89 investment agreements and contracts.



ECOLOGICAL BALANCE

Our goal is to continuously reduce the negative impact of our activities on the environment. the priority areas of our activities are: management of greenhouse gas emissions, reduction of flaring, recycling of historical waste, reclamation of land and energy efficiency improvements.

Within the framework of achievement of the target functional, the following project is implemented by the HSE unit:

- ◆ *Introduction of a new model of OSH management.*



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.



ACCOUNTABILITY

We seek to minimize the negative impact of our activities on the environment and society by taking care of resources (including energy, raw materials, water), sequential reduction of emissions, waste, and the introduction of high-performance, energy and resource-saving technologies.

GRI 103-1, 103-2, 103-3, 102-29

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), audits production facilities. In order to

preserve the ecological well-being and reduce the negative impact on the environment, we continuously explore the possibilities of applying and introducing new practices and technologies.

HSE issues are heard monthly at meetings of the KMG Board and BoD, which increases the responsibility of managers and specialists.



ENVIRONMENTAL RESPONSIBILITY

GRI 102-11, 103-2, 103-3, 102-34, 069, 0610, 0612

In 2017, we continued the implementation of the roadmap for the improvement of the state of HSE, which defined our goals for the period until 2020. The road map contains the main strategic initiatives in the field of sustainable development.

KMG shares the main provisions of the precautionary principle (Principle 15 of the Rio Declaration on the Protection of the Environment and Development of the United Nations, 1992). Before launching new projects and facilities, we carry out a set of activities in the framework of environmental impact assessment (EIA) aimed at informing the public about the planned activity and its possible impact, with the aim of identifying public opinion and its consideration in the impact assessment process. We ensure access for all interested parties to EIA projects, acceptance and registration of comments and proposals. The materials are posted on the websites of local authorities and in the media, in order to familiarize the public with the planned activities. In cooperation with the Aarhus Centers, consultative meetings are held with the local community and public organizations. We immediately respond to community appeals and one of the Group's priorities is pre-trial settlement of situations.

The basis for monitoring the possible negative impact of production on the environment in the regions of activity is regular production environmental monitoring.

Complaints about the environmental impact of organizations filed through the mechanisms for filing environmental complaints during the reporting period.

1. Based on the complaint of residents of Atyrau related to the deterioration of the quality of outdoor air – the appearance of the smell of burning and oil products, the Department of Ecology for Atyrau region opened an unscheduled inspection of AR LLP in the period from 26.04.2017 to 22.06.2017. According to the report on

the results of the inspection No 06-17/1, there was no violation by AR LLP.

During the audit, the indications of air quality monitoring stations installed around the plant during the period April 26-27, 2017 were considered, according to which the maximum permissible concentrations for the above period were not established. Also, a check does not establish the excess of design emission standards in the environment separately by sources.

At the Atyrau Refinery there are four automatic air quality control stations that control the following pollutants: hydrogen sulphide, carbon monoxide, nitrogen oxides, sulfurous anhydride, hydrocarbons. Meteorological characteristics of atmospheric air are also determined at the stations. These environmental posts are sent to the central server of the central factory laboratory every 10 minutes, the branch of the Republican State Enterprise "Kazhydromet" in the Atyrau Region has access to the AR database.

2. On the basis of the complaint of residents of Atyrau concerning resettlement of residents falling into the sanitary-protective zone of the Atyrau Refinery (due to its expansion), in July 2017 an unscheduled inspection was launched to observe the environmental legislation of the Republic of Kazakhstan. The Department of Public Health Protection of Atyrau Region noted that the beginning of operation of the Advanced Oil Refining Complex (AORC), the resettlement of residents should be completed in full. The construction of AORC, including 14 modern process units, is the final stage of the plant's complete modernization. Implementation of the plan of measures for the resettlement of residents is being conducted by AR LLP since 2106. By the beginning of the full-scale operation of AORC, the resettlement of residents will be completed (Q1 2018).

USE OF ENERGY RESOURCES AND ENERGY PERFORMANCE

7 AFFORDABLE AND CLEAN ENERGY



Ensure access to affordable, reliable, sustainable and modern energy for all.



GRI 103-1, 103-2, 103-3, 302-1, 302-2, 302-3 , 302-4

The main strategic directions of development of energy saving and energy efficiency of the group are modernization of technological equipment, introduction of energy saving technologies, optimization of generation and consumption of thermal energy, and development of own generation sources, including using APG.

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.

Energy Consumption

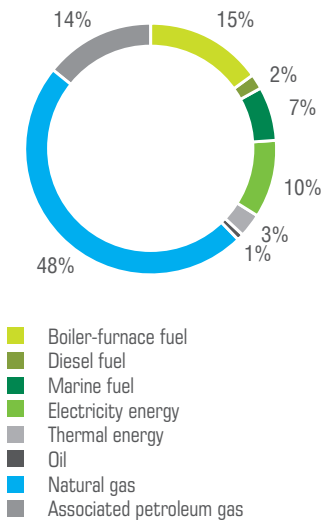
In total, 119.42 million GJ of fuel and energy resources were consumed in the reporting year, which is 5% higher than in 2016, including: 11.45 MMGJ of electricity, 3.45 billion of heat MMGJ, natural gas -56.89 MMGJ, APG – 17.21 MMGJ, boiler and furnace fuel 18.27 MMGJ, and other types of energy resources.

The increase in energy consumption compared with 2016 is primarily due to the increase in water cut in mature fields, as well as to the modernization of the RK refinery, which resulted in the introduction of new technological installations to increase the depth of oil refining.

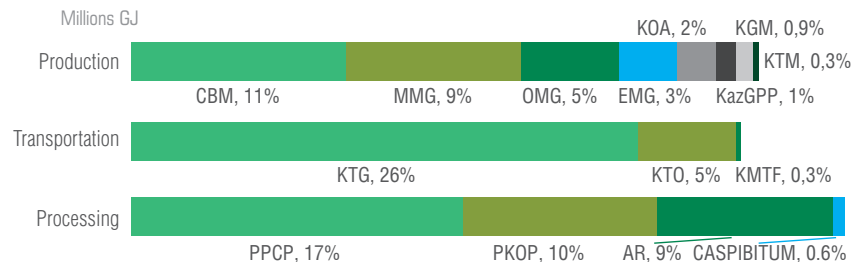
Total Energy Consumption



Energy consumption by fuel type, %



Contribution to Energy Consumption of Subsidiaries



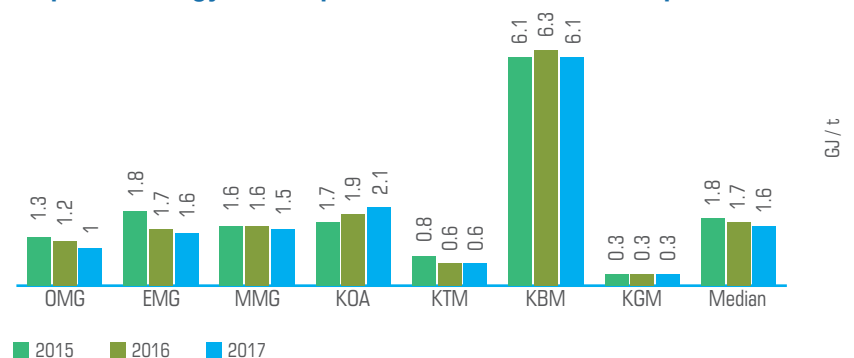
Currently, we keep a record of energy consumption only within the organization, in this regard, energy consumption outside the organization is not reflected in this report.

Energy intensity

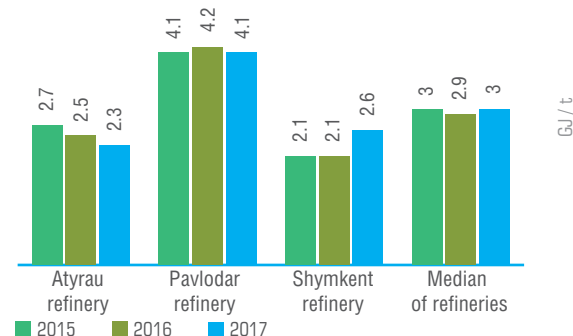
In 2017, the specific energy consumption in the direction of hydrocarbon production averaged over the Group of companies was 1.6 GJ per ton of produced hydrocarbons, which remains 16% higher compared to the international association of oil and gas producers IOGP (1.4 GJ per ton of produced hydrocarbons in 2016). In oil production, the specific consumption of energy resources is primarily due to the increase in water cut in production at mature fields.

In 2017, the specific energy consumption in the direction of oil refining averaged at the refinery was 3.0 GJ per ton of processed oil, which is at the same level as that of European plants. At PPCP, a higher level of specific energy consumption is primarily associated with the harsher climatic conditions in the region of the petrochemical enterprise. At PKOP in the reporting year, the increase in specific energy consumption is associated with the modernization of the plant, the construction of new ones and the reconstruction of existing process units to increase the depth of oil refining.

Specific energy consumption in the direction of RWS production



Specific energy consumption in the direction of oil refining



Reducing Energy Consumption

The main strategic directions of development of energy saving and energy efficiency of the group are modernization of technological equipment, introduction of energy saving technologies, optimization of generation and consumption of thermal energy, and development of own generation sources, including using APG.

Thanks to the energy saving measures, consumption of fuel and energy resources decreased by 0.7% compared to the base year.

We carried out more than 82 energy saving and energy efficiency measures, FS saving fuel and energy resources amounted to 833.3 KGJ, in kind 12.3 MMkW of electricity (0.4%), 2.1 Kcal of thermal energy (0.3%), 7,879 Kcm of natural gas (0.5%) and 14.6 Kt of boiler-furnace fuel

(3.3%). Due to the fact that the main measures for energy saving and energy efficiency, namely the introduction of technological equipment was realized in the IV quarter of 2017, the economic effect in kind of energy resources will be visible only in 2018. The financial expenses for the implementation of these measures amounted to KZT 1,387 million (USD 4.25 million). Saving financial expenses for the purchase of fuel and energy resources amounted to KZT 410.3 million (USD 1.26 million).

In general, the Energy Saving Program in different business segments of the Company has yielded the following results in energy resources saving in 2017:

- oil and gas production – 26,7 thous.GJ;
- oil and gas transportation – 325,1 thous.GJ;
- oil refining – 481,5 thous.GJ.

Results of activity in 2017

In 2017, an energy audit of the Corporate Center was conducted. Based on the results of the energy audit, 11 energy saving and energy efficiency measures were developed. Potential potential from the implementation of measures will be 14.3% of the total consumption of fuel and energy in the base year 2016.

Plans for 2018:

- ◆ in 2018, implement measures for energy conservation and energy efficiency, which will result in saving at least 0.8 MMGJ of energy;

- ◆ it is planned to conduct a benchmarking study of Solomon indices, to analyze the current level of development of the RoK's refineries in comparison with the best world plants;
- ◆ to continue work on attracting investors to energy saving through the ESCO.



USE OF WATER RESOURCES

GRI 103-1, 103-2, 103-3, 303-1, 303-2, 303-3



Ensure availability and sustainable management of water and sanitation for all.



Problem of water supply is very acute in Kazakhstan, and although does not suffer national water supply deficit, serious regional deficit is observed in the country. The industry is on the second place on water withdrawal after the agriculture, and annual increase of water withdrawal is provided by oil and gas extraction and processing industry*. In regions with deficit of fresh water oil and gas extraction can be accompanied by operating, reputation and economic risks, as well as operational and commercial problems in the result of tightening of normative standards, regulating water consumption, and as a consequence, increase of appropriate costs. Taking into account the fact that most subsidiary and dependent entities of KMG perform their activity in regions, where water is valuable and deficit natural resource, correct, timely and overall assessment of water resources utilization is very important for the company.

Activity of companies of 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. Nowadays single forms of data submission are developed in the KMG, allowing detailed and in-depth assessment both impact of each company of the group on water resources in presence regions, and to extrapolate this impact in the scale of Group of companies. 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. Audits of production facilities are

performed annually, visiting treatment and intake facilities of the company. Information on water resources utilization in Group of companies KMG is also analyzed in the context of comparison with various foreign and international companies of oil and gas industry by means of reporting to IOGP and IPIECA associations in accordance with the requirements of these associations (guidance, standards and methods). The company explores possibilities of application and introduction of new practices and water-efficient processes for the purpose of load reduction on water resources.

All companies of the Group strictly observe standards and requirements of water and environmental legislation of the Republic of Kazakhstan for the purpose of environment protection and non-admission of valuable natural objects pollution.

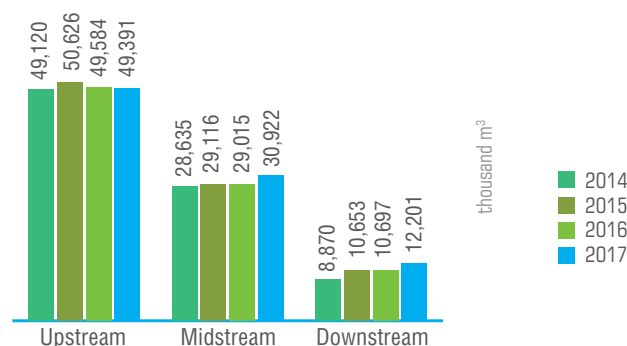
Understanding of importance of issue on sustainable use of water resources is increasing annually both among top management and at management level of structural subdivisions. As a consequence, more and more attention is paid to present aspect: corporate standard on water resources management is developed in Group of companies, functional group for discussion and solution of problems, related to water resources, was created, consisted of different subsidiaries; presentation concerning challenges and prospects in part of water resources utilization and protection in the company will be executed on Labor Protection and Environment Forum for the first time for directors general of the Group's companies in 2018.

* "Economic tools analysis in the area of water and sanitation in the Republic of Kazakhstan / Edited by Doctor of Economics, professor B. K. Yesekina – Astana, 2016 – p. 88

Total amount of withdrawn water by source

Total water withdrawal of Group of companies KMG was 84,5 mln m³ in 2017, which is on 4% more, than in 2016 (81,3* mln m³ in 2016). Water withdrawal has increased mainly by areas processing (1,5 mln m³) and transportation (1,9 mln m³) due to increase of number of installations on oil refineries and number of sub-subscribers, which buy water in KTO.

Water withdrawal by business areas



Total volume of water withdrawal by following sources in thousand m³:

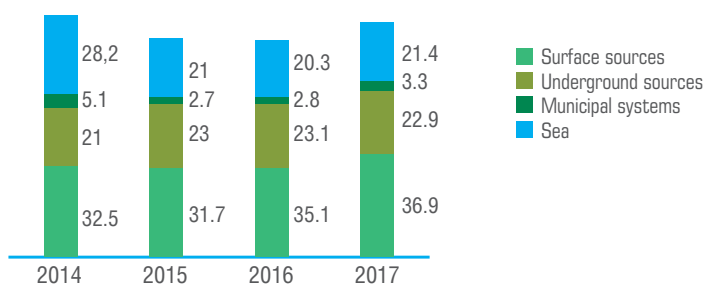
Source/year	2014	2015	2016	2017
Surface sources	32,478	31,663	31,707	36,813
Underground sources	20,907	23,006	23,077	22,875
Municipal water supply systems	5,072	2,686	2,656	3,249
Sea	28,168	20,987	20,275	21,369
Waste waters of other enterprises	0**	41	93	87

Waste waters, as part of water withdrawal, are available only on Pavlodar Refinery (87 thousand m³ in 2017) – it accepts wastes of other enterprises on its treatment facilities. Accounting of rain water, collected directly, is not maintained in such companies.

Water resources in the Company are used for following principal needs: production, drinking and household and steam production, water withdrawal for heat power plants (for oil refineries). Part of withdrawn water is transferred to other consumers without utilization, and many operations are associated with technical losses of water during transportation and utilization.

The most water-consuming area is Exploration and Production – 2,13 m³ of water was consumed in 2017 for extraction of 1 ton of RWC. 0,86 m³ of water was consumed for oil refining per 1 ton of processed RWC.

Water withdrawal by Group of companies KMG broken by sources, mln m³



* In sustainability report for 2016 total volume of water withdrawal was specified as 78 mln m³, and the difference in 3 mln m³ is due to the fact that inappropriate data on water volume, transferred by KTO to companies of the Group KMG during 2016 for recalculation of total water withdrawal inside the company, was submitted (11 mln m³ instead of 8 mln m³).

** This parameter was not controlled in specified year.

Most part of water (more 80%), consumed of production needs, was injected for pressure maintenance, remained 20% is consumed for such production needs as oil refining, hydraulic fracture, well workover, charge of fire-extinguishing system etc. Water transfer to other consumers, performed by KTO, in which jurisdiction is water supply line Astrakhan– Mangyshlak, is on the second place on water consumption.

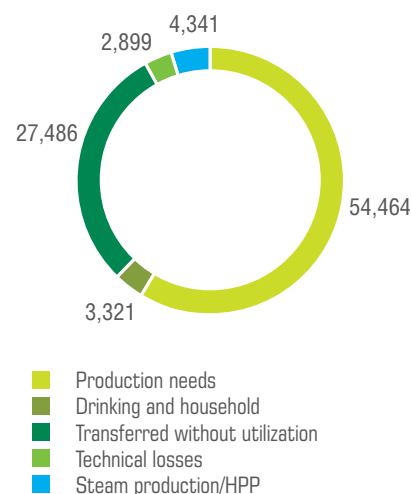
Total number of water sources, affected by the water withdrawal of the organization by type:

Main surface sources of water withdrawal for Group of companies KMG are the Caspian Sea (21,4 mln m³), Volga and Kigach rivers (29,4 mln m³), Ural river (5,2 mln m³), Irtysh river (1,9 mln m³) and Pyatimarskiy water reservoir (321 thousand m³). The Caspian Sea and Irtysh River are not listed in the List of water objects of special state significance, approved by the resolution of the Government of the Republic of Kazakhstan on January 21, 2004. Ural River is not listed in this list, however, Agreement on preservation of ecosystem of the basin of trans-border Ural River was signed between the Government of the Republic of Kazakhstan and the Government of the Russian Federation in October 2016 in Astana city, which in its turn is based on the Convention on the Wetlands of International Importance Especially as Wildlife Habitat dated February 2, 1971 and on Convention on protection and utilization of international watercourses and international lakes dated March 17, 1922.

Pyatimarskiy water reservoir with water-surface area 5 000 ha and located on the territory of Pyatimarskiy rural district on Kushum river, was entered to the list of local fishery waters (Resolution of Akimat of the West-Kazakhstani oblast № 176 dated June 16, 2017).

KMG also carries out exploration and production of hydrocarbons on the deposit “Urikhtau” – oil and gas

Water resources utilization by type of operations, thousand m³



condensate deposit, located in Mugalzarskiy region of Aktyubinskaya oblast. Most part of the deposit is in sands Kokzhide, which is known for fresh water resources.

Sands Kokzhide are the largest underground water deposit on stocks in the West Kazakhstan and unique on quality of fresh water. Rare endemic plants, listed in the Red Book of Kazakhstan, can be met on the territory.

Underground waters Kokzhide are listed in the List of geological, geomorphological and hydrogeological objects of national natural-reserved fund of the republican and international importance (Resolution of the Government of the Republic of Kazakhstan № 1212 dated November 18, 2010).

Total water withdrawal, thousand m ³	Volume of reused water, thousand m ³	% of reused water of total water withdrawal	Volume of circulating water, thousand m ³	% of circulating water of total water withdrawal
84,541	4,331	5,12	296,649	351

Companies of the KMG Group reused 4,3 mln m³ of water in 2017. Generally, effluent reuse is applied on oil refineries, where waste water after mechanical and biological cleaning on specialized treatment facilities is removed to receiving vessels (containment ponds), and partially returned to the refinery for further utilization. Such water is used for charge of water circulating systems in installations, and also for charge of fire-extinguishing system, planting watering and other needs. Percent of water reuse on refineries of

the KMG is 35% (of volume of water withdrawal by area Processing).

BIODIVERSITY CONVERSATION AND ENVIRONMENTAL MONITORING

(GRI) 103-3, 064, 103-2, 103-1, 304-1, 304-2, 304-3, 304-4, 306-5



Conserve and sustainably use the oceans, seas and marine resources for sustainable development.



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.



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

Besides abiotic component, we also strive to mitigate our impact on living organisms, inhabiting natural objects in regions of our presence. Therefore, planning future activities, we assess the possible impact on the biodiversity

and try to take measures on its mitigation. We perform regular environmental monitoring in accordance with the requirements of the environmental legislation of the Republic of Kazakhstan, during direct implementation of production operations, paying a special attention to specially protected natural reservations and protected areas.

Natural areas of our operations under protection

Nationwide conservation area of the North Caspian

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. 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.

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.

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.

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.

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 (situated in 1–5 km)
Category IUCN I-IV	0	0	Kansu
Category IUCN V-VI	Zhambyl Satpayev	Zhambyl Kansu Urikhtau	Alibekmola Kozhasay
World Heritage sites	–	–	–
Ramsar lands	–	–	–

Location and level of activity towards key biodiversity zones

Area	Location	Key biodiversity zones (KBZ)	Location towards KBZ	Contract area (km ²)	Plan on impact reduction
Kansu	Karakiyanskiy region of Mangistauskaya oblast	Kenderli-Kayasanskaya conservation area and Ustyurt state reserve	Located in conservation area and located in close proximity of reserve	4,374.6	Biological monitoring
Urikhtau	Mugalzharskiy region of Aktyubinskaya oblast	National integrated natural reserve of local significance “Kokzhide – Kumzhargan”	Includes part of the territory	239.9	Hydrogeological monitoring
Alimbekmola and Kozhasay	Mugalzharskiy region of Aktyubinskaya oblast	Sands Kokzhide Underground waters Kokzhide	Located in close proximity	156.5	Hydrogeological monitoring
Zhambyl	CS Atyrauskiy region	Special environmentally sensitive area of KSCS, Novinskiy reserve	Situated in conservation area and includes part of the territory	1,935.2	Regular environmental monitoring, restrictions on sea oil operations
Satpayev	KSCS Atyrau region	Special environmentally sensitive area of KSCS	Situated in conservation area	1,481	Regular environmental monitoring, restrictions on sea oil operations

Exploratory drilling of well at offshore block Satpayev was carried out in 2017 at sites, located or adjoining to the specially protected areas and protected areas. Nowadays man-made impact in these regions is not significant, and does not prevent free movement of wild animals and birds in their habitats. Following kinds of work affect the environment during exploratory drilling: drilling rig-up, drilling and well test, shipping. Influencing factors are: increase of suspended matters in water during construction at sea, violation of natural structure of bottom sediments, including affected by heavy traffic, noise physical impact.

One more impact source on marine environment is historical wells of onshore oil fields, located on flood zone I the result of rising sea level. According to the results of long-term baseline surveys, the impact was localized in space and in time and did not have a significant negative impact on state of marine environment. Plan of phased re-liquidation of these wells was developed and implemented in KMG.

Area “Kansu” is located in Karakiyanskiy region in Mangistauskaya oblast, partly within Kenderli-

Kayasanskaya conservation area and borders with Ustyurt state nature reserve (2 km protective zone from the area borders). Geological exploration works were not conducted on the area in 2016.

Deposit Urikhtau, Alibekmola and Kozhasay are located in Mugalzhar'skiy region of Aktyubinskaya oblast of the Republic of Kazakhstan. North-west part of contract area of the deposit "Urikhtau" is located in sands Kokzhide, the deposit is also borders with national integrated nature reserve of local significance "Kokzhide – Kumzhargan". Regular monitoring of environment conditions is performed for the purpose of prevention of ground water pollutions as in area of activity of the Group of companies, so in area of sand massif Kokzhide, adjoining to contract territory.

Areas "Zhambyl" and "Satpayev" are located in the north part of the Caspian Sea. Contract territories are located within conservation area of the Caspian Sea, and also partially within Novinskiy reserve, but production sites do not effect on environmentally sensitive areas. Restrictions on production operations are observed on these areas during the period of high environmental sensitivity (Annex 3. Level of environmental sensitivity of natural resources of the Caspian Sea). Anomalous natural phenomena of the environment or non-natural factors, causing concern or closer attention, were not fixed during investigation in the waters.

Our contribution to conservation of biodiversity in 2017:

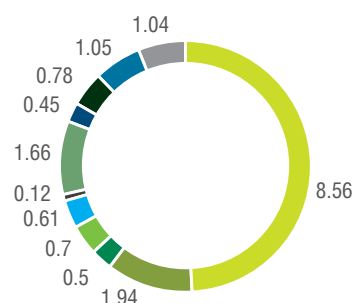
- Expenses for protection of flora and fauna were 121.7 mln KZT in 2017. These are mainly expenses for landscaping and reclamation.
- 4.9 km² (149,2 km² in 2016) of disturbed lands was reclaimed. Reclamation plan was developed in "Embamunaygas" JSC, according to which it is planned to reclaim 1,364.4 km² of historically disturbed lands in mid-term perspective.
- Young sturgeons were released in the amount of 4,700 thousand KZT (in the amount 508,35 thousand KZT in 2016).

Affected kinds of flora and fauna on specially protected natural reservations

Kind of flora and fauna	Kenderli-Sayanskaya state conservation area (number of species)	Ustyurt state nature reserve (number of species)	Novinskiy reserve (number of species)	Conservation area of the North part of the Caspian Sea (number of species)	State integrated nature reserve "Kokzhide-Kumzhargan" (number of species)
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.

Environmental actions in 2017 by areas of actions, bln KZT



- Air pollution control
- Protection and reasonable utilization of water resources
- Protection against impact on coastal and water ecosystems
- Protection of land resources
- Protection and reasonable usage of subsoils
- Flora and fauna protection
- Production and consumption wastes management
- Radiation, biological and chemical security
- Introduction of the best safe technologies
- Research and design and survey works
- Environmental education and propagation

	Land operations		Maritime operations	
	2016	2017	2016	2017
Areas, for which biodiversity was covered by EIA or similar document (%)	100	100	100	100
Areas, where environmental monitoring is carried out regularly (%)	100	100	100	100
Areas with liquidated wells, where monitoring of liquidated wells is performed regularly (%)	100	100	100	100

Number and percent of critical operation areas, where risk of biodiversity was assessed and controlled in 2017 by Group of companies KazTransGas:

GRI 064

The critical state of biodiversity is related to economic activities, natural pollution and natural disasters, as well as a small area of protected ecosystems. Depletion of biodiversity and degradation of ecosystems have been noted at 66% of the area of the Republic of Kazakhstan, especially in desert and steppe zone, during lands plowing and overgrazing.

Main task of operation and technical diagnostics of linear part of main gas pipeline is timely detection of changes in its technical state: conditions for interaction with the environment, assessment of remaining life of the gas pipeline, and selection of the most effective methods of repair and measures for provisions of safe and reliable operation of linear part of the main gas pipeline.

Control over performance of work in protected zones and approval for performance of work in minimum distance zones is carried out by gas transportation organization (operator) in accordance with the requirements of Operating procedures of main gas pipelines (approved by the resolution of the Government of the Republic of Kazakhstan No. 111 dated February 11, 2013).

Runoff flow of surface waters along the axis of the gas pipeline is prevented on slopes of ravines and river banks in order to protect the ground under the gas pipeline from erosion, as well as growth of ravines and washouts, located in protected zones of gas pipelines. Culverts of gas pipelines, laid in embankments, dams, mountains, are maintained in operating condition.

Route of the main gas pipeline, passing through state forestry fund land, within 3 m from the axis of utmost gas pipeline on either side, is periodically cleaned from scrubs and maintained in safe and fire safety conditions. Signs are installed along the route of the gas pipelines, indicating name of the facility, its ownership of operating unit, necessary technological schemes, and kilometer piquets of reference to general manufacturing scheme of the operating unit for the subsequent adoption of measures on elimination of discovered shortcomings, troubles, and defects.

OIL SPILL PREVENTION AND ASSETS INTEGRITY

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



Make cities and human settlements inclusive, safe, resilient and sustainable.



Conserve and sustainably use the oceans, seas and marine resources for sustainable development.



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.



Constant readiness to oil spill response (OSR) is absolute priority for us.

Our offshore operations

The Caspian Sea is unique natural object, whose fragile ecosystem is particularly sensitive to oil contaminants due to its completeness. We impose high requirements to environmental safety during performance of marine oil operations: we conduct baseline environmental studies in contract areas and assess our potential social and environmental impacts before start of any type of works and carry out impact monitoring, emission monitoring and emergency monitoring – during and after operations.

We ensure constant readiness to liquidation of all possible oil spills before start of drilling operations at sea. We perform continuous environmental monitoring of liquidated wells upon completion of works. Environmental monitoring programme in marine areas also includes diver inspections of wells. Monitoring of liquidated wells on contract areas includes monitoring of: air quality, sea water pollution and bottom sediments, biodiversity status, as well as laboratory and analytical works, photo and video shooting of well heads of abandoned wells.

We strictly adhere to the following principles during maritime operations:

- ◆ Strict adherence to design decisions;
- ◆ “Zero discharge” principle – all waste and waste waters are taken on shore;
- ◆ Provision of all floating crafts with fish protection devices and lack of bilge waters;
- ◆ Prohibition on production operations during spawning period – from April 1 to July 15;

- ◆ Prohibition on fishing from production vessels;
- ◆ Prohibition of well tests and burning of raw hydrocarbons at night;
- ◆ Adherence to special mode of utilization.

There is a system on insurance of operational and effective response to emergencies, including oil spills and implementation of appropriate operations on liquidation of their consequences. We conduct regular practical and theoretical exercises, various trainings and drills in order to improve practical skills of the staff and in order to improve level of readiness to OSR.

We drilled a marine exploratory well on Satpayev area during the accounting period, for which a special program on sea pollution prevention was developed. The program included measures on protection of marine environment, removal of stored materials, drilling agents and other substances, which can damage the environment, lawful use of the sea and other economic activities, from flood zone.

In case of possible spill occurrence, we conduct relevant drills and conclude agreements with specialized companies on liquidation of oil spills of 1st and 2nd levels. In case of spill of 3rd level, an agreement is concluded with the international association “Oil Spill Response Limited”, specializing in accidents eliminations on maritime oil and gas fields.

Our subsidiary KMG Systems & Services LLP (hereinafter KMG S&S) owns the North Caspian Environmental

Case history



Kazmortransflot conducted drills on oil spill response (OSR) in offshore of port Bautino

Drills, performed on June 27, 2017, were successful.

National Maritime Shipping Company “Kazmortransflot” LLP, a member of the KMG Group of companies, provides OSR during exploration drilling at Satpayev area in KSCS. Kazmortransflot conducted drills on oil spill response before drilling. Four vessels participated in drills: two specialized multitask vessels for support of maritime operations, as well as a tow and barge. Situation of potential oil spill, closer to real conditions, was simulated, where vessels shall liquidate oil spill, using special

equipment. Crews of ships and offshore personnel of Kazmortransflot demonstrated high level of training, qualification and competence.

Oil spill response services are integral part of maritime operations during exploration and production works. Their purpose is non-admission and prevention of possible emergency situations at the sea, related to possible leakage or subsequent oil spillage to sea surface, which can lead to drastic consequences for ecology of the sea, as well as life and health of people.

Response Base on Oil Spills (hereinafter referred to as NCERB) in Atyrauskaya oblast, the only specialized facility in the RoK, intended for OSR.

There is a zero level of oil spills on waters during the accounting period.

Onshore facilities

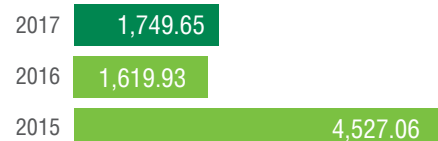
GRI 306-3

Ensuring of pipelines integrity is one of priority areas of the Company’s policy in the area of provision of industrial and environmental safety.

Accident rate is the key efficiency indicator of measures in the area of industrial safety and efficient system work in this area. Total number of oil spills decreased by 81% in 2017 as compared with level of the previous year, volume of spilled oil in 2017 was 1,749.65 ton, which is slightly higher than indicator of the last year. These results are consequence of programmes implementation on improvement of reliability of field pipelines in SDEs of the business company “Exploration and Production”, aimed at replacement of worn out pipelines and pipelines protection against corrosion by means of inhibition.

Successful implementation of these programs directly impacts on reduction of number of oil spills, and as a consequence, reduction of the area of soil contamination.

Volume of oil spill (onshore facilities), tons



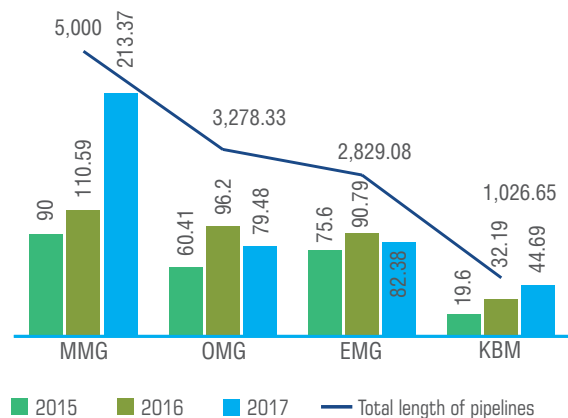
41 923,492 km of worn out field pipelines were replaced during the accounting period (3,219.7715 km in 2016). Replacement of pipelines involves use of pipes of higher quality, particularly pipes with improved corrosion resistance, armored and non-metallic (fiberglass) pipes.

There were no accidents because of technical state of pipelines in “KazTransOil” JSC from 2012 to 2017 (total length of oil pipelines of “KazTransOil” JSC is 5,377.3 km).

Statistical data, confirmed by inspections of the authorized bodies, confirm service reliability of pipeline system of “KazTransOil” JSC.

An important part of accident-free operation of pipeline system is timely diagnosis of its technical condition. In-pipeline and external diagnosis of 4,874.07 km of oil pipeline (91% of the total length), using modern diagnostic equipment, was performed for the purpose of identification and quickly removal of pipeline defects from 2012 to 2017.

Reconstruction (replacement) of field pipelines, km

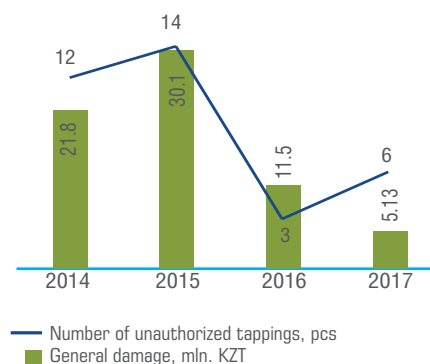


Effectiveness of anticorrosive protection means, used in “KazTransOil” JSC, is confirmed by the absence of corrosion failures on main oil pipelines within the period from 2012 to 2017.

“KazTransOil” JSC has reversed the situation with criminal illegal tapplings in pipelines of the company in close cooperation with law enforcement agencies since 2012. In 2013, it was possible to reduce number of unauthorized tapplings from several dozens or even hundreds per year to 17 facts; according to the results of 2014, 12 unauthorized tapplings were discovered; 14 tapplings in 2015; 3 unauthorized connections in 2016 and 6 illegal tapplings in 2017.

Periodic minor deviations in operation and maintenance of pipeline system of “KazTransOil” JSC are not systemic violations; they are eliminated promptly, without tangible consequences for pipeline system and population of the republic.

Illegal tapping



CLIMATE CHANGE AND AIR QUALITY

GRI 103-1, 103-2, 102-21, 103-3



Take urgent action to combat climate change and its impacts.



The world power supply system is undergoing serious changes over the last decades, due to growth of demand for energy resources from developing countries, where economic growth is observed, in one respect, and due to growing environmental load because of use of fossil fuels. As we try to increase oil and natural gas production in order to meet the growing global energy demand, we pay foremost attention to measures on mitigation of negative impact of our activities on the environment, complying with the requirements of environmental legislation, reasonably using natural resources and constantly improving environmental activities.

Quantitative indicators for greenhouse gas emissions cover 17 subsidiaries of the Group, whose greenhouse gas emissions amount more 20,000 ton of CO₂ per year and which are included in the National Allocation Plan of GHG quotas for 2018–2020. Emissions of CO₂ because of biomass combustion or its decomposition are not taken into account.

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 permit, GHG quota, gas flaring permit 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.

Modernization is carried out at the refineries, which will allow production of high-quality petroleum products, meeting the requirements of emission standards K4 and K5, and reduction of air contaminants from final customer.

It is planned to approve the KMG Corporate Standard for air contaminants management in 2018, where the main principles of operations management on reduction of adverse effect on the atmosphere, will be determined.

We disclosed information on activity of KMG on ensuring of environmental sustainability and carbon equivalent of the KMG Group to stakeholders, which was evaluated by the company's experts at panel sessions of Future Energy Forum within the EXPO. Hereafter, we are going to report on greenhouse gas emissions under Climate Program CDP.

We continue 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, related to climate change, improve our knowledge and skills in order to increase our abilities on implementation of strategy on emissions reduction.

GREENHOUSE GAS EMISSIONS

GRI 305-1, 305-4, 305-5, 305-6, 066

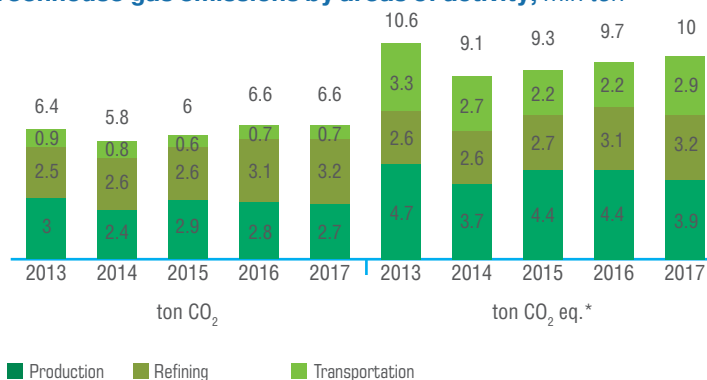
We maintain records of direct greenhouse gas emissions; data is verified and submitted to the authorized body on an annual basis. Organizations, listed in the National Allocation Plan of quotas, confirm installation passport and validate monitoring plan.

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

State regulation of greenhouse gas emissions in the country is implemented by volume of carbon dioxide (CO₂) emissions. According to the results of 2017, volume of carbon dioxide emissions in the Group of companies KMG was 6.57 million ton (6.53 million ton in 2016). A slight increase in emissions had happened due to expansion of reporting boundaries (17 SDEs – in 2017, 15 SDEs in 2016).

Despite the growth of hydrocarbon production and modernization of oil refineries, level of greenhouse gas emissions in CO₂ eq. in the Company for the last 5 years is

Greenhouse gas emissions by areas of activity, mln ton



* CO₂ equivalent is measurement unit of global warming potential of greenhouse gases. Carbon dioxide is standard, by means of which other greenhouse gases are estimated. Global warming ratio for methane is 21 and 310 for nitric oxide in country's methodologies.

5% below the level of the base 2013, which is associated with reduction of gas flaring and, correspondingly, reduction of methane emissions, and implemented energy saving and efficiency measures. However, level of CO₂ emissions in ton is 2% higher than the base 2013 year.

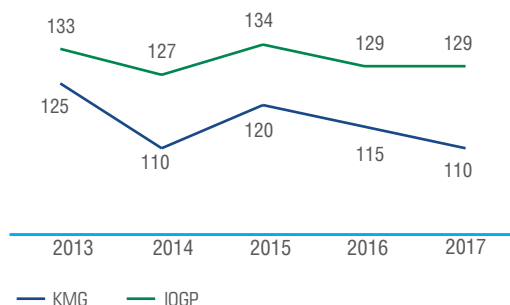
Total emissions by kinds of greenhouse gases

	2013		2014		2015		2016		2017	
Greenhouse gases	thou-sand t	thou-sand t CO ₂ eqv.	thou-sand t	thou-sand t CO ₂ eqv.	thou-sand t	thou-sand t CO ₂ eqv.	thou-sand t	thou-sand t CO ₂ eqv.	thou-sand t	thou-sand t CO ₂ eqv.
CO ₂	6,420	6,420	5,850	5,850	6,027	6,027	6,527	6,527	6,569	6,569
CH ₄	178	4,131	142	3,195	149	3,132	147	3,062	163	3,391
N ₂ O	0	33	0	20	0	106	0	88	1	77
PCFs	0	0	0	0	0	0	0	0	0	0
Total:	6,598	10,584	5,992	9,064	6,176	9,266	6,675	9,678	6,732	10,037

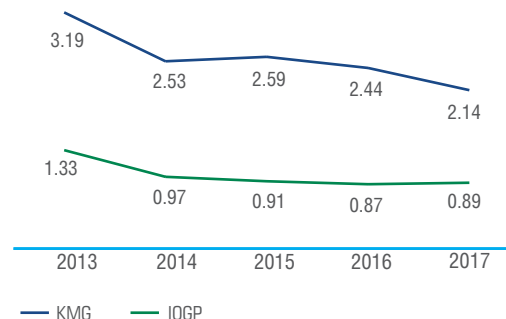
Volume of direct greenhouse gas emissions by business area "Hydrocarbon production" was 2.57 million ton of CO₂ in 2017, which is 2% lower than the level of the previous year (2.62 million tons in 2016). Due to measures, taken

for improvement of energy efficiency, indicator of CO₂ emissions intensity decreases even in case of growth of volume of produced raw hydrocarbons.

Intensity of CO₂ in exploration and production



Intensity of CH₄ in exploration and production

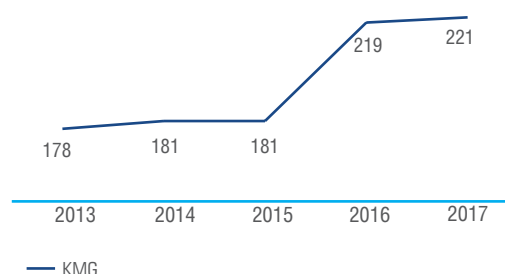


We began to calculate intensity of methane (CH₄) emissions by business area “Hydrocarbon production” since the current year. Over the past 5 years, methane emissions have decreased by 30%, but the intensity of emissions is still higher than industry average. Reduction of this indicator is expected according to implementation of measures on reduction of flaring.

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

Nowadays calculations of intensity on business area “Transportation” are not performed due to the fact that only one company is represented in the area of oil transportation, and volumes of GHG emissions and gas transportation volumes of presented organizations are not comparable in the area of gas transportation.

Intensity of emissionf in refining sector



Project on direct detection of methane leakages

In the result of pilot projects on detection and quantitative measurement of methane leakages at our production facilities together with the Environmental Protection Agency and Norwegian company “Carbon Limits” during 2015–2016, we entered the project network of Global Methane Initiative (GMI) in 2017. Upon the initiative of our Company, an introductory meeting of the representatives of the Global Methane Initiative (GMI) with the employees of the Ministry of Energy of the Republic of Kazakhstan and KMG subsidiaries and dependent entities was held in Astana. The Ministry of Energy of the Republic of Kazakhstan has entered the subcommittee of oil and gas of the GMI in 2017.

New projects on detection of methane leakages at new production facilities of the Company, as well as participation in the Global Methane Forum, are planned for continuation of cooperation, in 2018.

As part of modernization of oil refineries, a number of measures are being taken on reduction of greenhouse gas emissions, such as launch of vapor recovery unit, installation of floating lids on new tanks. Reduction of emissions will be also observed in the result of energy saving and energy efficiency measures, such as transfer of boiler houses from diesel fuel to gas, workload optimization of compressor stations with gas turbine drive, reconstruction of manufacturing equipment, transfer of vehicles (special equipment) to gas, installation zirconia sensors for determination of limit value of excess air (reduction of fuel losses from flaring in furnaces).





Case history

Greenhouse gas emission reduction

Vapour recovery unit was put into operation for blocking of harmful emissions into the atmosphere during reconstruction of oil pumping station named after N. Shmanov of “KazTransOil” JSCC in Atyrauskaya oblast, which task is processing of light hydrocarbon vapours which are formed during the filling, transportation and storage of oil. In the result clean air is released into the atmosphere, while hydrocarbon particles are trapped and returned to the reservoir by means of usage of absorbing liquid.

Pre-commissioning and start-up of vapour recovery unit, related to vapour output devices from filling stands of oil loading rack of PKOP LLP in 2017.

As part of the modernization, Atyrau Refinery constructs automatic installation of on-spot loading of light oil products into rail tank cars with hydrocarbon gas recovery, which commissioning will allow reduction of hydrocarbons losses to the atmosphere during filling

operations, and prevention of greenhouse gas emissions into the environment.

The Company does not release ozone-depleting substances, which impact on climate change, during its activity. Periodic monitoring and control are carried out.



Air quality

GRI 102-48, 103-2, 305-7

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.

Base stock of all pollutants emissions was 256 thousand ton (241 thousand ton in 2016) by the Group in 2017. Slight

	2017	2016*
Electricity generation	5,013	4,643
Flaring	14,509	16,587
Other stationary sources	236,828	219,851
Total:	256,350	241,081

Calculations of air pollutant emissions into the atmosphere are made on the basis of technical characteristics of the equipment, used in accordance with the current guidelines and recommendations on determination of air pollutant emissions into the atmosphere. We do not perform direct measurements using, for example, gas analyzers on a real time basis, however, universal transition to automated

increase of emissions is observed due to commissioning of new sources. Bulk of atmospheric pollutant emissions is related to the transportation sector – 58%, contribution of extraction and refining sectors – 22% and 18%, respectively.

Emissions are analyzed by sources since 2016.

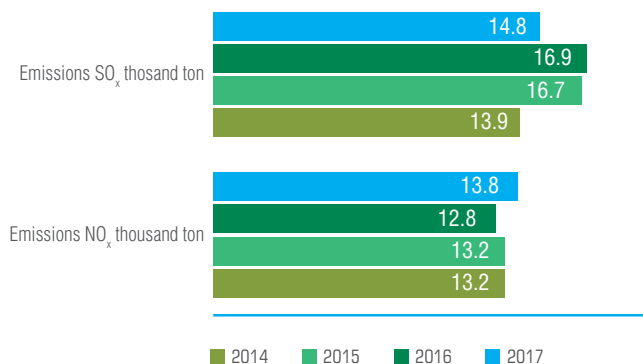
monitoring of air pollutant emissions by means of installation of sensors/gas analyzers at emission sources is planned by the authorized environmental protection agency within the country’s transition to digitalization. This issue is considered by users of natural resources. One of main emissions into the atmospheric air are sulfur oxides (SO_x) and nitrogen oxides of (NO_x).

* Data for 2016 were recalculated in Sustainable Development Report for 2017, taking into account new production facilities (total amount of emissions is 173.4 thousand ton in the report for 2016).

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

Average ratio of NO_x emissions to total raw hydrocarbon production in oil equivalent by Group of companies KMG was 0.25 ton per thousand ton of raw hydrocarbon production in 2017, average IOGP indicator was 0.4. Compared to 2016, there is a slight increase in NO_x emissions. Average ratio of SO_x emissions to total raw hydrocarbon production in oil equivalent for Group of companies KMG was 0.32 ton per thousand ton of raw hydrocarbon production, average IOGP was 0.2. Compared to 2016, there is a reduction in SO_x emissions.

Number of air pollutant emissions



Case history



Claus sulfur plant and tail gas treatment of Atyrau refinery

Commissioning of new combined Claus sulfur plant and tail gas purification is of great importance in improvement of the environmental situation in “Atyrau Refinery” LLP and Atyrauskaya oblast, since oil, processed at the plant, has a high sulfur content. With the implementation of this project, sulfurated gas will be regenerated, which will reduce SO_2 emissions into the atmosphere, while simultaneously production of important industrial products – commercial sulfur in Sulfur Granulation Unit.

Case history



Automatic installation of spot oil loading (AISL)

Automatic installation of spot oil loading unit (AISL), the first in Kazakhstan, was put into operation as part of the project “Modernization and Reconstruction of Shymkent Refinery” at Shymkent refinery (PetroKazakhstan Oil Products LLP), which was designed and built in accordance with the environmental requirements. Its technology provides air-proof oil loading by two separate points to oil tank cars with capacity 730 m³ h each through telescopic equipment, which prevents the release of hydrocarbon vapours into the atmosphere.

Also within the framework of the modernization, new diesel hydro-treater, sulfur production, and gas flare device have been commissioned to ensure safe removal

of process gases. Pre-commissioning works are carried out at offplot facilities and naphtha isomerization installation, which allows obtaining of super gasoline. Emissions of pollutants into the atmosphere have decreased on 1,089.62 ton/year.

Nowadays construction of similar AISL is being carried out at other refineries of the company. Tanks of the petrol park of the refinery will be equipped with pontoons and nitrogen cushions, and floating lid in raw Stock Park in new tank batteries and fuel-loading tanks for reduction of emissions of hydrocarbons into the atmosphere. All tanks are equipped with reflective discs. Collection efficiency of hydrocarbon emissions is from 95 to 99%.

Associated petroleum gas recovery

GRI 06 6

We try to minimize volume of associated petroleum gas (APG) combustion. Level of gas recovery was 85% in 2017 (86% in 2016). Full recovery of associated petroleum gas by means of its processing at gas processing plants is observed at many deposits, using APG for electricity production at gas-fired plants and for industrial requirements of own fields. Commercial gas is also supplied to the local population. APG is still regularly burned at several deposits, however, the organizations have approved programs for APG development and refining, according to which regular combustion of APG will be reduced to zero by means of construction on APG preparation, gas engine generator plants, etc. Level of gas recovery is expected at level 95% in the coming years.

The company does not reinject APG in site.

Construction of infrastructure and modern facilities on APG recovery allows full-scale development of profitable assets and significantly reduction of greenhouse gas emissions into the atmosphere.

The average ratio of burned gas to total production of raw hydrocarbons raw in oil equivalent by Group of companies KMG was 11 ton per thousand ton of raw hydrocarbons production in 2016, average IOGP – 12.9.

The company submitted the first reporting on total APG flaring volumes for 2016 as part of the World Bank’s global initiative on termination of regular APG flaring by 2030 in the first quarter of 2017.

Case history

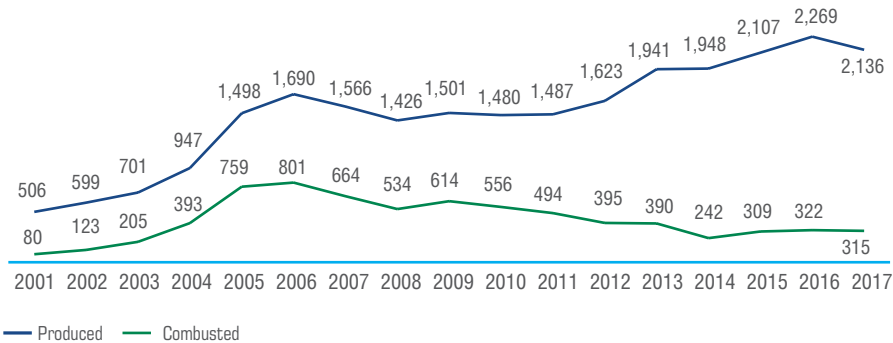


Commissioning of unit on preparation of associated petroleum gas

The unit on preparation of associated petroleum gas of group of deposits Provinskaya was commissioned in 2017 with capacity – 150 mln m³ per year. The unit is intended for APG recovery. Gas processing technology – LO-CAT from Merichem, applied on the Unit, is environmentally safe and provides high efficiency of hydrogen sulphide removal. The whole process of gas preparation is fully automated and provides several degrees of protection against emergency situations. Commercial gas, stable gas condensate – 4.1 thousand ton and sulfur pellets – 2.7 thousand ton will be produced annually on the Unit.



Dynamics of pollutant emissions, mln m³



WASTE MANAGEMENT

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



Ensure sustainable consumption and production patterns.



Waste management in companies of the group is one of the most important environmental aspects. As hydrocarbon production and processing industry is distinguished by the high level of formation of various types of wastes, including essential volumes of hazardous wastes, the KMG controls the processes leading to formation of certain types of waste, volumes, disposal methods and ways of transportation.

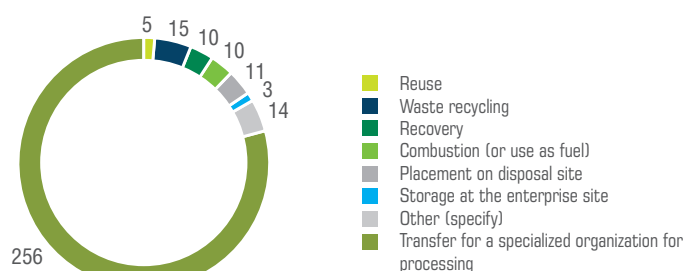
First of all, the companies of the group try to meet the requirements of the legislation in the area of waste management. For this purpose Waste Management Programs are developed and implemented in the companies of the Group. Significant financial resources are allocated for solution of problems, related to wastes generation and land pollution at production facilities.

Some companies are processing significant amounts of historical wastes and contaminated land on a voluntary basis. In recent years, KMG has been keeping records of waste generated throughout the contract area, including all wastes generated by contractors. KMG also monitors its contractors to ensure their activity is complied with the requirements for safe transportation, landfilling and disposal of waste. New approaches and technologies in waste management are regularly reviewed to be further implemented in production facilities.

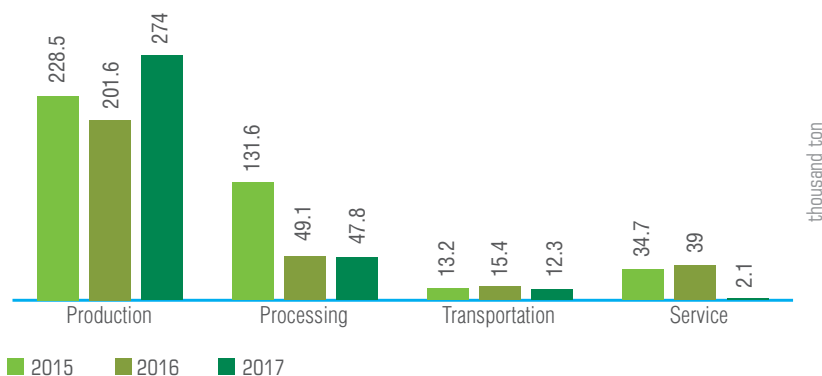
Volume of generated wastes in 2017 is 336.3 thousand ton (more on 10.2% than in 2016), among them 323.58 thousand ton were classified as “dangerous”, and 12,7 thousand ton as “unhazardous”. Most part of hazardous waste – 57.4% are drill mud (drill cuttings and waste drilling mud).

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.

Volume of hazardous wastes for 2017 by management kinds, thousand ton



Dynamics of wastes generation by areas, thousand ton



* The sharp decrease in the volume of waste generation in 2017 in the direction of the Service is due to the fact that in that year the waste generated as a result of the activities of LLP Oil Services Company was accounted for as waste generated in the contract area of the MMG JSC, as LLP Oil Services Company performs drilling operations only for MMG.

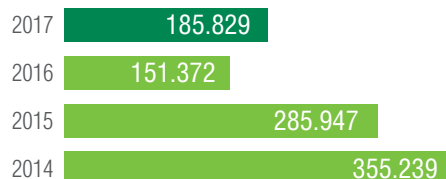
Drill mud generation

GRI 06 7

Extracting companies of the KMG generated 185.829 thousand ton of drill mud (on 22.8% more than in 2016) in 2017, including: 50.49 thousand ton – waste drilling mud; 135,339 thousand ton of drilling cuttings. Increase of volume of drill mud is associated with increase in number of drilled wells in 2017 compared to the previous year. 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.

Extracting companies of the KMG from specified perimeter do not perform drilling operations, using non-aqueous drill mud (water-based only).

Total generation of drill mud by KMG, volume of generated drill mud



	Onshore projects		Offshore projects	
	Waste drilling mud, thousand ton	Drill cuttings, thousand ton	Waste drilling mud, thousand ton	Drill cuttings, thousand ton
2014	116.501	236.954	0.905	0.879
2015	83.079	200.62	1.144	1.104
2016	44.242	107.13	0	0
2017	49.499	134.279	0.991	1.06

Transportation of hazardous wastes

We do not import/export hazardous wastes outside/within Kazakhstan.

GRI 306-1, 306-4, 306-5, 065

Import and export restrictions of hazardous waste for the Republic of Kazakhstan are reflected in the Environmental Code of the Republic of Kazakhstan, as well as in the Rules for Import, Export and Transit of Wastes, approved by the Government of the Republic of Kazakhstan No. 594 dated July 11, 2007.

Water disposal by quality and place of destination

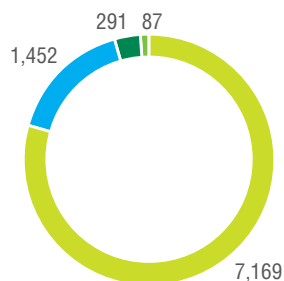
Total volume of water disposal by Group of companies KMG was 9 mln m³ in 2017, this is on 2% more than in 2016.

Volumes of water disposal by areas, thousand m³

	2014	2015	2016	2017
Upstream	916	783	773	1,131
Midstream	1,190	1,016	1,220	1,390
Downstream	5,988	6,207	6,795	6,477

Main storage facilities (and terminal point) of waste waters of KMG enterprises are various specialized storage

Waste water disposal of the KMG Group of companies by the types of receiving facilities, th. m³



- Dropped to specialized drives
- Transferred to third parties
- Dropped on terrain reliefs
- Injected into the formation for disposal

facilities: storage ponds, evaporation fields and filtration fields. These facilities are technical facilities, intended for natural waste water purification and prevention of environmental pollution. All drains of the enterprises undergo mechanical and biological purification before entering storage facilities. Enterprises, which do not have own storage facilities, transmit drains to special companies for cleaning and disposal.

There is no information on use of waste water of enterprises from other companies. Within the Group of companies there is a transfer of waste waters of any companies to treatment facilities of others. For example, KazGPZ partially transfers its drains to OMG for recovery.

There is no unscheduled discharge in the Group of companies KMG. All volumes and quality of discharged waters are subject to standartization.

Reservoirs, affected by water disposal and drain

Group of companies KMG do not discharge waste waters into natural water bodies. All discharges from enterprises are produced to specialized objects (storage facilities, evaporation ponds, filtration fields) after appropriate treatment. Use of surface water bodies for water disposal is prohibited according to the Article 89 of the Water Code of the Republic of Kazakhstan.

The group companies, operating at the sea, observe “zero discharge” principle – all waste and drains are transported ashore for disposal. Water disposal within the state conservation area in the north part of the Caspian Sea is prohibited by the Article 262 of the Environmental Code of the Republic of Kazakhstan.

Benzol, lead and sulfur content in fuel

In accordance with the State Program of Industrial and Innovative Development of the Republic of Kazakhstan, modernization and reconstruction projects are implementing on three refineries in the Republic, which will allow producing a fuel of new class K4, K5. Gasoline, produced by Kazakhstani refineries, has improved environmental properties, and supplied to all regions of Kazakhstan, and highly appreciated by consumers. Products, produced by the refinery, comply with the requirements of Technical Regulation TR TS 013/2011 “On Requirements for Petrol and Aviation fuel, Diesel and Marine Fuels, Jet Fuel and fuel oil”, where fuel requirements are specified for the purpose of protection of human life and health, property, protection environment,

Volume and recovery of local waters

Extracting companies of the KMG extracted 124.416 mln m³ of associated local water during oil extraction in 2017 (on 1.2 mln m³ more than in 2016 and on 2.4 mln m³ more than in 2015). Most part of this water (123.348 mln m³ or 99%) was injected into the reservoir to maintain reservoir pressure. Reinjection of associated local water is method of recovery and effective method of oil recovery intensification. Remaining 1% of produced local water is injected into absorption wells (as maintenance of reservoir pressure is not required on the deposit, where it is extracted together with oil). Water-oil emulsion is extracted to the surface during oil extraction, which is subsequently divided into water and oil by gravitational method. Such water is injected into reservoir after additional treatment.

Injection of local waters for maintenance of reservoir pressure during the development of raw hydrocarbons is object of Special Water Use according to the Article 66 of the Water Code of the Republic of Kazakhstan.

Total volume of produced local water, thousand m³

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

GRI 103-2, 103-3, 068

preventing misleading actions for consumers about its purpose, safety and energy efficiency.

Hydrotreating process is an integral part of technological process, ensures reduction of undesirable components S/N/O/, metal compounds, etc. Use of modern production technologies ensures reduction of sulfur and benzole levels and compliance with the requirements of emission classes K4/K5. Metal-containing additives are not used (prohibited by technical regulations (TR TS 013/2011).

To ensure the proper quality of fuel, continuous monitoring is carried out throughout the entire chain supply of oil products: from the plant to bulk plants and gas stations.

Gasoline

Gasoline shall be chemical-resistant and not cause corrosion. Corrosion activity of gasolines and their combustion products depends on content of total and mercaptan sulfur, acidity, content of water-soluble acids and alkalis, presence of water.

Content of lead compounds in gasoline is the most important among environmental indicators of gasoline. In this regard, Pavlodar refinery LLP completely refused of use of ethyl liquid. Highly toxic lead compounds are almost absent in gasolines.

Diesel fuel

Diesel fuels are produced mainly by mixing of directly distilled component from crude oil distillation plant with diesel fuel, which has undergone hydro treatment for

reduction of content of sulphurous, nitrogenous, oxygen-containing, organometallic compounds.

Bitumen

Bitumen plant “JV” “CASPIBITUM” LLP (hereinafter – CASPIBITUM) was built in accordance with the State Program on Forced Industrial and Innovative Development of the Republic of Kazakhstan for 2010–2014 for cover of needs in high-quality road bitumen during construction of roads in the Republic of Kazakhstan. CASPIBITUM was found in 2009. CASPIBITUM is plant on production of road bitumen from heavy Karazhanbas oil.

Viscous road bitumen is used as binding material for construction and road surfaces.

Production of Bitumen Plant:
Road bitumen, corresponding to ST RK 1373–2013 BITUMEN OIL VISCOUS. Technical specifications. Design capacity up to 400 thousand ton per year. Specific effective activity of natural radionuclides in applied raw materials shall not exceed 740 Bk/kg, this indicator is periodically checked in the laboratory of the Republican State Enterprise on the Right of Economic Use “NCE” (National Center of Expertises), average actual content of specific effective activity in oil – does not exceed 204 Bk/kg.

Road bitumen modified corresponding to ST RK 2534–2014 BITUMES OIL MODIFIED, ROAD. Technical specifications. Design capacity up to 120 thousand ton per year.

Traditional technology of road bitumen production is applied in accordance with the Project, using separate innovative solutions in technological part:

- obtaining modified road bitumen – package plant with design capacity by batch of raw materials up to 120 thousand ton per year. Use of tar is stipulated as raw material, modifier is polymeric SBS modifier. Addition of modifier and stabilizer in the required proportion leads to modified road bitumen of the desired grade;
- technology of formation and packing of road bitumen into bags – “big bags” (1000 kg) and in small piece packing (40 kg), which allows producing and supplying of bitumen to consumers year-round, without use of specialized rail tank cars for delivery.

Gasoline AI-80-K2

TS 38.001165–2014

Indicator name	RD per method	Standard	
		TR TS 013/2011	TS 38.001165–2014
Plumbum mass concentration, mg/dm ³ , no more	GOST R 51942–2010	5	5
Sulfur mass concentration, mg/kg, no more	GOST R 51947-92	500	500
Benzole volume fraction,%, no more	GOST 29040-91		5

Gasoline AI-92-K2

TS 38.001165–2014

Indicator name	RD per method	Standard	
		TR TS 013/2011	TS 38.001165–2014
Plumbum mass concentration, mg/dm ³ , no more	GOST R 51942–2010	5,00	5,00
Sulfur mass concentration, mg/kg, no more	GOST R 52660–2006(EN ISO 20884:2004)	500	500
Benzole volume fraction, %, no more	GOST R EN 12177–2008	5	5

Gasoline AI-95-K2

TS 38.001165–2014

Indicator name	RD per method	Standard	
		TR TS 013/2011	TS 38.001165–2014
Plumbum mass concentration, mg/dm ³ , no more	GOST R 51942–2010	5	5
Sulfur mass concentration, mg/kg, no more	GOST R 52660–2006 (EN ISO 20884:2004)	500	500
Benzole volume fraction, %, no more	GOST R EN 12177–2008	5	5

Gasoline AI-98-K2 (Super-98 leadless)

GOST R 51105-97

Indicator name	RD per method	Standard	
		TR TS 013/2011	GOST R 51105-97
Plumbum mass concentration, mg/dm ³ , no more	28828-90	5	–
Sulfur mass concentration, mg/kg, no more	GOST R 52660–2006(EN ISO 20884:2004)	500	500
Benzole volume fraction, %, no more	GOST 29040-91	5	5

Diesel fuel ДТ-3-K2 (Д3ЭЧ-0,05-40 environmentally friendly)

TS 38.1011348–2003

Indicator name	RD per method	Rate
Sulfur mass concentration: %, no more	GOST R 51947–2002	0.05
Sulfur mass concentration: mg/kg, no more		500

Fuel natural gas

The basic component of natural gas is methane (CH₄) – up to 98%. Heavier hydrocarbons can be included into the composition of natural gas – methane homologs: ethane (C₂H₆), propane (C₃H₈), butane (C₄H₁₀), and other non-hydrocarbon substances: hydrogen (H₂), hydrogen sulfide (H₂S), carbon dioxide (CO₂), nitrogen (N₂), helium (He).

Natural gas has no color and odor. In order to detect a leakage by smell, a small amount of substances with strong unpleasant odor (so-called odorants) is added to gas. Ethyl mercaptan is used as an odorant.

COMPLIANCE WITH THE REQUIREMENTS

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

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.

KMG also conducts periodic inspections of production facilities in order to identify any inconsistencies with legislative requirements and preventive measures to improve operations at the corporate level. Each subsidiary and dependent entity has production control plan and plan of inspections of production facilities in relation to compliance with the environmental laws of the Republic of Kazakhstan at various levels of management, and voluntary environmental audits are conducted at certain production facilities each 5 years in order to determine recommendations for improvement of activity.

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.

According to the results of 2016–2017, there is a tendency on reduction of actually paid penalties for admission of violations of environmental legislation compared with previous years.

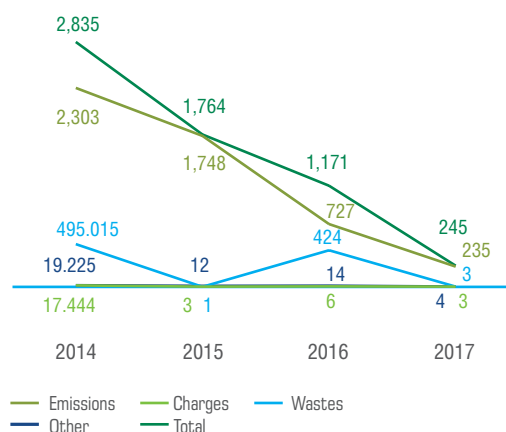
In 2017 total amount of paid penalties was 245 million KZT (1,170 million KZT in 2016, 1,764 million KZT in 2015), including administrative fine, damage compensation and excess payments.

Significant violations are: untimely receipt of permits for emissions into the environment, non-compliance with conditions of environmental management, excessive emissions to the environment, failure to implement waste management plans.

2 cases of non-financial sanctions were fixed in 2017 (6 in 2016).

2 cases with usage of dispute settlement mechanisms were noted in 2017. According to one of them, 49 million KZT was paid for non-compliance with the legislation of 2016 for untimely receipt of an emission permit. In the second case, the proceedings continue. The company won the dispute in the court of first instance, in the result of which the claim in the amount of 953 million KZT was not paid.

Paid environmental fines, mln KZT



Case history

Social and economic effects of modernization of refineries in 2017

GRI 307-1

Atyrau Refinery

Due to the fact that the plant will start production of gasolines and DF of emission classes K4 and K5, content of sulfur and benzole, which are carcinogenic substance, will significantly decrease. The main difference between K4, K5 and K2:

- for gasolines – in the content of sulfur, benzole and aromatic hydrocarbons (sulfur content is 50–100 times lower);
- for diesel fuel – by cetane number, in sulfur content and mass fraction of polycyclic aromatic hydrocarbons.

And the higher the class (K5), the safer is fuel for the environment.

According to plan on reasonable use and saving of water resources for 2017–2021, Atyrau refinery expects an average annual decrease in fresh water consumption by 500 thousand m³, a reduction in effluent discharge by 115 thousand m³.

About 4,000 people involved during implementation of the project in construction and installation work. DCC created 490 new jobs for the subsequent operation.



Residents of village Peretaska, who entered the sanitary protection zone of the CPA and DCC, migrate to safe areas of Atyrau. So, at the end of 2016, resettlement of residents of multi-apartment buildings No. 6, 10, 12, located at Z. Cabdolov Street, was completed. In 2017–2018, this work continues.

Pavlodar Refinery

- Due to the fact that the plant will produce gasoline and diesel fuel of emission class K4 according to the requirements of the Customs Code of the Customs Union, the content of sulfur and benzole, which are carcinogenic substances, will significantly decrease;
- fresh water consumption will remain at the current level of 1.1 m³/year, a reduction of sewage disposal by 360 thousand m³ is expected.

- For the period of construction of new installations, 2,000 people participated in the works, 161 working places were created for local specialists during the operation.

Shymkent Refinery

- Due to the fact that the plant started production of gasoline and diesel fuel of emission class K4, K5 according to the requirements of the Customs Code of the Customs Union, the content of sulfur and benzole, which are carcinogenic substances, has significantly decreased;
- PKOP is expected to reduce freshwater consumption by 743.9 thousand m³;
- up to 4,800 people were involved in the construction period, 445 people were involved in operation.

SUPPLIERS ENVIRONMENTAL ASSESSMENT

(GRI) 103-2, 103-3, 308-1, 308-2

17 PARTNERSHIPS
FOR THE GOALS



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.



Procurement of goods, works and services is carried out in accordance with the procurement rules of “NWF “Samruk-Kazyna” JSC. Potential suppliers are pre-qualified during procurements, including by the criterion “Environmental protection”. The shareholder also approved a list of goods, works and services, purchased from qualified potential suppliers, in 2017.

There is no documented procedure for the environmental assessment of suppliers in the group. However, it is planned to develop a corporate standard for contractor management on HSE issues in 2018. Nowadays the requirements in the area of safety and labor protection, requirements on compliance with environmental safety are included in the obligations of all Counterparties of the KMG. Signing the contract, the suppliers confirm familiarization with the documents of the Management System in the area of HSE.

Impact of suppliers of goods, works and services is taken into account during execution of general environmental impact assessment. Projects are subject to state environmental expertise, all necessary approvals and permissions are received before the commencement of work, taking into account impact and participation of all suppliers of works and services during performance of production operations.

History case



A program on introduction of a scoring system for assessment of safety and labor protection in contract and service organization, performing work at existing facilities of the enterprise, was launched in April 2017, at the Atyrau refinery, within the implementation of project “AMAN”. Five contract organizations took part in the program. Activities of the companies, participating in the program were assessed by following criteria: observance of occupational safety and health regulations, availability of personal protective equipment, qualification level of engineering staff, quality and timely performance of work, labor discipline, and technical equipment.



SOCIAL RESPONSIBILITY

Our employees are our main resource and asset of the company. Increasing their level of professionalism and security, we see positive changes in the results of our activities of the Company and our value for investors.

In the framework of achieving the target functional, the following projects are implemented:

- ◆ *Introduction of a new model for human resource management*
- ◆ *Introduction of a new model of corporate culture*
- ◆ *Introduction of a new model for the management of industrial safety*



EMPLOYMENT

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



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.



Principle 4

Labor: Business communities shall ensure liquidation of all forms of forced or violent labor.

Principle 6

Labor: Business communities shall ensure elimination of discrimination in the area of employment and occupation.



ACCOUNTABILITY

We preserve and create jobs in the framework of our development strategy and opportunities.



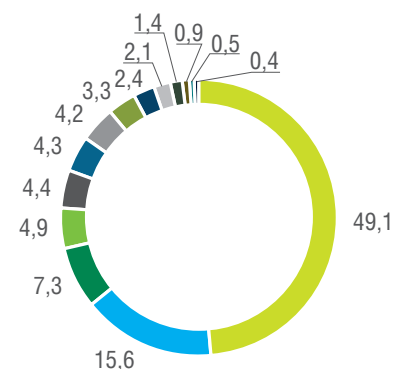
RESPECT FOR HUMAN RIGHTS

We respect and promote the observance of human rights provided by the Constitution of the Republic of Kazakhstan and international instruments, such as Human Rights Universal Declaration.

We do not accept and prohibit the use of child labor.

Our employees are our main value and the main resource, the results of our activity and value, created for investors, directly depend on the level of their qualification and security.

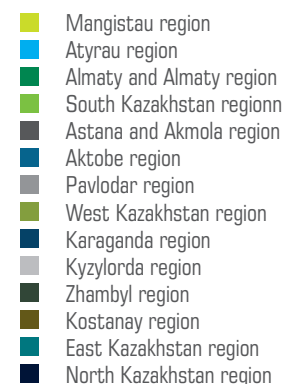
Provision of working places by regions of Kazakhstan, %



We try to attract professional candidates at the labor market, using open and transparent ways, based on the principle of meritocracy, and to provide training for employees, ensure their safety and develop programs for appropriate motivation and development of professionalism.

Number of employees at the end of the reporting period in 2017 was 90,111 people in Group of companies of JSC NC "KazMunayGas" (91,121 people in 2016, 80,131 people in 2015, 86,216 in 2014), outstaffing is 3,118 people.

The share of production personnel is 89.4%, of total number of personnel, 10.6% is administrative personnel (90% and 10% in 2016 respectively). Taking into account that area of the companies' activity is associated with difficult, dangerous and harmful working conditions, share of men is 80.8%, women is 19.2%.



Employees, detailed by gender for 2015–2017, %

Years	2015	2016	2017
Mn	74.8	79	80.8
Women	25.2	21	19.2

In age category main share of employees is represented in group from 31 to 50 years old – 58%, while share of men is 78.9%, women – 21.1%. Number of employees older than 51 years old is 24.5% of total number of staff, while share of men is 83.1%, women – 16.9%. Share of young people under the age of 30 is 17.5% of total number staff, and share of men is 84%, women 16%.

Employees by age groups, %

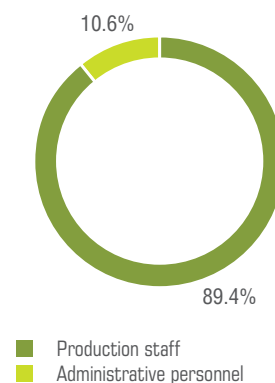
Years	2015	2016	2017
From 30 years old	–	23	17.5
From 31 to 50 years old	–	54	58
More 50 years old	–	23	24.5

Number of newly employed employees is 8,050 people or 9.4% in 2017.

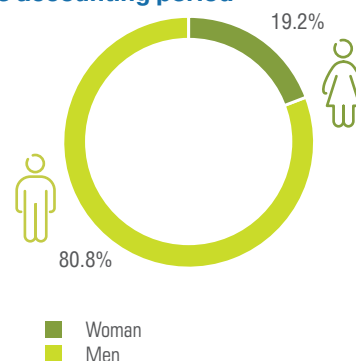
Newly employed employees for 2015–2017, %

2015	2016	2017
23.9	20.7	9.4

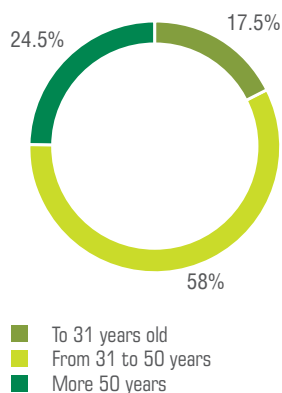
Employees by categories for the accounting period, %



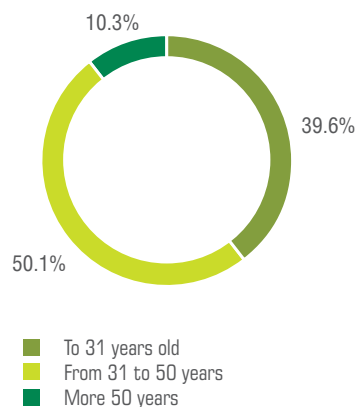
Employees, detailed by gender for the accounting period



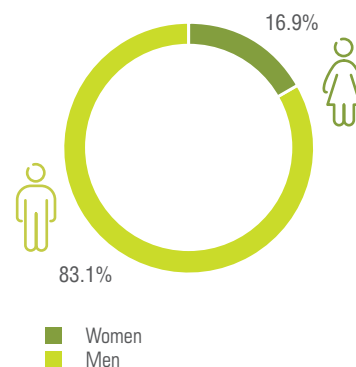
Employees by age groups, %



Newly employed employees by age groups for the accounting period, %



Newly employed employees by gender for the accounting period, %



The number of employees with whom employment was terminated during the reporting period was more 12 thousand people. Fluidity factor by Group of companies KMG was 14% (13.8% in 2016, 11.1% in 2015).

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.

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

Moreover, the Group implements a pension program for non-working pensioners, according to which the employees can get some material support.

In some oilfield services organizations of the Group's, a project on provision of pre-retirement employees with the possibility of early retirement with payment of compensation for employment termination by agreement of the parties, with employees who, have reached retirement age – with compensation payment upon employment termination, is being implemented.

Social support costs for employees of the Group of companies KMG was 18,859,161 thousand KZT (USD 55 million), including social assistance to non-working pensioners.

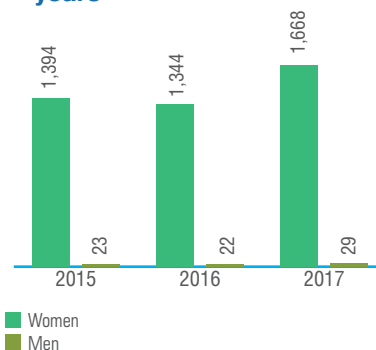
The number of employees on leave for child care without preservation of salary pay at the end of the accounting period was 1,697 people, with share of women 98.3% and 1.7% of men. Women, who are on maternity leave, are more 800.

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.

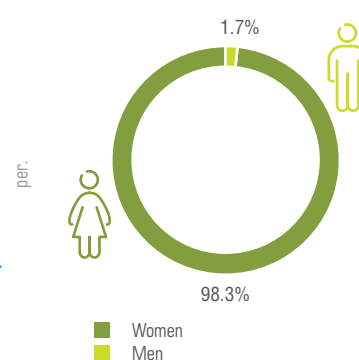
Social support of employees of Group of companies KMG, bln KZT



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



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



HUMAN RIGHTS

GR1 103-1, 103-2, 103-3, 406-1, 407-1, 408-1



Achieve gender equality and empower all women and girls.



Reduce inequality within and among countries.



Principle 1
Human Rights: business communities shall support and respect protection of internationally recognized human rights.
Principle 2
Human Rights: business communities shall make sure that they are contributory infringer of human rights.



We strictly honour the fundamental human rights. We recognize the undeniable importance of granting equal rights to everyone.

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

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. There were no facts of discrimination during the accounting period.

According to the labour legislation, any 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.

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.

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

58,838 people is number of employees of the Group, covered by collective agreements in 2017 (54,197 – 2015, 58,658 – 2016)

The company's interaction with trade unions is carried out within the framework of the social partnership, established



Principle 3

Labour: business communities shall ensure freedom of association and effective recognition of right on collective bargaining.

Principle 5

Labour: business communities shall ensure prohibition of child labour.

Principle 6

Labour: business communities shall ensure elimination of discrimination in employment and occupation.



History case



A tripartite commission for social partnership held a meeting at Akimat of Mangistauskaya oblast to consider the appeal of the regional trade union center to suspend the implementation of the Early Termination of Employment Agreements programme with the employees in the oilfield services companies of KMG, with the agreement of the parties with payment of compensation.

Based on the results of the examination, the commission approved further implementation of this Program, taking into account the voluntariness of termination of employment contracts and absence of violations of labor legislation.

In order to monitor the social situation in the Group's subsidiaries, tools have been developed for the "Social Climate Monitoring" (MSC), allowing timely response to emergency situations, identifying the causes of their occurrence, assigning responsible and taking appropriate measures to solve problems. In 2017, MSC was introduced in 13 SDEs.

History case



Social stability rating

According to the research of the Social Stability Rating (RCC), conducted by the Social Partnership Center of Samruk-Kazyna JSC, RCC of KMG has increased from 61 to 76 percent from 2013 to 2017, and is at "above average" level.

According to the results of RCC study on all identified alarm zones in KMG and selected SDEs, action plans for ensuring social stability are developed and updated.

The plan of KMG activities to ensure social stability for 2016–2018 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.).

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.

STAFF DEVELOPMENT

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



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



Respect for Human Rights

We involve openly and transparently professional candidates from the labor market and develop our employees on the basis of the principle of meritocracy.

We create an effective system of employee motivation and development.
Develop corporate culture

KMG places special importance to the development of human capital in the regions of its presence. To achieve the set strategic goals and objectives, KMG provides training and development of personnel on an annual basis and implements new approaches and methods of training and development of employees of the Group of companies KMG.

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 companies KMG since 2016 “70/20/10 – on job training/internal training/external training”. As part of the introduction of the new training model in 2017, work was continued on the introduction of the institute of internal trainers for the Group of companies KMG. Thus, in-house trainers held 24 seminars, attended by over 650 people.

Moreover, in 2017, in order to exchange and study best practices, acquire professional knowledge and skills, the Concept of the “Success Formula” probation program for the Group of companies KMG was developed, in which 39 employees from 8 companies passed a probation in 6 companies of KMG SDEs in 2017. At the same time, a Memorandum on Cooperation was signed with KazMunayGas EP JSC in the area of probation organization for employees of the Group of companies KMG in 2017.

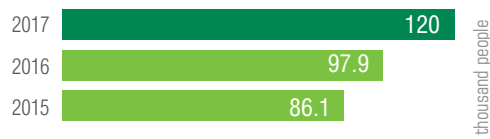
An agreement was reached with the companies Karachaganak Petroleum Operating LLP, LLP NII TDB, “Professional Geo Solutions” LLP, “Kazakhoil-Aktobe” LLP on sending employees for probation in 2018.

Moreover, development programs for top managers of corporate center KMG and SDEs (CEO-1, CEO-2) “Single Development Program”, as well as for directors and their deputies and participants of the Single Personnel Reserve “Effective leader” were approved by the decision of the KMG Personnel Committee.

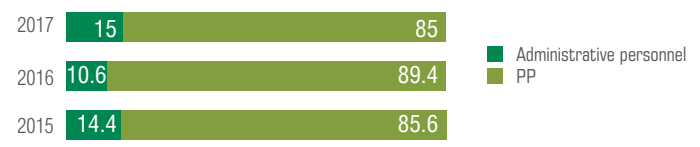
In addition to these projects, KMG annually increases the number of trained employees. So, in 2017, KMG **trained over 120 thousand people** for a total of **5.6 billion KZT**, which is on 15% higher than in the previous year. The increase in number of trained and expenses are associated with launch and implementation of the above programs. Moreover, it should be noted that in 2017, KMG’s subsidiary KMG International NV, Caspian Oil and Gas Company, included in the report for 2016, were not included in the report for the year 2016 due to their absence in the RoK. This year, the company which 50% or more shares belong to KMG, were included to the code.

14% are women, 86% are men among the number of trained workers. At the same time, 15% of the trained is administrative and management personnel, 85% is production personnel.

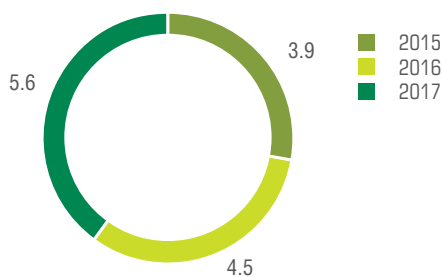
Total number of trained employees by years, thousand people



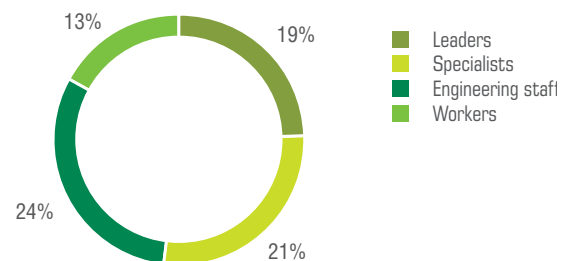
Total number of trained employees by employees categories, %



Expenses for personnel development, bln KZT



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



Number of employees, who passed education detailed by gender, %

Years	2015	2016	2017
Men	86.5	88	86
Women	13.5	12	14

Share of employees, who received compulsory education, was 36.7%. At the same time, 41.6% of the trainees received training by working professions, and 5.6% – training, related to production. 50% of all expenses were spent on training in these subjects.

The average annual number of academic hours per trained worker is 16.1 hours, including 15.8 hours for one man and 18.3 hours for a woman (33.6 hours in 2016).

It is noted that training and development of employees is carried out regardless of gender and position.

The share of employees, passed training on certification programs, was 0.1%.

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.

Its 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.

Trainings for reservists were conducted with the involvement of the best Kazakh and Russian trainers in 2017 and were aimed at development of personal business competences and professional knowledge. Within the framework of the program “Effective Leader”, approved by the Personnel Committee of KMG, 28 reservists were trained. Total 54 reservists are planned to be trained in this program by 9 subjects.

In addition to training programs, two-diploma EMBA programs have been designed and conducted for

reservists. In 2017, 6 reservists successfully completed EMBA program, 9 continue their studies under IIF-RGA program and 18 reservists under IIF-SPTU program.

Within the framework of the probation program, 7 reservists were trained in such companies as General Electric and Rosneft, as well as at the University of Aberdeen, the oil capital of the Europe.

In order to train young qualified personnel for the oil and gas industry and trying to assist KMG in development of human capital in the regions of presence, work on organization of dual training, main principle of which is training at the enterprise – 60% of the time, and 40% of the time in college is performed.

So, on the basis of the Pavlodar petrochemical plant in 2017 only 50 students from the Pavlodar Chemical and Mechanical College were trained: 32 fourth-year students and 18 third-year students.

15 students among 32 fourth-year students, passed training in specialty “Technology of oil and gas processing” (hereinafter referred to as TOGP), 17 – in specialty “Maintenance and repair of equipment” (hereinafter – MRE). 27 graduates of PHMK were employed at the plant.

Dual training of students of the Atyrau University of Oil and Gas and High School APEC Petrotechnic LLP in the area of Oil and Gas Fields Exploitation was conducted in the pilot mode at Embamunaygas JSC since 2015. 69 students of the above-mentioned educational institutions have assed a dual training since the launch of the project, and nowadays more 24 students are being trained in dual training.

We conduct a purposeful work on training of young specialists. Agreements were concluded on probation of students with specialized universities of the country (KBTU, KazNTU named after K. Satpaev, Atyrau Institute of Oil and Gas, Aktau State University named after Sh. Esenov, KIMEP, ENU named after L. Gumilev, etc.).

List of implemented programmes on education and advanced training of employees

1. Adaptive programme for new employees
2. Management skills
3. Staff management
4. Internal control and audit. Risks management.
5. Integrated management systems, standards ISO and OHSAS
6. Environment, HSE
7. Kazakhstani content and procurement of goods, services and works
8. Economic and finances
9. Legislation
10. Corporate management. Projects management.
11. Document support
12. Information technologies
13. Language education
14. Business skills
15. Education of mediation programme, negotiating process
16. Production (RD, transportation, gas business, processing and marketing, service projects)
17. Apprenticeship for a job
18. Master's programme
19. Probation
20. Participation in conferences, symposiums, forums

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.

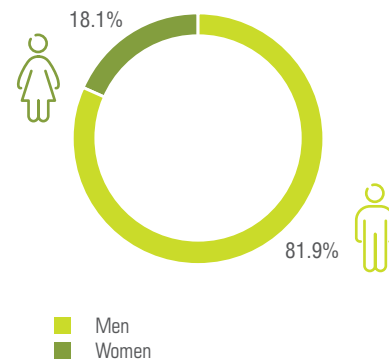
Performance evaluation is carried out on a quarterly basis, according to purposes of the year, and has specific quantitative results from 1.5 to 0 of the official salary as a quarterly bonus payment.

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.

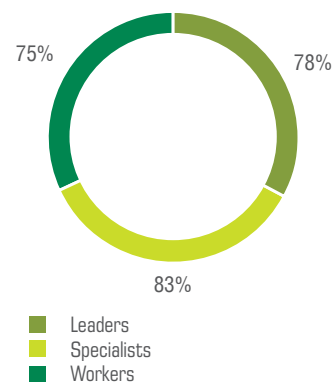
An annual assessment of employees' activity for 2016 was conducted in 2017, according to which 14% of the employees of KMG corporate center received a recommendation for enrolment to personnel reserve, 12% – promotion, and 32% – review of the official salary.

77% of all employees were evaluated for the accounting period.

Performance evaluation detailed by gender, %



Performance evaluation detailed by employees' categories, %



EQUAL POSSIBILITIES AND OUR MARKET PRESENCE

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



Reduce inequality within and among countries.



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 business areas Exploration and Production, 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 coefficient is in Mangistauskaya and Atyrauskaya oblasts.

The ratio of salary of initial level in the Group to the minimum salary, established by the national legislation for 2017, is in the range from 6:1 to 8:1 (2016-5:1 to 10:1).

The ratio of senior management in regions of presence, employed among the representatives of the local population is 72% (in 2016 – 89%).

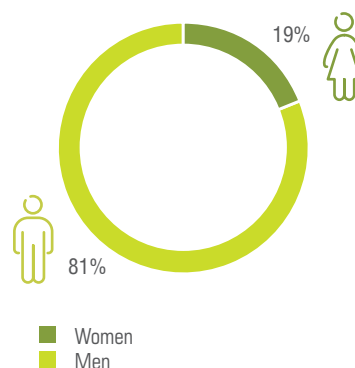
The ratio of employees in the executive team is 10% of the total number of employees, including women 19%, men 81%.

Share of specialists is 20% of total number of employees.

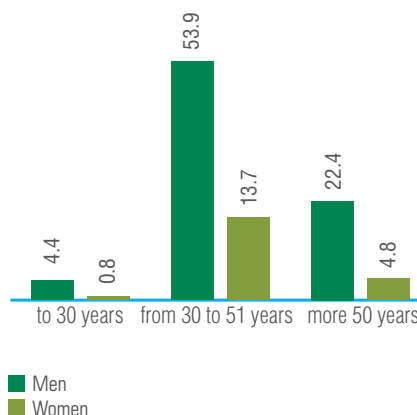
Share of workers is 70% of total number of employees.

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 in the same position receive the same

Share of leaders detailed by gender, %



Share of leaders by age, %



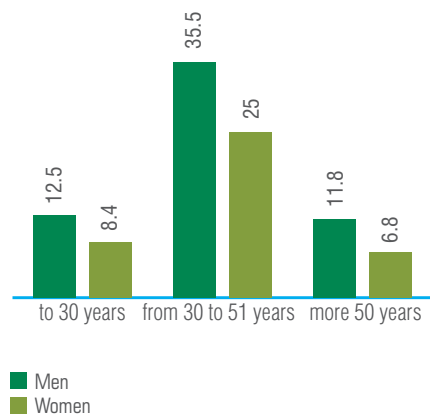
salary and other payments as stipulated by the rules of payment in the organization.

To improve the payment system, we have 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.

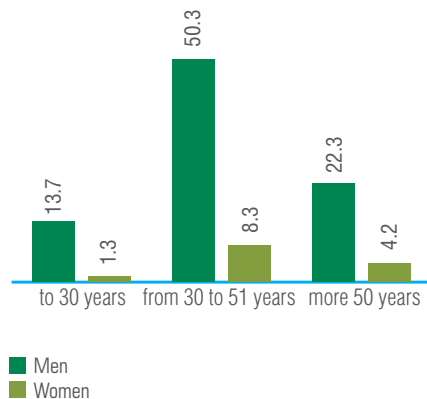
The payroll system for the supreme management body and the management team is focused on performance, motivation, productivity and efficiency, and includes elements of short-term remuneration based on the performance of key performance indicators. In accordance with the best world practices, performance indicators of managers reflect economic, environmental and social objectives of the Group.

Within the framework of the Transformation Program, project on the assessment of the correspondence of senior employees to the occupied positions (Job Matching) was continued. Recommendations were developed for improvement of the payment system in the Group, based on the results of this project.

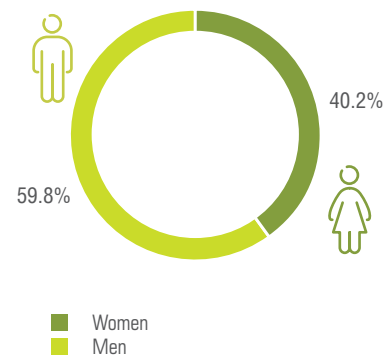
Share of specialists by age, %



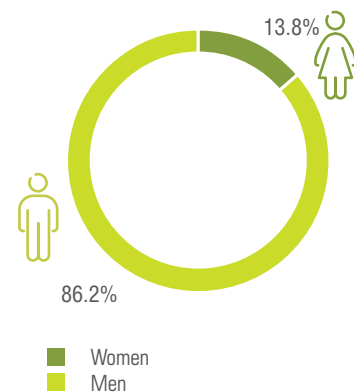
Share of workers by age, %



Share of specialists detailed by gender, %



Share of workers detailed by gender, %





History case

KazMunayGaz JSC continues the project in the area of human resources management “Job Matching”. This is a project on assessment of candidates to meeting the requirements of positions with the target functional. The process consists of two parts: approval of target functional and evaluation of candidates. The evaluation of candidates will take place in two stages: the first – the candidates from the Group of companies KMG are considered, the second stage – if there are less than 2 candidates, external candidates are considered. The commissions are formed from the representatives of the management of Samruk-Kazyna and KazMunayGas.

An info session was held in 2017, dedicated to the ongoing program for recruitment in accordance with the requirements to positions. The meeting with the staff was held by the Chairman of the Board Sauat Mynbayev and Vice President on Human Resource Management Serik Abdenov. According to Sauat Mynbayev, the Job Matching project is necessary, and most importantly, timely. The staff of professionals, of those who seek for further development, and acquirement of new skills – is a guarantee of the competitive advantage of any company. Based on the results of the first wave of the project, the competitive selection covered 25 positions of CEO-1, CEO-2 level, on which 63 candidates applied. In the result of the competitive procedures, 17 positions were retained by the current employees, and 8 new employees took up positions. One of them

is Dauren Karabaev, executive vice president, financial director: “Prior to KMG, I worked in international company abroad. The Job Matching contest and the process were very similar to the one that exists in international companies. It included several types of tests, on professional knowledge, psychological, critical thinking, language skills, and interviews with board members. There was a detailed and scrupulous approach, a detailed description of the position and tasks. Which, in addition to current activities, also included close interaction with the transformation program on construction of more efficient, simple and economical organization of KMG. Now we are replicating this procedure throughout the organization, with the same open and understandable approach for all participants”.

In addition to 25 CEO-1 and CEO-2 positions in 2017, the Job Matching procedure was conducted for 113 positions, including the positions of the heads of the structural subdivisions of corporate functions, divisions Transportation, Oil refining and marketing, line employees of the Internal Audit Service and management of the subsidiary of the Research Institute “Production and Drilling Technology”.



OUR COMMUNITIES

GRI 103-1, 103-2, 413-1, 413-2, OG-10, OG 12

We contribute to the development of the regions of presence and maintain an ongoing dialogue with key stakeholders on all substantive issues.

The allocation of significant funds for the development of the region of production presence is provided for Contracts for subsoil use of the company's subsidiaries. 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.

We carry out systematic work on interaction with the population. We provide social assistance to needy strata of the population; contribute to the development of local infrastructure.

Oilfield services companies, located in Mangistauskiy region, may have a potential negative impact on local communities. Due to loss, these companies are taking measures to reduce the number, which could negatively affect the labour market in the region. At the same time, most of the released personnel (about 70%) can be employed in contract organizations.

Interaction with the public and meetings with local communities on environmental issues is carried out through public hearings on EIA projects before any economic activity, construction or reconstruction and modernization of production facilities. In cooperation with the Orhusskiy Centres, consultative meetings are held with the local community and public organizations.

Annually more than 100 public hearings are held in the Group of companies KMG.

Moreover, KMG supports interaction with all stakeholders to improve the emergency response system, involving local communities in the development of response plans. If production work is carried out in the waters of the Caspian Sea, direct participation and involvement of local communities in the development of plans is carried out only during the compilation of project materials (public hearings). Whole system of emergency response of the forthcoming project is disclosed during the hearings with the participation of population, public organizations and state bodies.

The Akimats of rural and settlement districts (21 districts of South Kazakhstan, Zhambylskaya and Almatinskaya oblasts) conducted explanatory work with land users/ owners of land plots, whose land plots are in the protection zone and in zone of minimum distances of the Gas Pipeline

(areas A, B, C) with the delivery of notices for the safe operation of the gas pipeline. (2015 – 104 meetings, 2016 – 104 meetings, 2017 – 104 meetings).

Regular briefings and meetings of the population are held with the participation of representatives of the local executive bodies, emergency authorities and the Ministry of Internal Affairs for the safe use of gas in everyday life.

The Group provides timely information about the activities, environmental impact and health effects of the organizations of the Group to the public in the media. Weekly summaries/reports on ecology and nature management are published. The local and national media publish articles on the environmental activities of the Group's enterprises.

In addition, the population has the opportunity to provide feedback through feedback on the company's official website, hot lines, mail. Public organizations and private individuals have the right to appeal to authorized and judicial bodies in accordance with the procedure established by law.

In the KMG Group, there is no significant negative environmental impact on local communities of production facilities. The impact of production facilities on the environment and public health is within the limits of permissible standards, approved by the authorized bodies in draft emission standards. Emissions, discharges and disposal of waste are carried out on the basis of permits for emissions into the environment.

All production processes are carried out in a safe manner and in compliance with legal requirements.

During the accounting period, one significant (longterm, from 2015 to 2017) litigation in "Asian Gas Pipeline" LLP was noted on land use issue during the construction of "C" line of the Kazakhstan – China main pipeline. The land user did not agree with the proposed amount of compensation. The claims of the Partnership are satisfied. Currently, there is an enforcement proceeding to return the amount, previously charged from the Partnership.

Due to the construction of the Deep Conversion Complex (DCC) on Atyrau Refinery, only 194 real estate objects were transferred to the sanitary protection zone (SPZ) of the plant, 188 of which are subject to resettlement (according to paragraph 5 of Section 5 of the Sanitary Regulations and norms of the Republic of Kazakhstan, approved by the Order of the Minister of National Economy of the Republic of Kazakhstan No. 237 dated March 20, 2015):

Case history



JSC “Ozenmunaygaz” annually allocates 900 million KZT to social programs fund for the development of infrastructure in Zhanaozen (700 million KZT) and Karakiyanskiy district (200 million KZT). Thus, 2,700 million KZT was allocated within the period of 2015–2017:

- Construction, expansion and repair of roads – 1 054 million KZT;
- Improvement of intradomestic territories – 117 million KZT;
- Assistance in employment in Zhanaozen, ensuring creation of new jobs – 400 million KZT;

- Construction of open beach – 263 million KZT;
- Reconstruction of the tuberculosis hospital – 116 million KZT;
- Creation of social jobs – 200 million KZT;
- Acquisition of apartments for low-income workers – 464 million KZT;
- Acquisition of transport for health care and local police service – 86 million KZT.

- ◆ 133 land plots in regions of village Peretaska and Khimposelok;
- ◆ 3 dormitories (55 apartments) on Z. Cabdolov Street.

The construction project of DCC at the Atyrau refinery is included in the state and sectoral programs: GPIIR 2015–2019, the Republican Industrialization Map 2015–2019. Within its framework, it is planned to increase the production of high-octane gasoline, jet fuel and diesel fuel, depth of oil refining, achievement of standards for motor

fuels K4, K5. Construction of new modern processing facilities for the processing of heavy oil residues is required for this.

Currently, the implementation of plan of measures for the resettlement of residents, falling under the territory of the sanitary protection zone of the Atyrau refinery, is being continued. The work on resettlement will be completed in the 1st quarter of 2018.

SAFETY AT WORK

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

Compliance with the highest security standards is a critical engine of production success and one of the KMG’s strategic goals. We develop our safety culture in the KMG

Group of companies in order to achieve and maintain high production rates. We are not limited to regulations and procedures, but change culture of doing business



Ensure healthy lives and promote well-being for all at all ages.



Make cities and human settlements inclusive, safe, resilient and sustainable.



We ensure safety and labor protection of our employees; perform wellness programmes and render social support to employees.



when it comes to risks management in our activities, our capabilities, our technologies and our security programs. We are moving from a business model, corresponding to standards, to proactive model, for which common standards, processes and procedures are required, and are foundation of such changes – our step forward.

Having collected data for several years, we understood the main factors, affecting the safety indicators of our operations. Problems with internal procedures, training and competence of employees are key factors that have a direct impact on the reliability of our production. Having armed with new data, we are creating targeted programs to ensure reliability, which will cover human factors during modernization.

Our task is to make so that KMG employees and contractors return home unharmed on a daily basis. We will never stop working to achieve our key goal – complete absence of injuries, accidents and incidents.

Activity of any company and its contract organizations are potentially dangerous for people and can cause loss of ability to work or loss of assets, decrease in production efficiency, financial losses and may adversely affect the company's reputation as a whole. Therefore, HSE management issues are among the most priority business processes of our Company.

We continue to follow the established priorities and approaches, corresponding to the best world practices, such as:

- ◆ Priority of human life and health value in relation to the results of production activities;
- ◆ Involvement and training of managers at all levels in HSE issues;
- ◆ Personal responsibility of each employee for compliance with safety and health requirements;
- ◆ Creation of a proactive safety culture to prevent accidents and incidents;
- ◆ Effective communication between all stakeholders;
- ◆ Ensuring the safe performance of work and liquidation of unsafe behavior.

2017 was a year of significant improvements in occupational safety and health and continuation of the way on improvement of the safety culture in the Group of companies KMG.

The main program on attraction of line managers to the process of HSE management was the Program of Behavioral Observations on Safety in Work, implemented in 2017.

The purpose of the program is:

- ◆ Formation and enhancement of culture of safe behavior in the workplace;
- ◆ Identification and elimination of dangerous actions and conditions before an accident occurs;
- ◆ Identification of obstacles preventing the implementation of safe work practices;
- ◆ Influence on the behavior of employees and their attitude to safety and labor protection issues;
- ◆ Demonstration of commitment to safety and health issues on the part of management;
- ◆ Prevention of potential accidents and reduction of work-related injuries.

The program was created for an open dialogue on safety and labor protection between the line management and field workers. It is known, that this programme is one of the best world practices, and based on the results of 2017, it has a beneficial effect on safety culture and reduction of injuries in the Group of companies. The quantitative indicator of conducted behavioral safety observations was taken into account during calculation of the functional efficiency for supervisors of production SDEs.

One of the key security indicators, Lost Workday Case ratio (LTIR), was entered into corporate efficiency, and was cascaded to KMG's subsidiaries and dependent entities. LTIR ratio is set as the KPI for SDEs in 2018. Functional KPI is being introduced for supervisors, namely enhanced KPI on behavioral safety surveillance and driving safety. Execution of Corrective Action Plan, developed on the basis of the hazardous behavior of workers, identified in 2017, is also taken into account.

A three-tiered system of HSE committees has been approved since 2017. The committees included senior management, production managers and HSE heads. The purpose of creation of system of the committees is definition of a vision, approval of KPI system, strategy and basic HSE guidance documents. Committees are designed for solution of following tasks:

- ◆ Provision of senior management perspective on HSE;
- ◆ Creation of a vision of the Group in the area of health and safety, industrial safety and environmental protection with specific goals and objectives;
- ◆ Ensure the involvement of management of production units in the development of targeted HSE programs and provision of necessary resources for implementation of five-year plan;
- ◆ Consultations on risks and opportunities in the area of HSE.

Achievements

The overall merit of all workers of the Group of companies KMG is the excellent results, obtained in accounting on accidents and incidents over the past three years, as well as adoption of appropriate measures, based on identification of root causes. This fact is evidenced by an annual reduction in injuries in the workplace. Positive changes were achieved in the part of introduction of the best world practices. We are moving in the right direction, but we are still far from our target indicators “zero incidents, accidents and spills”, and more efforts are required in order to draw attention of all employees to security issues.

In order to improve safety culture and reduce level of injuries in the workplace, the following work was done:

- ◆ Implementation of Work Safety Behavior Monitoring Program – 85,301 conducted programmes for the Group.
- ◆ Development of seven corporate documents based on the world practice, providing a consistent and ubiquitous approach to issues of safety and labour protection throughout the Group of companies.
- ◆ Conduction of comprehensive audits in SDEs with the highest level of injuries.
- ◆ Conduction of on-site presentations in order to train employees to new security programs, top management – the importance of their involvement in security processes.
- ◆ The overall percentage of the implementation of the 5-year Roadmap, containing strategic HSE initiatives, was 82% for 2017.
- ◆ Holding of the 18th Annual Forum of Directors of safety and labour protection services.
- ◆ The III Annual Forum of Directors General in the area of labour safety and protection was held under the auspices “Outstanding Leadership in Occupational Safety and Health”.
- ◆ As part of the campaign on arise of the awareness on use of seat belts, about 250 employees of corporate centres in Astana have tried the simulator “Konvinser” in action. More than 1,000 employees took direct part in the presentations. Then “Konvinser” was sent to Mangistauskiy region for further campaigning in the regions. As of April 2018 about 1,500 employees took part in presentation of the simulator in Mangistauskiy region, more 1,000 have experienced the action of “Konvinser”.
- ◆ III annual contest of the Chairman of the Board of KMG “The best innovative ideas and practices in the area of health, safety and environmental protection of the Group of companies JSC NC “KazMunayGas” was held.
- ◆ Development of mobile applications “8 Golden Rules”, “Safety Alphabet”, “10 Steps to Improvement” by employees of “Intergas Central Asia”.

The Group’s commitment to security issues and introduction of the world’s best practices has maintained a position of high level: 90% participation of the first leaders in safety training activities, adherence to the world standards, and the most important – recognition of direct benefit from high labor protection indicators for production efficiency, that results to high financial indicators.

Thus, visiting meeting of the Board of Directors of JSC NC “KazMunayGas” was held in Atyrau on the basis of Embamunaygas JSC (subsidiary of KazMunayGas Exploration Production JSC) for the first time in the history of KazMunayGas. As any other meetings in the Company, the meeting was began with the consideration of the paramount issue – issue of occupational and environment safety.

The third annual forum of general directors concerning “Outstanding leadership in the area of safety and labor protection” was held on June 28, 2017. Within the framework of the event, a solemn ceremony of awarding certificates of KMG’s SDEs for the best performance in the area of labor protection was held on the results of 2016 with the participation of the Chairman of the Board of JSC NC KazMunayGas S. M. Mynbayev. The winners were selected on the basis of the assessment of safety and health indicators (FAR, LTIR, MVCR), number of employees, ratio of labor protection to total number of employees of the company; taking into account introduction of corporate standards and initiatives, the risks of the company in the area of labor protection, as well as use of best practices. As a result, the heads of the companies “Intergas Central Asia”, Pavlodar Refinery, “Embamunaygas”, “Oil Transport Corporation” and “Munai telekom” received awards.

On the initiative of the KMG, a simulator of seat belts “Convincer” was developed for the first time in Kazakhstan, which simulates a low-speed road crash, which allows you to feel the impact force in an accident and realize the need for using seat belts. This simulator was presented to top management at the General Directors Forum and received comprehensive support from the first leaders of the Group of companies KMG. It was decided to purchase the “Konvinser” for a permanent demonstration of the need to use seat belts for employees.

KMG supports the vision and goals, as well as the initiatives of the International Association of Oil and Gas Producers (IOGP) in the area of improvement of processes of labor protection, industrial safety and environmental protection (HSE) in the workplace.

Since 2014, the KMG initiated the practice on accounting in accordance with the requirements and standards of IOGP, benchmarking with similar oil and gas companies to identify

areas for improvement in health, safety and environmental issues, as well as to reduce accident rates and industrial incidents. KMG became full member of the IOGP in

January 2018, and participated in the accounting on safety and labor protection for the first time.

Safety and labor protection indicators

During the accounting year, we lost 5 employees. Total number of death decreased in 2017 compared to 2016 – 5 and 7 cases, respectively. (4 cases in 2015).

As mentioned earlier, LTIR rate has been taken into account in calculating of corporate KPI by HSE since 2017. Purpose for 2017 was an indicator of 0.42 per 1 million spent man-hours. The fact of 2017 was = 0.39 (accidents, related to labour activity in accordance with the legislation of the Republic of Kazakhstan per 1 million man-hours), which is 20% lower than in 2016. Thus, there is an annual decrease in the number of accidents with loss of working time – 87 in 2016 and 71 in 2017 (99 accidents in 2015). LTIR was 0.43 at the end of 2017 according to IOGP.

An integral part of the Company's work is to ensure a stable improvement of the company's employees safety on the roads. Much work is being done in this area.

The Group's total accident rate at the end of 2017 was 0.49 accidents per 1 million passed kilometres. The number of road accidents increased from 71 to 89 cases. (64 accidents in 2015).

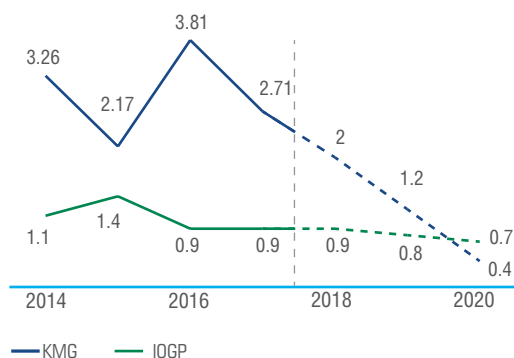
The ratio of the total number of employees to one HNS employee has improved by 7% (decreased from 1:87 to 1:81).

Main security indicators

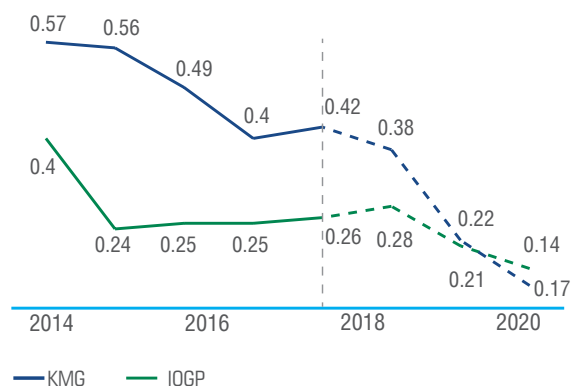
Main security indicators	2015	2016	2017
Man-hours of work (mln)	181.2	175.0	170
Passed km (mln)	149.9	157.6	178.3
Fatal cases, related to labor activity	4	7	5
Fatal cases on 100 mln man-hours	2.17	4.00	2.89
Lost Workday Case	99	87	71
Accidents (according to the legislation of the RoK) per 1 mln man-hour	0.56	0.49	0.39
Road accidents	66	71	89
Road accidents per 1 mln travelled km	0.40	0.43	0.49

Future areas of work

Lost Workday Case Rate



Rate of fatal cases, related to labor activity



Future areas of work

The work without accidents and industrial accidents in the Group of companies depends not only on the targeted actions of KMG and SDE employees, but also on contractors, whose total number is more than 2 times the number of employees of the Company. At the same time, the likelihood of occurrence of risks of accidents and incidents is in proportional dependence. The requirements to contractor organizations on strictly compliance with corporate provisions and rules on safety and health are an integral part of an effective management system in the area of Labor protection and environment KMG.

Thus, it was decided to start work with contractors, which are outside the KMG group, on creation of culture of responsible behavior in the area of HSE in 2018. One of the first stages of the work is the transparency of the provision of information on incidents during performance of work at production facilities (contract areas) of KMG SDEs. From next year, representatives of contract organizations will personally participate in major events on HSE, which will lay the foundation for formation of a safety culture among contractors.

The philosophy of safe driving says that 95% of all traffic accidents can be avoided if you follow the rules and practices of safe driving.

It is planned to introduce a Program of behavioral observations on driving safety in 2018 for formation a culture of safe driving, creation of an open dialogue between line management and drivers, and, a clear understanding of the driver's primary task – to bring passengers to their destination safely. We believe that this program is one of the world's best practices, which will make a significant contribution to improvement of transport security in the Company. It is also planned to implement and develop safe driving programs.

According to the results of inspections, it was revealed that the level of employee awareness at production is very low. Therefore, one of the priority areas of work is development and implementation of a program on improvement of level of awareness of workers in the area, including following main activities: quarterly messages from the Chairman of the Management Board to employees for the purpose of improvement of safety culture, distribution of brochures on various topics, and development of information interactive mobile application by HSE.



HEALTH PROTECTION

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



Ensure healthy lives and promote well-being for all at all ages.



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.

Number of days of incapacity for work due to diseases of employees of SDEs was 224.565 thousand days in 2017, which is on 19.311 thousand days less than in 2016, or 7.9%. Number of mortality cases, not related to injuries among SDE employees decreased by 15 cases compared to 2017, or by 36.5%.

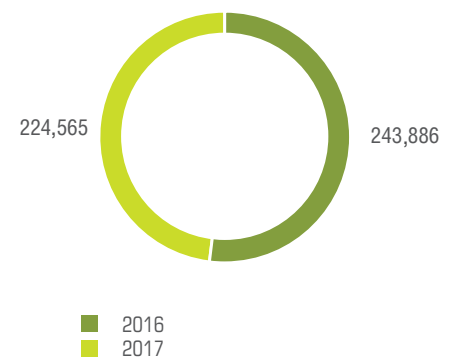
Within the framework of the implementation of the Roadmap on improvement of labor and the environment protection in the Group of companies JSC NC “KazMunayGas” – 2020, approved by the decision of the Board on 27.09.2016 (Minutes No. 39), corporate health programs are introduced by the KMG, first of all, related to reduction of workers diseases and mortality, not related to injuries.

Corporate initiative “10 Steps to health Improvement” and internal regulatory document “Regulations for organization of emergency medical care in the Group of companies JSC NC” KazMunayGas”, whose main tasks are establishment of requirements for organization of work on provision of workers with emergency medical care, equipping of medical posts and content of emergency medical response plan.

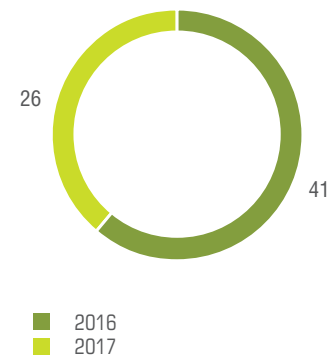
Following activities were performed for improvement and effective management in the area of health protection and labor hygiene:

- 1) functional group of the KMG on health protection and labor hygiene was established for coordination of SDEs specialists; workshop “Certification of Workplaces by working conditions” was held on November 20, 2016, on the basis of MMG, which resulted in a decision, aimed at improvement of the situation;
- 2) six audits were conducted in SDEs to ensure compliance with health and safety requirements, industrial and transport security, comprehensive inspections with the participation of members on health protection and labor hygiene to share the experience;
- 3) production areas and shops, recreation rooms for workers, household premises, canteens and medical aid points were surveyed, 281 recommendations were issued according to the results of the inspection and revealed deviations from the norms;
- 4) action plans for 2017 on improvement of health of identified sick patients on the basis of the final act were developed on the basis of professional examinations of employees in SDE.

Number of days of incapacity for work due to diseases



Number of mortality cases, not related to injuries



It is planned to work on the following priority areas in 2018:

1. Development and implementation of workplace wellness programs of KMG, including determination of total risk of cardiovascular diseases (CVD).
2. Screening among employees of subsidiaries and dependent entities.
3. Audits in SDEs for control and monitoring of health protection and labour hygiene issues.
4. Organization of emergency medical care in the Group of companies JSC NC "KazMunayGas".
5. Operation of health protection and labour hygiene.
6. Workshop (training) on labour and health protection of subsidiaries and dependent entities of JSC NC "KMG" concerning Occupational Pathology and Certification of Workplaces by Working Conditions.

In 2017 collective agreements were concluded between the Employer and Trade Unions in main SDEs, where issues of labor protection and health protection were reflected.

Measures on safety of working places, as well as social guarantees, benefits and compensations, aimed at the improvement of employees health (financial assistance for treatment, organization of medical care, promotion of a healthy lifestyle, organization of sporting events) are stipulated in collective agreements.

Local trade unions of employees are entitled to organize joint actions with the employer to ensure the requirements of labor protection, prevent occupational injuries and occupational diseases, as well as conduct inspections of conditions and labor protection at workplaces.

In order to ensure safe working conditions at production facilities, Attestation Commissions are established for certification of production facilities by working conditions.

Cases of occupational morbidity are not registered.

PREPARATION AND TRAINING BY HSE



Ensure healthy lives and promote well-being for all at all ages.



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

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



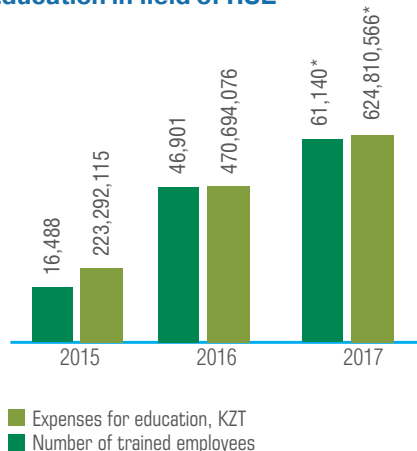
Despite the importance of technologies, intended for risks mitigation, no technological innovation can solve the problem of rash decisions. Critical factor is still people. Therefore, ensure the competence of employees is an integral part of development.

Great importance in the Group of companies KMG is paid to training in the area of HSE. Compared to previous accounting periods of 2015/2016, number of employees, who passes training, has increased, as well as the costs for these purposes.

In general, the dynamic growth of indicators indicates that the need for training on HSE issues remains a popular one.

Taking into account the specific character of oil and gas sector of the Republic of Kazakhstan, as well as mandatory requirements of the legislation of the Republic of Kazakhstan, related to compulsory education, training

Education in field of HSE



* in the summary data there is no information on KMG EP (except for LLP "JV Kazgermunai").

and professional development of personnel, areas of safety and labor protection, industrial and fire safety are more important.

56 thousand employees passed mandatory training during the accounting period, which is 92% of total number of trained personnel of HSE, in the amount of 490 million KZT.

In total, 61,140 employees of the Group of companies KMG were trained in 2017 for 625 million KZT.

Among the employees of the Group of companies KMG, trained HSE in 2017, the highest level is 1,3 thousand people and the average level is 59,8 thousand people.

In order to improve the process of training and development, formation and maintenance of the required

level of personnel qualifications, as well as effective use of budget funds, a training model “70/20/10 – on job training/ internal/external training” was introduced in the Group of companies KMG.

Thus, some KMG subsidiaries and dependent entities organize and conduct training on occupational safety and health, industrial and fire safety on the basis of their own Training Combines and centers, employing employees among line managers and highly qualified professionals as lecturers and instructors.

A new approach in training allows not only improvement of skills and knowledge, but also increase initiative of the experienced employees to mentoring, improvement of internal communications, thereby disclosing the potential of young professionals to be the best in their profession.

INDUSTRIAL SECURITY AND PRODUCTION INTEGRITY MANAGEMENT

(GRI) 103-2, 103-3, OG-13



Ensure healthy lives and promote well-being for all at all ages.



Make cities and human settlements inclusive, safe, resilient and sustainable.

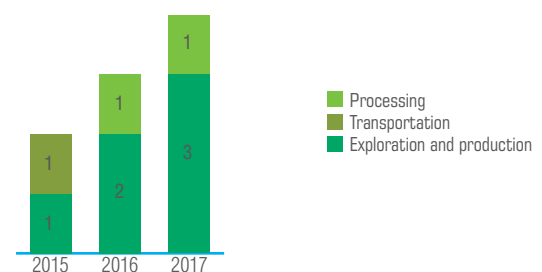


Continuous improvement of industrial safety management system is one of the main priorities of the Company's work. The Company continued to conduct systemic work in the accounting period, taking necessary measures to prevent accidents and incidents at all hazardous production facilities and reducing level of accidents in 2017, the Company performs 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.

There were 4 anthropogenic accidents without human losses and with minimum total damage in the amount 8,192 million KZT in 2017, at the Company's production facilities. Based on the nature of these incidents, two of

Number of accidents (including anthropogenic) on production facilities



them are oil and gas water manifestations (GNVP), and two other are related to depressurization of technical devices, release of hazardous substances (gas and petroleum products) and subsequent combustion.

Technical investigations of the causes of accidents were carried out in accordance with the requirements of the legislation in the area of industrial safety, for all accidents, occurred in 2017, as well as immediate and systemic

causes of accidents were determined together with Corrective action plan at the corporate level, followed by the sending of “Accident Reports” to all SDEs of the Company.

Key activity on improvement of industrial safety

Oil refining

Atyrau Refinery and Pavlodar Refinery completed transition to increased overhaul period during operation of process units from 1 year to 3–4 years in 2017.

The following digital solutions and automation tools have been implemented by HONEYWELL (USA) in 2017 to provide the required level of maintenance, reliability and mechanical integrity of the equipment at Atyrau Refinery and Pavlodar Refinery:

- maintenance and equipment repair management system (IBM MAXIMO). This system is designed for automation of standard work processes and solution of operational problems in management of repairs and maintenance of equipment at the refinery, taking into account creation of all repair operating charts with necessary materials, operational tasks on launch and stop of the equipment, material consumption rates for current, insurance and emergency supplies;
- inspections and ensure of equipment reliability management system (Meridium APM). This system is designed for automation of mandatory periodic technical monitoring of equipment status, analysis of current status, causes of failures, risks of extension of repair intervals, optimization of repair programs,

taking into account the real state of the equipment, the requirements to reliability of its operation for the performance of its functions;

- equipment monitoring management system (Uniformance Asset Sentinel). This system allows us to describe mathematically calculations of dynamic characteristics of equipment of various types, such as electric motors, conveyors, pumps, compressors, fans, smoke exhausters, furnaces, boilers, heat exchangers, filters, reactors, control systems, shut-off valves, analyzers, instrumentation and to perform these calculations in mode, close to the real-time mode for determination of both current and forecast state on the basis of detection of symptoms of developing defects;
- Downtime Reporting System/Functionality. This functionality will automatically record both total downtime and partial downtime, associated with loss of productivity and loss of product quality. To classify causes of downtime, analyze the efficiency and reliability of technological process, determine areas for improvement of reliability of technological process, elimination of bottlenecks and reduction of losses due to downtime;

Gas transportation

In order to ensure stable transportation of Kazakhstani gas for export and avoid gas shortage in the southern regions of the country during heating period, a large-scale reconstruction of the underground gas storage facility “Bozoy” is implemented.

Within the framework of the project technological scheme of underground gas storage facility “Bozoy” was upgraded with modern “Gas drying unit” for improvement of gas quality, its purification from mechanical impurities and moisture. Performed works, allowed to increase the reliability and safety of the gas storage facility, as well as to extend duration of main gas pipelines.

Gas drying unit enables the transportation of natural gas from Bozoy gas storage facility through main gas pipelines Bukhara – Ural and Beineu – Bozoy – Shymkent to consumers in Aktyubinskaya oblast and southern regions of Kazakhstan, ensuring high-quality, and uninterrupted gas

supply during the heating season. Moreover, international transit of commercial gas to the Russian Federation, the Republic of Uzbekistan and the People’s Republic of China will be provided.

The built complex is unique by its volume and productivity. There were no such gas infrastructure facilities in Kazakhstan. The most modern equipment from Europe and Ukraine was used during project implementation.

CONSUMER HEALTH AND SAFETY

(GRI) 103-1, 103-2, 103-3, 416-1, 416-2



Ensure healthy lives and promote well-being for all at all ages.



As the consumer of natural gas products is the population, the company KazTransGaz-Aimak JSC monitors, analyses accidents among consumers, using gas at home, and takes preventive measures in part of proclamation, awareness, instruction and training of the population to safety requirements during operation inside house equipment. A raid was also conducted with representatives of

emergency situations concerning “Safe use of natural gas in everyday life”, videos are being broadcasted. Despite the fact that maintenance of indoor equipment, maintenance of gas consuming systems is serviced by outsourcing company, KTGA performs the following activities for safety and health purposes of consumer.

	Videos on security (number of watches)	Raids/ meetings	Running letters	Articles in mass media	Plots
Activities on awareness raising of consumers	3,030	350	2,115	69	64

One of the important priorities of “KazMunaiGaz Onimderi” LLP is to provide the consumer with high-quality products (oil products), meeting the requirements of the declared standards. In order to provide consumers with petroleum products of assured quality and enhance the company’s image, the Company has developed its own system of end-to-end quality control of petroleum products, which covers all stages of fuel movement – from receiving, storing to selling and selling petroleum products at filling stations.

Quality control of oil products is carried out by testing laboratories in Astana, Almaty and Atyrau cities, accredited in the state system of accreditation of the Republic of Kazakhstan for compliance with the requirements of GOST ISO/IEC 17025–2009. They are equipped with a single system of technical control, which allows monitoring of all qualitative parameters of oil products for compliance with the requirements of the Technical Regulations of the Customs Union and regulatory documentation for products, and can render services on test of oil products to third parties.

Laboratories of “KazMunayGas Onimderi” LLP carried out quality control of oil products during receiving, storage and sale of petroleum products. According to the results of tests of oil samples of fuel there were no inconsistencies to the requirements of technical regulations of the Customs Union “On the requirements for automobile and aviation gasoline, diesel and marine fuel, jet fuel and fuel oil” and regulatory documents for products, led to warnings, fines or penalties from the authorized state bodies. Not only laboratory employees were involved in quality control of oil products, but also employees of production branches.

There is a 24-hour customer support line Call-center in “KazMunayGas Onimderi” LLP. On all complaints, received by the Call Center, direct work is performed until the issue is fully resolved. When complaints about the quality of fuel are received, work is organized on commissioning sampling of petroleum products with the participation of the client, who is given the opportunity to check the fuel quality in the laboratory of the Partnership or in any independent accredited laboratory. The results of the tests (reports, test reports) are sent to customers in time. Based on the results of fuel tests, carried out both in the laboratories of the Partnership and in independent laboratories, the compliance of fuel with the requirements of regulatory documentation for products was established. Cases of non-compliance with the requirements of legislation and voluntary codes, regarding the impact of products and services on health and safety, have not been established. During the accounting period, inconsistencies related to the impact of products and services on the health and safety of the consumer, were not recorded.



PRODUCTION DEVELOPMENT

An important event for us was the completion of the modernization of the Pavlodar petrochemical plant to install new equipment at the Atyrau oil refinery. In the second half of 2018 it is planned to complete the modernization of the Shymkent oil refinery. Completion of the modernization of the Kazakhstani refineries will allow the domestic market of the RK to supply oil products by the end of 2018. This will also create the conditions for switching to the production of automobile fuel according to K4, K5 standards.

Within the framework of the program of Transformation of basic business functions and implementation of ERP, reengineering of production business processes for management of maintenance and repair of production assets is carried out.



FUEL SALES IN 2017

GRI 102-2, 102-6, 102-43, 102-44



Ensure access to affordable, reliable, sustainable and modern energy for all.



RESPECTFULNESS

We respect rights and interests of concerned parties, which follow from the legislation, concluded contracts, or indirectly within the framework of business relations.

2017 is key year, because just in this period main works on modernization of the refineries of the KMG Group of companies were completed. Annual scheduled preventive maintenance works were carried out according to the schedule of PMW, established by the Ministry of Energy.

Repair work resulted in low level of fuel supplies in the domestic market, due to which gasoline was sold in limited numbers in autumn 2017, by cards and coupons in some regions of Kazakhstan, namely in South Kazakhstan, East Kazakhstan, Almatinskaya and Kyzylordinskaya oblasts.

Moreover, during repair works a detail was damaged on hydrogen production unit on October 20, at Pavlodar refinery, for which special qualification of the welder, special equipment and preparation before welding were required. Local workers performed welded works with violation of technology. In addition, the responsible officials did not inform about this in due course, and tried to repair it on their own, which further damage the equipment more. This detail is made on a limited number of factories in the world. Foreign experts were invited to conduct a survey, which revealed the inadequacy of the damaged equipment. As a result, a new detail was ordered in the UK, and it took about month for its transportation, installation and commissioning. As a consequence, Chief engineer and Technical Director of Pavlodar Refinery were dismissed; Director General of the plant Shukhrat Dunbai left at his own accord.

During shortage of fuel, other refineries operated in normal mode at full capacity. However, before completion of the modernization of three oil refineries, Kazakhstan was forced to import up to 30% of gasoline and up to 15% of diesel fuel from Russia. In order to prevent a shortage of diesel fuel in the country's regions, import contracts were signed with Russian companies LUKOIL, Gazprom, FortelInvest, and Rosneft towards KazMunayGaz Onimderi LLP in the amount of up to 100 thousand ton.

During the reporting period, the price for off-season diesel fuel was no more than 155–160 KZT per liter. Low price for Kazakh gasoline is one of the risks of wholesale export of fuel abroad. Given open borders and a single economic space, the risk of fuel flows will remain in future. The state and market participants face the task on establishment of price parity between the prices of Russian and Kazakhstan retail gasoline, which are also influenced by the price in Uzbekistan.

Kazakhstani retail fuel market is represented by a lot of companies, such as Gazprom Neft, Helios and Sinooil. Share of LLP "KazMunayGas Onimderi" on the market was about 14% in 2017.

During 2017 there was appreciation for the retail price for fuel, which was stipulated by several factors:

- ◆ growth of wholesale prices for petroleum products in Russia by 7% – from 517 to 555 dollars per ton;
- ◆ depreciation of KZT against USD by about 9% (from 312 to 340 KZT for USD1);
- ◆ weakening of demand during repair work at the refinery.

There was some tension among retailers in relation to sanctions of the Kazakhstani Antimonopoly Agency for rising of retail prices to 155–160 KZT per liter AI-92 in 2017, which could be interpreted as price collusion. However, the Ministry of Energy of the Republic of Kazakhstan and the Committee for Regulation of Natural Monopolies, Competition Protection and Consumer Rights of the Republic of Kazakhstan signed a joint protocol on imports from the Russian Federation on October 4. Thus, the increased price for fuel was interpreted as "factor that equally affects all market participants" and was not a price collusion of suppliers.

KMG carried out the necessary work on change and agreement of terms of repair of the refinery, including Pavlodar refinery with the Ministry of Energy of the Republic of Kazakhstan in May 2017. There shall be an

early replenishment of stocks by imports from Russia. However, this did not happen sufficiently because of price disbalance with the neighboring country: in view of the high price on fuels and lubricants in Russia, it was not profitable for market participants to buy and to sell at low prices in Kazakhstan, in the result of which there was a significant decrease in inventories. Partly this is due to the fact that Kazakhstan does not have a mechanism for determination of price and establishment of price parity. Thus, the fundamental reason was the absence of state policy on regulation of prices, despite the fact that the price for fuel, like any product, shall be established on a market basis. As of 2017, the retail price for fuels and lubricants in Kazakhstan is significantly lower than in neighboring Russia, Uzbekistan and Kyrgyzstan. Prices for petroleum products in Kazakhstan are among the lowest prices in the world, not only in the CIS countries. Prices on the domestic market also differ depending on regions.

This fact is also reflected in profitability of subsoil users. To ensure the loading of the refinery with raw materials in the long term, it is also necessary that subsoil users can obtain an income, comparable to the revenue, when they send oil for export. The shortage of income by extraction enterprises limits them in expansion of their resource base and increasing exploration costs. If oil is not exported, and directed to domestic processing with reduced profitability, and the product flows into neighbouring countries, this does not benefit either domestic consumers or suppliers. The same factors affect the direction of petrochemicals: in order to invest in the development of petrochemicals and improve refining technologies, investors shall understand pricing and possibility of obtaining a sufficient rate of profitability.

LEGAL ACTIONS AND MARKET REGULATION

GRI 103-1, 103-2, 103-3, 206-1, 419-1



TRANSPARENCY
We disclose information, provided by law and our documents in time, taking into account norms on protection of confidential information.

In 2017, based on the results of the investigation of violations of the antimonopoly legislation, KREMZK Department in Astana executed three protocols on administrative offenses by fuel types, by which “KazMunayGaz Onimderi” LLP is charged with violation of subparagraph 1) of paragraph 1 of Article 170 of the Business Code of the Republic of Kazakhstan regarding “establishment or) maintenance of prices or other conditions for the acquisition or sale of goods”. The above-mentioned protocols were transferred to the Specialized Inter-District Administrative Court of Astana, which issued

a decision to prosecute “KazMunayGaz Onimderi” LLP for committing offenses under the Article 159 Part 2 of the Code of the Republic of Kazakhstan on Administrative Violations and subject to administrative penalty in the form of a fine to the budget of the state. The above-mentioned decisions have not entered into force. Disagreeing with the conclusions of the court, “KazMunayGaz Onimderi” LLP filed appeals against the decisions of the court of first instance. At the time of this report preparation, appeals are in Astana city court under review.

PROJECTS ON GASIFICATION

GRI 103-1, 103-2, 103-3, 201-1



Ensure access to affordable, reliable, sustainable and modern energy for all.



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.



Natural gas is the most environmentally friendly type of fuel relative to other types of petroleum products. This is especially in light of the environmental sensitivity of the regions and climate change on the planet, since natural gas does not form smoke during combustion and does

not leave ash after it, thus causing significantly less impact on the earth's atmosphere. Gasification of the consumer sector and transport sector of the regions is one of the top priorities in combating climate change and reduction of the negative impact on the environment.

Gasification of the regions in the RoK

Nowadays 10 regions of the Republic of Kazakhstan are equipped with the gas supply systems. The main gas consumers in the country are industrial enterprises, which account for more 70% of total consumption. At the same time, "General Scheme of Gasification of the Republic of Kazakhstan", approved in 2014, sets a goal on provision of additional gas to more 600 population centers in Kazakhstan, which will lead to increase in consumption of natural gas to 18 billion cubic meters per year by 2030.

Provision of gas supply to the population is a priority task of KMG. However, connection of small population centers to gas supply system leads to significant capital expenditures.

Nowadays JSC "KazTransGas Aimak" successfully implements a large investment projects in the regions of Kazakhstan under the formula "tariffs in exchange for investments". The company has already replaced thousands of kilometers of worn-out gas pipelines with new, high-quality and reliable ones.

Within the framework of investment programs for 2015–2021, it is planned to build gas pipelines with total length of about 5,000 km, including over 3,955 thousand km of gas pipelines, laid in 2015–2017:

- ◆ 5 population centers of Kyzylordinskaya oblast (Aralsk city, Ayteke bi village, Shieli village, Zhanakorgan village and Baikonurty);
- ◆ 10 population centers in Aktybinskaya oblast (Bogoslovka, Komsomol, Enbek, Taldysai, Kosestek, Akkuduk, Irgiz, Altyndy, Will, Zhaysan);
- ◆ 8 population centers in Kostanayskaya oblast (Kachar, Oktyabrsky, Nauchnoe-Toguzak, Antonovka, Alchanovka, Voroshilovka, Karabalyk, Boskol);
- ◆ 5 population centers in Mangistauskaya oblast (Zharm, Baskuduk, Batyr, Borankul, Beineu), continuation of gasification – in Beineu village and Batyr district of the Munayli district.

"KazTransGas Aimak" JSC will continue work on gasification of S. Shapagatov village, v. Mangistau, Beineu, Fort-Shevchenko of Mangistauskaya oblast, as well as Almaty and Almatinskaya oblast in the framework of approved investment programs in 2018–2021. At the same time more 740 km of new gas pipelines will be laid. Total amount of investment programs of "KazTransGas Aimak" JSC on gasification of regions and modernization of gas distribution systems in Kazakhstan for 2015–2021 is more 122 billion KZT.

Gasification of transport sector



Ensure access to affordable, reliable, sustainable and modern energy for all.



It is known that main air pollutant is transport sector, accounting up to 60% of all emissions. During analysis of the results of studies on toxicity of cars, it has been proved that in case of usage of natural gas instead of oil fuel, the release of toxic substances into the environment decreases approximately in 8 times by carbon monoxide, 2 times by nitrogen oxides, 3 times by hydrocarbons, in 9 times by smoke, and soot, which is typical for diesel engines, is not formed, corresponds to the EURO standard –5, 6. In terms of safety, methane is almost 2 times lighter than air; therefore, it immediately evaporates when depressurized, and does not settle as distinguished from other fuels. Moreover, resistance to low temperatures and concentration indicators of gases ignition is significantly

higher than of gasoline, diesel fuel and liquefied hydrocarbon gas. Due to the fact that the gas is stored in cylinders under high pressure, the possibility of getting an air into them, which is necessary for ignition or explosion, is excluded, and also the possibility of manipulation with the octane number and theft of fuel are excluded.

"KazTransGaz Onimderi" LLP performs systematic work on re-equipment of its own transport for usage of gas engine fuel. Within the period from 2015 to 2017, 409 transport units were reequipped to gasoline engines, including 72 units during 2017, which promoted reduction of fuel costs on about 150 million KZT and reduction of pollutants emissions into the atmosphere.

Also, one of the activities in this area is construction of NGV refill station – NGVRS (gas refilling stations). Total number of NGVRS in the Republic of Kazakhstan is 15 units, 7 units belong to KTG group, including 1 NGVRS, commissioned in 2017. Works on expansion of filling infrastructure in the Republic of Kazakhstan is continuing, negotiations are performed with the local executive bodies. A memorandum of cooperation was concluded with Gazprom PJSC, CNPC and KMG JSC on development of filling infrastructure on CNG and LNG at ITC Western Europe – Western China. Work on preparation to international motor rally at CNG and LNG on this route is carried out.

Main consumers of methane are cars, working daily, with large runs and high fuel consumption. First of all, these are buses and municipal equipment. So, for example, about 700 buses are operated in Almaty on natural gas, which has a significant effect in reduction of pollution emissions.

According to economic, ecological, resource and technical criteria, methane will remain the best motor fuel for a long time. Usage of marketable gas will provide a socio-economic effect, which can be obtained in the result of transport transfer to natural gas, taking into

account savings in maintenance of transport of municipal and private parks, ensuring import substitution of fuel, improving the environment and health of the population, fulfilling the obligations of the Republic of Kazakhstan in the area of struggle against global warming and other socio-economic indicators of the development of regions and the country as a whole, which can be taken into account during adoption of measures of state support and promotion of transition of Kazakhstani transport to use of natural gas as motor fuel.

Strategic medium-term plans of KazTransGas within gasification projects of the country include:

- ◆ Project implementation “Construction of 100 NGV refill stations”
- ◆ Selective commercialization of LNG production technology at GDS of the unified gas supply system of the Republic of Kazakhstan
- ◆ Development of LNG/CNG production-sale infrastructure on the international transport route “Western Europe – Western China”
- ◆ Implementation of the project “air monitoring of ground objects” (small aviation).

INNOVATIONS AND OPERATING EFFICIENCY DEVELOPMENT



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.



Ensure sustainable consumption and production patterns.



The innovative and technological development of KMG is aimed at development of potential through improvement of the efficiency of production activities, expressed in growth of labor productivity and achievement of target values of the Company's strategic indicators by main business sectors.

Nowadays most of the developed oil and gas fields of KMG are at mature stage of development. In this regard, work on solution of most relevant issues in liquid hydrocarbon production sector: enhanced oil recovery, production intensification, elimination of complications during underground repair of well, as well as complications during transportation of process fluids.

Scientific Research Institute “Technologies of Exploration and Production”

Foundation of the company's scientific and innovation infrastructure is KazMunayGas Research and Development Institute of Production and Drilling Technologies (KMG's Research Institute) and Scientific and Technical Center

of KazTransOil JSC. Research institutes of KMG conduct research and pilot-industrial tests on technologies for increasing of production at mature fields of the Company. Scientific Research Institute “Technologies of Exploration

and Production" (SRI TEP) is flagship of innovative and technological development of KMG projects, its activities are focused on monitoring of geological, geophysical and geological information bases, conducting laboratory research in the field of geology, geophysics and production technology. Also, KMG's Research Institute is center of competences by problems of oil and gas production, and also forms a supervising system, covering all stages of detailed control over the development of the field, which allows systematizing information on life cycles of the field and ensuring an increase of the efficiency of other developed oil and gas fields of KMG.

In hydrocarbon exploration and production sector, the following tasks are defined:

1. Increasing the efficiency of geological exploration by attracting new methods and technologies.
2. Conducting research works to study prospective plots in order to expand territories for geological exploration planning.
3. Improving management efficiency of exploration and development of deposits system.
4. Development of its own competence center in the area of drilling and production technologies.
5. Development of new technologies for intensification of tributaries and enhanced oil recovery from reservoirs.
6. Increasing the efficiency of development of large oil and gas projects.
7. Modernization of field equipment.

Nowadays problems of oil pipelines and gas pipelines safety, energy intensity and resource intensity during their operation, timely diagnostics and search for new corrosion-resistant materials, modern methods for cleaning of main pipelines and tanks are important for the company in the oil and gas transportation sector. Prospective areas are projects on production, transportation and marketing of liquefied gas, coal methane, synthetic liquid hydrocarbons, gas chemical products and energy production, using gas.

Following tasks have been identified in oil and gas transportation sector:

1. Technical re-equipment of production facilities (pipelines, pumping stations, compressor stations, underground gas storage facilities), using modern advanced energy and resource-saving technologies.
2. Introduction of modern technologies for cleaning of main oil pipelines and tanks.
3. Increase of researches and introduction of advanced methods and technologies on increase of anticorrosion stability of pipelines.
4. Study and application of the world experience in the area of innovative technologies for operation and enhancement of safety of main gas pipelines and gas distribution networks.
5. Conducting researches on improvement of energy efficiency.



Key areas for increase of the Company's competitiveness and ensure state interests in oil refining and petrochemical sector are development of innovations and technological modernization of its own refining capacities at home and abroad. In the near future, KMG will continue to work on such tasks as: further expansion of range of petrochemical products, improvement of energy efficiency of production processes, development of human resources, involved in operation of modernized production facilities.

Following tasks have been identified in oil refining and petrochemical sector:

1. Introduction of advanced technologies of hydrotreating, catalytic cracking, alkylation, isomerization, hydrotreatment in the framework of modernization of the Company's refining capacities.
2. Production of basic petrochemical products (benzole, paraxylene) with high added value on the basis of Atyrau refinery.
3. Production of new nomenclature of products.
4. Conduction of the research on reduction of energy intensity and resource intensity, increase of labor productivity, reduction of technological losses.
5. Increase the efficiency of operating costs and qualification of production personnel.
6. Introduction of advanced marketing and technological tools for KMG brand promotion in domestic and foreign markets.

Following tasks have been identified in service sector:

1. Introduction of advanced technologies and creation of technical base, ensuring effective implementation of oil and gas projects.
2. Development of international cooperation in the area of innovation and technology transfer in service sector.
3. Analysis of the world experience and the practices in the development of service and logistics infrastructure.

DIGITAL OILFIELDS

KMG continued to implement Digital oil field project, launched in 2015, in 2017, on the basis of UAZ field in EmbaMunayGaz JSC in Atyrauskaya oblast, at 14 fields, such as Uzen, Karazhanbas, Akshabulak, and the Provinskaya group of fields. Digital oil field is an automated control system for oil and gas industry, which makes it possible to achieve its maximum efficiency by integrating disparate systems into a single integrated information system.

KMG presented a digital oil field project at exhibition of digital technologies, organized by the Ministry of Information and Communications of the Republic of Kazakhstan in the framework of the Republican Digitalization Meeting with the participation of the Head of State in September 2017.

Also, Digital oil field Project won the IX All-Russian contest "Top 10 IT Projects in the Oil and Gas Industry", established by the Ministry of Communications and Mass Media of the Russian Federation, the results of which were solemnly announced on September 14 in Saint Petersburg.

Technology of digital oil oil field supposes installation of equipment, which will take parameters and broadcast them in online mode remotely to the control room, where the operator can quickly make a decision at all stages of oil production. All information is sent to Center for Visualization of Production Processes in Embamunaygas JSC and to the Competence Center of RDI in Astana, where it is also analysed and long-term planning is based on it. Work of underground and ground equipment on the deposit is regulated by control stations; the information is transmitted in current continuous mode. A specially developed and implemented software product processes this information,

and transfers it to different levels: from production operator at the field to the national company. Technical development of the field is carried out by Kazakhstan specialists.

Since the beginning of the project, it automated the production of oil and gas, provide additional growth in oil production, reduce the recovery time of the well, increase inter-repair period of wells, and significantly improvement of energy efficiency. Potential economic benefits due to stabilization of total production and energy efficiency are estimated around 30 billion KZT by preliminary calculations.

Development and implementation of modern integrated production management system, includes the following for the analysis and visualization of oil production processes:

- ◆ remote monitoring of oil and gas production facilities;
- ◆ identification of possible risks during construction of wells;
- ◆ real-time analysis and visualization of drilling processes in real time, using specialized software products;
- ◆ conduction of analytical work, implementation of recommendations with subsequent visualization for making decisions on improvement of processes and increasing efficiency during development of digital deposits;
- ◆ visualization of information data and processes on deposits;
- ◆ identification of problems and inconsistencies during monitoring of oil and gas production facilities;
- ◆ analysis of development and operational control of deposits in order to develop recommendations for improvement of work;
- ◆ study and introduction of the experience of foreign scientific and design organizations on improvement of processes in the area of digital deposits.

Innovations in KazTransGas

9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



Ensure sustainable consumption and production patterns.



The Scientific and Technical Council of KazTransGas provides collegial discussion of issues in the area of formation and implementation of scientific, technical and innovative activities of the enterprise. In 2017, seven meetings of STC KTG were conducted, where 12 issues were considered and approved, including 6 issues of innovation development. For example:

- ◆ Increase of the efficiency of use of dismantled pipes and quality of overhaul of linear part of the main pipelines: issue on reuse of pipes has been taken into consideration in the result.
- ◆ Protection of gas pipelines, operating in corrosive environments: a decision was made to conduct pilot industrial tests on application of electrochemical protection of the main and distribution gas pipelines in 2018.
- ◆ Discussion of the technology “Production of synthetic hydrocarbons from natural gas”, presented in the Russian pavilion Expo-2017.

Ceremony of Expo presentation

Opening exposition at the official ceremony with the participation of the top management of the KazMunayGas group, Sauat Mynbayev noted that the oil and gas, in which production KazMunayGas is engaged, play an important role in the economic development of Kazakhstan. Traditional energy carriers will remain the main component of its growth for a long time. This imposes a special responsibility on KMG. “We understand that on our actions depends, in what will live future generations of people. The issues of sustainable development, innovative approaches to development of deposits, modern solutions of problems on energy saving and energy efficiency, environmental safety come to the forefront” – he noted.

“We tried to make our exposition interesting for a wide range of visitors of the exhibition, equipped it with a modern cinema hall, interactive displays, presented samples of equipment for production of alternative types of energy,

- ◆ Estimation of prospects of production and commercialization of coalbed methane in the Sherubainurinsky coal-bearing area of Karagandinsky basin: 98% is methane inflow, core analysis data, fuel and energy resources and estimated reserves allow a high assessment of the project’s prospects and the possibility of commercial coalbed methane production. The work on legislative support of activities on exploration and production of coalbed methane has been carried out: measures on regulation of exploration and production activities of coalbed methane, and the possibilities for financing geological exploration works. In order to develop projects on coalbed methane, negotiations on joint cooperation with the companies SNK Guanghei and Datang, ArcelorMittal Temirtau JSC, Samruk-Kazyna Invest JSC are carried out.



which – just imagine – we are also engaged in,” – said the Chairman of the Board of KazMunayGas in his speech.

Expo technologies/Innovation technologies application

After completion of Expo-2017, the Ministry of Energy of the Republic of Kazakhstan created an expert working group on the evaluation of new technologies, presented in international pavilions, concerning possibility of their usage at enterprises of Kazakhstani energy companies, including representatives of KMG Group of companies. In the result of this work, a number of innovative technologies, presented in international pavilions of the exhibition, were selected in a number of enterprises of KazMunayGas group, such as KazTransOil, KazTransGas, Mangistaumunaygas, and Urikhtau Operating. In particular, the organizations confirmed the possibility of usage of

such technologies as intelligent heat supply systems, ball valves for pipelines, graphite lamps, wind-resistant solar concentrators, solar heating and cooling systems for domestic production facilities, equipped with wind generators and photovoltaic panels, and mobile solar power plants. According to the results of estimate, a number of projects were selected for implementation at the enterprises of KMG Group of companies. Nowadays, work on the consideration of the possibility of using of turbo-expanders at the facilities of JSC “KazTransGas”, mobile wastewater treatment complexes and complex of treatment facilities “Velkinmyaki” in JSC “Mangistaumunaygas”,

EXPOSITION OF KAZMUNAYGAS “OUR JOURNEY”

17 PARTNERSHIPS
FOR THE GOALS



Strengthening of means for achievement of sustainable development and activation of the mechanisms of the global partnership in favor of the sustainable development.



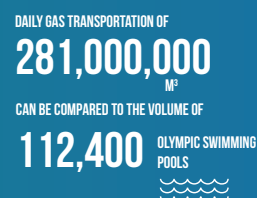
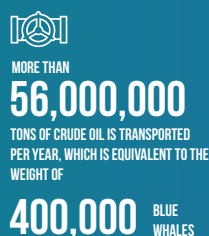
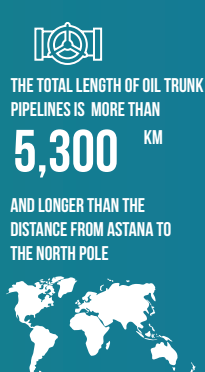
GRI 102-44

Development of our civilization means an increasing demand for energy. The wheels of the economy depend on oil and gas, allowing them to spin – ensuring the supply of energy provides an opportunity for growth. Oil and gas are the energy and memory of the past of our planet. Energy, which people extracted from the depths of the earth, represented by large system organization. This energy, due to intellectual and technological potential, has become an integral part of every person's life. And no matter how we are strive for a green future, just oil and gas that have become the most important aspect of the technological progress of modern times. Oil is not only the raw material for the fuel of our cars, but also it is a component for the production of plastic and polyethylene, pharmaceutical products, automotive industry, pesticides, adhesives, detergents, dye pigments and lubricants, and much more. Allowing mankind to move at the same speeds as now, oil still has huge unexplored horizons of prospects for use. Gas is the most environmentally friendly type of hydrocarbons and the best bridge in transition from the century of hydrocarbons to the age of renewable energy. Useful hydrocarbon minerals, being a limited resource on the planet, are the most valuable impetus to the development of the mankind.

Recognizing responsibility for changes, taking place in the world, its impact on the society, economy of Kazakhstan and the environment, national oil and gas operator KazMunayGaz implements and introduces the best practices in the area of sustainable development. In order to make this development more sustainable, the mankind shall learn to reasonable usages of the riches of nature and to take care of its ability to recover and prosper. Responsible management put a special emphasis on attitudes to safety of people, placing the highest demands on workers at all levels. Care of the environment is continuously practiced, which is a limited resource, requiring special respect and care. “Our Way” exposition shows our commitment and leadership to all the best undertakings of the Expo in covering of the achievements of the mankind in the area of Energy of the Future.

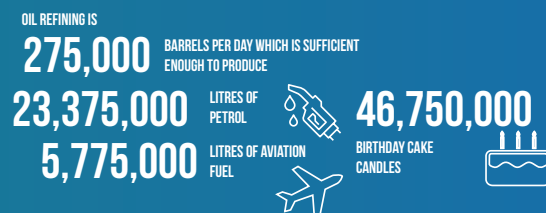
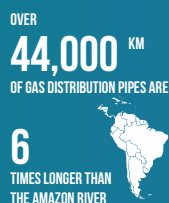
Group of companies KazMunayGas acted as one of the main strategic sponsors at the international specialized exhibition Astana Expo-2017, and also presented its exposition “Our Way”. KazMunayGas, being complete vertically integrated Oil and Gas Company, represents an amazing network of large-scale technological infrastructure; this is the national asset of Kazakhstan. Exposition “Our Way” acquainted visitors with the life cycle of oil and gas – from its exploration to refueling gasoline in tank of cars, from its history to values and sustainable development. Oil and gas are main energy raw materials of people of Kazakhstan. Subject of the exposition also presented innovative technologies of renewable sources – solar, wind and geothermal energy, which are developed in “Kazakh-British University of Technology” JSC, which is a subsidiary of KazMunayGas. The exposition included three conceptual thematic zones: past, present and future.

The “Achievements” zone presented interesting information about the scale of the giant oil and gas industry, the history and heritage of the oil and gas industry. The interactive materials depicted the entire production cycle with interesting facts.



WHICH EQUALS TO
OF THE LENGTH OF THE EARTH'S EQUATOR

45%



energy-saving installation “Turbosfera”, gas turbine and control valve of the company “General Electric” in JSC “Embamunaygas”.

In general, according to the Ministry of Education and Science of the Republic of Kazakhstan, oil and gas companies have been selected more than 25 different innovative technologies.


RENEWABLE ENERGY SOURCES

7 AFFORDABLE AND CLEAN ENERGY




Ensure access to affordable, reliable, sustainable and modern energy for all.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

13 CLIMATE ACTION



Take urgent action to combat climate change and its impacts.

GRI 062, 063



The use of innovative technologies and the use of renewable energy sources is relatively new, but promising area in oil and gas industry. In KMG, various types of “green” technologies are used for reduction of harmful impact on the environment.

The total amount of investments in renewable energy sources for 2017 by Group of companies KTG was 12,186 thousand KZT.

Investments for implementation of technology of outdoor lighting system, using solar cells at the Engineering and Technical Center (Uralsk) of Intergas Central Asia JSC in 2017, were 12,186 thousand KZT. Other SDEs did not invest in renewable energy sources in 2017.

Total amount of generated (produced) renewable energy by sources for 2017 for Group of companies KTG:

Geothermal energy: Development of geothermal (thermal) energy by heat pumps for 2017 was 678.54 Gcal.

Explanation: Geothermal heat pumps of type “Waterkotte” for heating and hot water supply (HWS) are successfully operating in JSC “Intergas Central Asia” (MPM Uralsk – 3 units and MPM Atyrau – 6 units).

Solar energy: Generation of electric energy by solar panels for Group of companies KTG for 2017 was 472,443 kWh.

Explanation: Generation of electric energy by solar panels for lighting of territory of the Engineering and Technical Center of Intergas Central Asia JSC was 7,884 kWh in 2017.

Generation of electrical energy by solar panels, installed on the linear part and objects of MG Kazakhstan – China, was 464,659 kWh in 2017.




ANNEX

ANNEX 1.

Information on indicators GRI 102-18, 102-19, 102-20, 102-21, 102-22, 102-23, 102-24, 102-25, 102-26, 102-27, 102-28, 102-29, 102-30, 102-31, 102-32, 102-33, 102-34, 102-35, 102-36, 102-37, 102-38, 102-39, 201-1, 201-2,

201-3, 201-4 is available in JSC NC “KazMunayGas” 2017 Annual Report by the following link: http://www.kmg.kz/uploads/KMG_2017_AnnualReport-FINAL.pdf

ANNEX 2. MATERIALS UTILIZATION BY MASS AND VOLUME

 103-1, 103-2, 103-3, 301-1, 301-2, 301-3

All materials used in production activity of exploration well, as well as their types, mass and volumes are stipulated by technical and working projects and permission for application in accordance with the environmental legislation of the RoK and legislation in the area of civil protection and technical regulation.

Satpayev

Total number of used materials was 3,699.219 including: fuel and lubricant materials – 2,161.329 ton, chemical agents and materials – 1,537.89 ton.

Atyrau refinery

Utilized material including mass or volume

Nº	Indicator	Basic materials	Non-renewable materials	Measurement unit	Quantity
1.	Raw materials	Raw materials	+	ton	7,723,647.00
2.	Materials, related to production process	Catalyzers and adsorbers	+	ton	366
		Reagents	+	ton	1163.765
3.	Semi-finished products	Gasoline components: standard catalyzate isomerizate coking gasoline stable gasoline Combined gasoline and diesel fuel hydrotreating unit Diesel fuel components: straight run kerosine-gasoil fraction AT+ABT hydrotreated diesel oil mixture 20-SN-003+004	+		
4.	Materials, used for packing	Paper sacks for sulfur prepacking	+	pcs.	43,796.00

Note: there are no renewable materials in Atyrau refinery LLP.

KMTF

Oil:

- diesel fuel – 7,155.611 ton;
- gasoline – 24.649 ton;
- heavy oil – 1,889.529 ton;
- lubricating materials – 0.857 ton.

Natural gas – 169,336.00 m³.

PKOP

Title	2017
Raw material processing	4,685,631 ton

Reagents consumption in 2017

Reagents name	2017
Aluminium sulfate	8,300 kg
Aqueous ammonia C-100	25,204 kg
Ammopohos	6,350 kg
Demulsificator DISSOLVAN V 3359	4,972 kg
Dichloroethane	854 kg
Corrosion inhibitor DODIGEN-481 C-100	1,823 kg
Corrosion inhibitor DODIGEN 2808	350 kg
Corrosion inhibitor HELAMIN 9012H	9,030 kg
Corrosion inhibitor HELAMIN HS 190H	1,320 kg
Scale inhibitor HOPAMEP 2200	12,880 kg
Hydrochloric acid (Oct.-March)	21,337 kg
Hydrochloric acid	14,700 kg
Copper sulfate	2,020 kg
Methyldiethanolamine	76,247.7 kg
Technical caustic soda	495,311 kg
Ethylene tetrachloride	89,379 kg
Additive N-methylaniline	6,310,253 kg
Lubricity additive HiTEC 4140A	14,075 kg
Reagent BIOSPERSE-250	1,275 kg
Ammonium nitrate	6,110 kg
Sodium carbonate	7,156 kg
Regeneration salt C9005 DEPRUST	10,850 kg
Stiffness stabilizer Ameroyal 363	3,758 kg
Ether methyl-tertio-butyl	2,945,032 kg

Pavlodar refinery

Basic materials	Non-renewable materials	Measurement unit	Quantity, 2017
Raw materials	+	ton	4,746,923
Catalyzers and adsorbers	+	ton	117.906
Reagents	+	ton	634.9
Plastic sacks for sulfur packing	+	pcs.	473,740

KazGPZ

727.494 mln m³ of associated-petroleum and natural gas was accepted for finished-product output.

Renewable materials are not used in “KazGPZ” LLP for production of goods.

OMG

Acids – 1,059.969 ton; biocides – 95.346 ton; bactericides – 1,036.228 ton; argilla stabilizers – 2,561.922 ton; corrosion inhibitors – 149.011 ton; gelling agents – 85.4501 ton; surfactant species – 714.197 ton.

Processed raw and consumable materials are not used in KMG Group.

ANNEX 3. INFORMATION ABOUT PRODUCED GOODS AND THEIR COMPOSITION

(GRI) 103-1, 103-2, 103-3, 417-1, 417-2, 417-3



Consumer and production rational models.



Atyrau Refinery

Gasoline AI-80-K2 (TS 38.001165–2014)

№ i/n	Indicator name	Regulatory document	Rate		
			TR TS 013/2011	TS 38.001165– 2014	Fact, annual average
2	Plumbum mass concentration, mg/dm ³ , no more	GOST R 51942–2010	5	5	absence
8	Sulphur mass concentration, mg/kg, no more	GOST R 51947-92	500	500	311
12	Benzole volume ratio, %, no more	GOST 29040-91	–	5	1.79

Gasoline AI-92-K2 (TS 38.001165–2014)

№ i/n	Indicator name	Regulatory document	Rate		
			TR TS 013/2011	TS 38.001165– 2014	Fact, annual average
2	Plumbum mass concentration, mg/dm ³ , no more	GOST R 51942–2010	5.00	5.00	absence
8	Sulphur mass concentration, mg/kg, no more	GOST R 52660–2006 (EN ISO 20884:2004)	500	500	106
12	Benzole volume ratio, %, no more	GOST R EN 12177–2008	5	5	2,08

Gasoline AI-95-K2 (TS 38.001165–2014)

№ i/n	Indicator name	Regulatory document	Rate		
			TR TS 013/2011	TS 38.001165–2014	Fact, annual average
2	Plumbum mass concentration, mg/dm ³ , no more	GOST R 51942–2010	5	5	absence
8	Sulphur mass concentration, mg/kg, no more	GOST R 52660–2006 (EN ISO 20884:2004)	500	500	51
12	Benzole volume ratio, %, no more	GOST R EN 12177–2008	5	5	2.15

Gasoline AI-98-K2 (SUPER-98 leadless) (GOST R 51105-97)

№ i/n	Indicator name	Regulatory document	Rate		Fact, annual average
			TR TS 013/2011	GOST R 51105-97	
2	Plumbum mass concentration, mg/dm ³ , no more	28828-90	5	–	absence
5	Sulphur mass concentration, mg/kg, no more	GOST R 52660–2006 (EN ISO 20884:2004)	500	500	39
6	Benzole volume ratio, %, no more	GOST 29040-91	5	5	1.36

Diesel fuel DT-3-K2 (Д3ЗЧ-0,05-40 environmentally friendly) (TS 38.1011348–2003)

№ i/n	Indicator name	Regulatory document	Rate		Fact, annual average
			by TR TS 013/2011	by TS 38.1011348–2003	
6	Sulphur mass concentration: %, no more	GOST R 51947–2002	–	0.05	0.041
	Sulphur mass concentration: mg/kg, no more		500	–	410

Pavlodar Refinery

Indicators	Gasoline K2	Gasoline K4
1. Sulphur mass concentration, mg/kg	90	40
2. Benzole volume ratio, %	3.4	0.8
3. Plumbum mass concentration, mg/dm ³	absence	absence

Benzol, lead and sulphur content for 2017 by Group of companies KazTransGas:

there are no benzol, plumbum and sulphur in structure of gas, extracted from Amangeldinskaya group of deposits.

Information on addresses of main subsidiaries and dependent entities

Level 1	Interest	Address
KazMunayGas Exploration Production JSC	63%	Astana, 010000, Kabanbay Street, 17
“KazTransGas”	100%	Astana, A. Bokey Khan Street, building 12
“KazTransOil” JSC	90%	Astana, Esil region, Kabanbay batyr Avenue, house 19, block 5
Atyrau Refinery LLP	99.53%	Atyrau, Kabdолоv Street, 1
Pavlodar Refinery LLP	100%	Pavlodar, Khimkombinatovskaya, 1
“PKOP” LLP	99.43%	Shymkent, Kapal Batyr 5 km 160011

ANNEX 4. ENVIRONMENTAL INDICATORS

 103-3

Environmental expenses

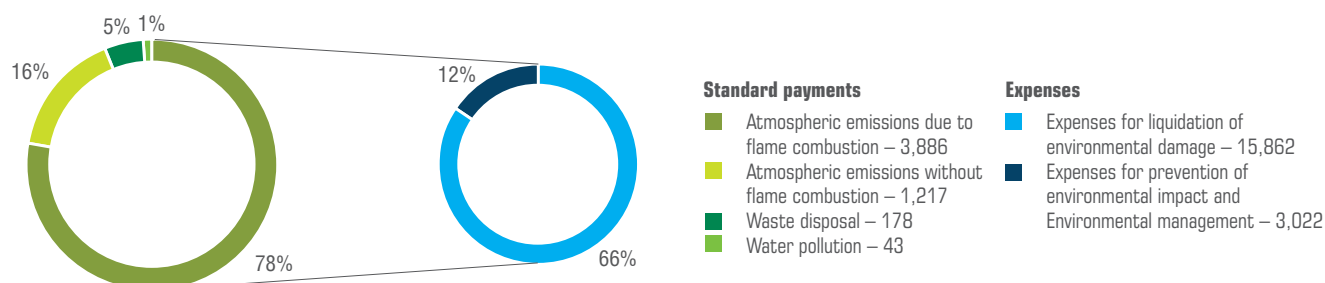
Expenses	2014		2015		2016		2017	
	mln KZT	mln USD	mln KZT	mln USD	mln KZT	mln USD	mln KZT	mln USD
Expenses related to waste management, emission and discharges clearing, total	10,996.7	61.4	7,661.7	34.6	14,185.8	41.5	15,861.5	49
Waste disposal and processing	4,793.3	26.7	1,858.1	8.4	2,330.6	6.8	4,323.2	13
Emissions and discharges clearing	2,304.9	12.9	2,515.1	11.3	3,778.3	11.0	4,880.3	15
Expenses for development and confirmation of document package on greenhouse gas emissions	450.8	2.5	79.9	0.4	52.6	0.15	33.4	0.1
Depreciation of appropriate equipment, materials and services, required for its operation and technical maintenance, personnel expenses related to appropriate activity	2,430.7	13.6	2,942.9	13.3	7,506.6	22	4,291.9	13
Ecological insurance	238.0	1.3	238.0	1.0	365.5	1.1	99.0	0.3
Expenses for liquidation of environmental damage, including expenses for oil spill response	1,079.1	6.0	27.8	0.1	152.1	0.45	1.3	0.004
Expenses for compensatory measures in the area of environment protection	n/a	n/a	n/a	n/a	n/a	n/a	2,232.2	7
Expenses for prevention of environmental impact and Environmental management, total	1,303.4	7.3	1,354.6	6.1	1,394.7	4.08	3,021.9	9.3
Staff for employees education and training	21.7	0.1	9.7	0.04	246.3	0.7	1,028.6	3.2

Expenses	2014		2015		2016		2017	
	mln KZT	mln USD	mln KZT	mln USD	mln KZT	mln USD	mln KZT	mln USD
External services for environment management system	15.1	0.08	11.2	0.05	7.8	0.02	754.8	2.3
Management systems external certification	24.9	0.1	38.8	0.2	33.5	0.09		
Staff for general activity in the area of Environmental management	5.3	0.03	4.3	0.02	2.1	0.006	11.5	0.04
Research and developments	351.5	1.9	376.1	1.7	263.1	0.76	807.0	2.5
Additional expenses for introduction of cleaner technologies	4.2	0.02	6.5	0.03	0.0	0.0	0	0
Additional expenses for “green procurements”	7.6	0.04	5.1	0.02	6.1	0.01	58.0	0.2
Other expenses, related to environmental management	873.0	4.9	903.0	4.1	835.6	2.5	362.1	1.1

Environmental payments (standard)

	2014		2015		2016		2017	
	mln KZT	USD	mln KZT	USD	mln KZT	USD	mln KZT	USD
Atmospheric emissions due to APG flame combustion	2,074	11,574,306	3,340	15,063,365	4,325	12,655,820	3,886	11,917,244
Atmospheric emissions (without APG flame combustion)	860	4,779,375	1,087	4,902,359	1,064	3,113,478	1,217	3,733,852
Water pollution	51	284,614	38	171,379	40	117,048	43	131,125
Waste disposal	431	2,405,268	514	2,318,135	412	1,205,595	178	547,228

Environmental payments structure per 2017, mln KZT



Environmental indicators

	Extraction				Transportation				Processing			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Greenhouse gas emissions												
Greenhouse gases direct emissions (CO ₂ , mln ton)	2.4	2.9	2.8	2.7	0.8	0.6	0.7	0.7	2.6	2.6	3.1	3.2
Greenhouse emissions intensity (ton CO ₂ per 1000 ton HCS)	110	120	115	110	–	–	–	–	181	181	219	221
APG combustion												
Flame combustion (mln ton CO ₂)	0.5	0.7	0.7	0.7	–	–	–		–	–	–	
Number of combusted gas per unit of extracted HCS (ton per 1000 ton of extracted HCS)	9.0	12.0	12.0	11.0	–	–	–		–	–	–	
Flame combustion (mln m ³)	0.2	0.3	0.3	0.3	–	–	–		–	–	–	
Power capacity												
Energy consumption (mln gigajoule)	–	41.4	40.7	39.1	–	33.2	32.3	37.4	–	42.4	40.2	43.0
Specific consumption of utilities (Gigajoule per ton of extracted HCS)	–	1.80	1.73	1.62	–	–	–	–	–	3.0	2.9	3.0
Pollutant emissions												
Sulfur oxides (SO _x) (thousand ton SO ₂)	4.8	7.0	9.0	7.8	0.4	0.3	0.4	0.2	8.7	9.4	7.5	6.8
Nitrogen oxides (NO _x) (thousand ton NO ₂)	3.7	5.5	6.1	6.3	3.3	2.7	3.2	3.5	6.1	5.0	3.5	3.9
Spillages												
Illegal tapping – volume (thousand ton)	–	–	–	–	–	–	–	–	–	–	–	–
Illegal tapping – quantity	–	–	1	–	12	14	3	6	–	–	–	–
Oil spillages – volume (ground) (thousand ton)	–	4.5	1.6	1.7	–	–	–	–	–	–	–	–
Water												
Total amount of water withdrawal (mln m ³)	49.1	50.6	49.6	49.4	28.6	29.1	29.2	30.9	8.9	10.6	10.7	12.2
Water discharge – volume (mln m ³)	0.9	0.8	0.8	1.1	1.2	1.02	1.2	1.4	6.0	6.28	6.8	6.5
Wastes												
Hazardous (thousand ton)	82	221	195	273	7.3	6.8	8.8	8.9	52	119	38	41.2
Unhazardous (thousand ton)	20	9.1	6.7	2.7	8.1	6.4	6.6	3.4	20	12	11	6.6
Total wastes (thousand ton)	103	230	202	276	15	13	15	12.3	72	132	49	47.8
*among them drilling wastes, ground (thousand ton)	284	353	151	186	–	–	–	–	–	–	–	–
* among them drilling wastes, sea (thousand ton)	2.0	2	0	2.05	–	–	–	–	–	–	–	–

Levels of environmental sensitivity of natural resources of the Caspian Sea

Level of environmental sensitivity	Definition
1	2
Aquatic vegetation	
High	For plankton – within the period April–October in shoaling zone with depth 3-5 m For macrophytes – during the growing season (May–June) in zone of pseudo-littoral and in shoaling zone to depth 4 m with large abundance of species
Medium	For plankton – within the period April–October in zones with depths from 5 m to 9 m. For macrophytes – July–November in pseudo-littoral and in shoaling zone to depth 4 m with large abundance of species, April–May – in the same zone, but with low concentration of plants
Low	For plankton – March and November in shoaling zone with depths 3-5 m April–October in zone of pseudo-littoral and in shoaling zone with depth to 3 m For macrophytes – April–November – in areas of seas with depth 4-9 m
Maximum	For plankton – December–March in areas of seas For macrophytes – December–March in area of the Caspian Sea
Benthos	
High	During spring reproduction (May – middle of June) on shallows of the North-East Caspian with depth 3–7 m
Medium	1. On the same areas, than high, but from June to August 2. In the area of the North-East Caspian from August to September
Low	1. During spring reproduction (May – middle of June) in zone of pseudo-littoral (0-2 m) and on shallows (at least 3 m) 2. On the same areas, as at spring, but from October to November
Minimum	December – March in the area of the Caspian
Fish	
High	For sturgeons: during spring spawning (March 10 – June 30) in the area between Volga and Ural at distance up to 20 km from prominent parts of deltas, on the area between Ural and Emba – to 15 km from coast line. For herrings (big-eyes and north-Caspian shads, Dolginskaya herrings) – at shallows (1 – 3 m) of the North-East Caspian during spawning and spawn development during the period from March – middle of June. For ordinary (red eye, soma) – in bays with grass filtration during spawning and spawn development (May – June)
Medium	On the same areas, than high, but for other areas of sea. In zone of high sensitivity – summer – autumn
Low	On shallow water areas, different from high sensitivity areas, with depth to 7 m within the period from July till November
Minimum	On areas with depth > 7 m, and period from summer to autumn In the area of the North-East Caspian from December till February
Birds	
High	For swans and ducks – during nesting and moult (April – July 15) in reed bed For sandpipers – during nesting (April 1 – July 15) in reed bed
Medium	For swans and ducks – during high sensitivity on areas with less concentration of birds or on areas in dense reed bed during moult completion (July 15 – end of the August). For sandpipers – during nesting, but on areas with lesser concentration of birds (in rare reed bed)

Level of environmental sensitivity	Definition
1	2
Low	For swans, ducks and sandpipers – on areas outside nesting area during all periods of stay
Minimum	For swans and ducks – at winter For other birds – at winter and during the period, different from nesting
Seals	
High	From October till March – in the waters of the Caspian Sea on island and ice grounds during reproduction and molting with high concentration of animals
Medium	From April till May on island and ice grounds with small concentration of animals From June till September on sand spits, islands, sand islands, with mass haul-out sites of animals during feeding
Low	The same as medium, but for part of population on border of the area with rare concentration
Minimum	For areas of seas, where individual species can be met

ANNEX 5. LIMITS, ADMISSIONS, STANDARDS AND METHODOLOGIES, USED IN THE REPORT

GRI 103-1, 103-3, 303-2, 304-1, 304-2, 304-3, 304-5, 306-5

Section “Environmental balance”

GRI 103-1, GRI 103-2 и GRI 103-3, specified in this section, are applied to indicators GRI 301-3, 302-1, 302-3, 302-4, 303-1, 303-2, 303-3, 304-1, 304-2, 304-3, 304-4, 305-1, 305-4, 305-5, 305-7, 306-1, 306-2, 306-3, 306-4, 306-5, 307-1, 308-1, 308-2, OG4, OG5, OG6, OG7, 403-1, 403-2, 403-3, 403-4. In case of specific character of subject management, GRI 103-1, GRI 103-2 and GRI 103-3 are described in details in appropriate sections.

Environmental expenses

Border KMG Exploration Extraction JSC (“Ozenmunaygas” JSC, “Embamunaygas” JSC, “Karazhambasmunay” JSC, “Kazgermunay” LLP JV, “Kazakh GPP” LLP, “OzenMunayServis” LLP), “Kazakhturkmunay” LLP, “Kazakhoil Aktobe” LLP, “Mangistaumunaygas” JSC, “KazTransOil” JSC, “KazTransGas” JSC, “KazMunayTeniz” LLP MNE, “NMSC “Kazmortransflot” LLP, “Oil Construction Company” LLP, “Oil Services Company” LLP, “Satpayev Operating” LLP, “Urikhtau Operating” LLP, “KMG Systems & Services” LLP, “KazMunayGas – processing and marketing” JSC (“Atyrau refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “KMG-Onimderi” LLP, “JV “CASPIBITUM” LLP).

Energy resources use

Borders of this section include 15 SDE, which are subjects of SER (State Energy Register), which reflect energy-consuming enterprises of the Group. Data on consumption of fuel and energy resources etc. is direct consumption, if otherwise is not indicated. Information is disclosed separately by business areas “Oil and gas extraction”, “Oil and gas transport” and “Oil and gas refining”.

“Oil and gas extraction” – “Ozenmunaygas” JSC, “Embamunaygas” JSC, “Kazgermunay” LLP JV, “Kazakh GPP” LLP, “OzenMunayServis” LLP, “Kazakhturkmunay” LLP, “Kazakhoil Aktobe” LLP.

“Oil and gas transport” – “NMSC “Kazmortransflot” LLP, “KazTransGas” JSC, “KazTransOil” JSC.

“Oil and gas refining” – “Atyrau Refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPIBITUM” LLP.

Water resources use

Borders: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” LLP, “Kazgermunay” LLP JV, “Karazhambasmunay” JSC, “Kazakh GPP” LLP, “Urikhtau Operating” LLP, “KazTransOil” JSC, “KazTransGas” JSC, “NMSC “Kazmortransflot” LLP, “Atyrau Refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPIBITUM” LLP, “KMG-Onimderi” LLP, “Satpayev Operating” LLP, “N” Operating company” LLP, “Zhambyl Petroleum” LLP, “OzenMunayServis” LLP, “Oil Construction Company” LLP, “Oil Services Company” LLP – these subsidiaries and dependent entities are main operating assets of the KMG and render sufficient impact on use of water resources of Kazakhstan.

Biodiversity conservation and environmental monitoring

Borders of indicators by biodiversity (except GRI 304-3) over only production activity (internal borders – SDEs, where production activity had happened: Satpayev, Zhambyl, Kansu, Urikhtau, KOA) in environmentally sensitive regions (external borders – local communities, Kazakhstani sector of the Caspian Sea, including Novinskiy state nature reserve, Kenderli-Kayasanskaya conservation area, Ustyurt state nature reserve, state integrated nature reserve of local significance “Kokzhide-Kumzhargan”).

Our contribution to biodiversity conservation

Borders 304-3: SDEs with equity share more 50%, except “PetroKazakhstan Oil Products” LLP, included in present report.

Our operations at sea

Borders: SDEs with equity share of KMG more 50%, performing production operations in Kazakhstani sector of the Caspian Sea (internal), sea areas of Kazakhstani sector of the Caspian Sea and local communities (external).

Climate change and air quality

Borders of the section cover following large subsidiaries and dependent entities of the KMG, which are the most important sources of air pollutant emissions: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “OzenMunayServis” LLP, “Kazgermunay” LLP JV,

“Karazhambasmunay” JSC, “Kazakh GPP” LLP, “Urikhtau Operating” LLP, KazTransOil” JSC, “KazTransGas” JSC, “NMSC “Kazmortransflot” LLP, “Atyrau Refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPIBITUM” LLP, “KMG-Onimderi” LLP, “Satpayev Operating” LLP, “N” Operating company” LLP, “Zhambyl Petroleum” LLP.

Associated Petroleum Gas Utilization

The boundaries of the section cover following subsidiaries and dependent entities of KMG, where fifty or more percent of voting shares (equity shares) are directly or indirectly owned by KMG on the right of ownership or trust management, as well as legal entities, which activities is controlled by KMG: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” JSC, “Kazgermunay” JV LLP, “Karazhambasmunay” JSC.

Information on companies in extraction sector, where processes, related to associated petroleum gas extraction and beneficial use, are occurred, is specified in this section.

Wastes management

Borders: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” LLP, “KazGerMunay” LLP JV, “Karazhambasmunay” JSC, “Kazakh GPP” LLP, “Urikhtau Operating” LLP, KazTransOil” JSC, “KazTransGas” JSC, “NMSC “Kazmortransflot” LLP, “Atyrau Refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPIBITUM” LLP, “KMG-Onimderi” LLP, “Satpayev Operating” LLP, “N” Operating company” LLP, “Zhambyl Petroleum” LLP, “Ozenmunayservice” LLP, “Oil Construction Company” LLP, “Oil Services Company” LLP – these subsidiaries and dependent entities are main operating assets of the KMG and render sufficient impact on use of water resources of Kazakhstan.

Plumbum, benzol and sulfur content in fuel

Borders: “Atyrau Refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “KMG-Onimderi” LLP, “JV “CASPIBITUM” LLP, “KazTransGas” LLP.

Compliance with environmental requirements

Border of the section cover following large subsidiaries and dependent entities of KMG, where fifty or more percent of voting shares (equity shares) are directly or indirectly owned by KMG on the right of ownership or trust management, as well as legal entities, which activities is controlled by KMG: “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, “Mangistaumunaygas” JSC, “Embamunaygas” JSC, “Ozenmunaygas” LLP,

“Kazgermunay” LLP JV, “Karazhambasmunay” JSC, “Kazakh GPP” LLP, “Urikhtau Operating” LLP, “KazTransOil” JSC, “KazTransGas” JSC, “NMSC “Kazmortransflot” LLP, “Atyrau Refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “JV “CASPIBITUM” LLP, “KMG-Onimderi” LLP, “Satpayev Operating” LLP, “N” Operating company” LLP, “Zhambyl Petroleum” LLP.

Indicators of safety and labor protection

Borders: present indicators on safety and labor protection include data of KMG assets with equity share more 50%, except “PetroKazakhstan Oil Products” LLP, included in present report.

Preparation and training by HSE

Borders: CC JSC NC “KazMunayGas” (Block HSE).

Business area “Exploration, extraction”:

JV “Kazgermunay”, “Kazakhoil Aktobe” LLP, “Kazakhturkmunay” LLP, MNE “KazMunayTeniz” LLP, “Zhambyl Petroleum” LLP, “Mangistaumunaygas” JSC, “N” Operating company” LLP, Urikhtau Operating” LLP, “Satpayev Operating” LLP.

Business area “Transportation”:

“KazTransOil” JSC, CO JSC “KazTransGas”, “Intergas Central Asia” JSC, “KazTransGas Onimderi” LLP, “Amangeldy Gas” LLP, “KazTransGas Aymak” JSC, “Asian pipeline” LLP, Gas pipeline Beineu – Shymkent, “NMSC “Kazmortransflot” LLP, “KMG Systems & Services” LLP.

Business area “Processing and marketing”:

CO “KazMunayGas – processing and marketing” JSC, “Atyrau Refinery” LLP, “Pavlodar refinery” LLP, “PetroKazakhstan Oil Products” LLP, “KMG-Onimderi” LLP, “JV “CASPIBITUM” LLP.

Business area “Service”:

“KazMunayGas-Service” LLP, “Air company “Euro-Asia Air” JSC, “TenizService” LLP, “KMG Security” LLP, “KMG Drilling&Service” LLP, “Oil Construction Company” LLP, “Oil Services Company” LLP, “Oil Transport Corporation” LLP, “Munaytelekom” LLP, “Mangistauenergomunay” LLP, “Research and Development Establishment of production and drilling technologies “KazMunayGas” LLP.

Consumer health and safety

Borders of “KazTransGas Aimak” JSC, “KMG-Onimderi” LLP.

Oil spill prevention

Borders: SDEs, performing production operations on grounds, with equity share more 50%, except "PetroKazakhstan Oil Products" LLP, listed in present report.

Water resources utilization

Water withdrawal, water consumption and wastewater disposal are analyzed in accordance with the requirements of IOGP and IPIECA reporting. Forms of submission of environmental information, received from SDEs, were developed based on these requirements. Information on measurement methods, metering devices and technological features of water resources utilization in fields and oil refineries is also taken into account besides numerical information.

Pavlodar Refinery buys steam from municipal Heat Power Plant. Condensate return to HPP is about 30%, accounting of returned condensate is maintained by metering devices. Remaining condensate is accounted by calculation method as part of water withdrawal of Pavlodar Refinery, since 2016. Consequently, direct water withdrawal from natural sources is considered for Atyrau Refinery and PKOP, and withdrawal from municipal water supply systems plus indirect water withdrawal from Irtysh River through municipal HPP without return of condensate and chemically purified water for Pavlodar Refinery.

Company KazTransOil supplies Volgian water to users of dry Atyrauskaya and Mangistauskaya oblasts of Kazakhstan by water conduit Astrakhan – Mangyshlak. More 90% of withdrawn water KTO transfers to other water users without utilization. KTO transferred 8,1 mln m³ of water to Group of companies KMG in 2017. Consequently, it is not necessary to take into account water, transferred to other KMG companies, in order to get total value of water withdrawal by the whole Group of companies, corresponding to physical phenomenon. Also, amount of actual water withdrawal by Group of companies will not be equal to amount of water withdrawal by business areas.

Following regulatory documents of the RoK are used for monitoring this parameter: codes, decrees, resolutions etc. Environmental measures are carried out by all listed water objects in accordance with the regulatory requirements; permissions for water withdrawal are obtained in the authorized body. Monitoring of air, soil, surface water and atmosphere is carried out on a quarterly basis. Monitoring wells were drilled for monitoring and prevention of groundwater pollution.

Reused waters are volume of waste water, which were cleared (mechanical/biological) and reused for the needs of the enterprise (system charge, watering, washing of transport etc.). They are measured directly by measuring devices (meters).

Recycling waters are hypothetical volume of water in water circulation systems at oil and gas refineries, which passed a certain number of cycles in installation. It is calculated as total volume of run-around system, multiplied by number of cycles, passed by this water over a period of time (in this case, for 2017). In fact, this is a hypothetical amount of water which would be required for operation of all installations at the refinery, if there was no water-circulation system. Therefore, percentage of the recycling water of total water withdrawal is less informative.

Recommended percent of water reuse from total water withdrawal by area Recycling is 35% for publication in the Report, as it conveys the physical picture of the process more accurately, reflects actual technical capabilities of the Company on treatment and reuse of waste waters.

Section "Social responsibility"

Section covers subsidiaries and dependent entities if the KMG, where fifty and more percent of voting shares (equity shares) directly or indirectly are owned by the KMG on the right of ownership or trust management, as well as legal entities, which activity can be controlled by the KMG.

ANNEX 6. ABBREVIATIONS

NGVRS	NGV refill station
FFS	Fuel filling station
AR	Atyrau Refiner
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
KazNTU	Kazakh National University named after K. I. Satpayev
KBTU	Kazakh-British Technical University
KIMEP	Kazakhstan Institute of Management, Economics and Strategic Research
KMG	“KazMynayGas NC” 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 “Mangistaumunaygas”
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
SDR	Sustainable development report
PJSC	Public joint-stock company
PKOP	PetroKazakhstan Oil Products JSC (Shymkent Refinery)
APG	Associated Petroleum Gas
PPCP	Pavlodar Refinery
RoK	The Republic of Kazakhstan
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 (Sustainability Reporting Guidelines)
IAOT	International Association Oil Transportation
IOGP	International Association of Oil and Gas Producers
LTIR	Lost-time Injury Rate
OSRL	Oil Spill Response Limited

ANNEX 7. QUESTIONNAIRE OF INVOLVED STAKEHOLDERS IN 2018

 102-21, 102-42, 102-43

List of external organizations, which representatives took part in questionnaire on relevance assessment for Sustainability development report for 2017:

1	“Research institute “Production and drilling technologies” LLP
2	“Institute of economic research” JSC
3	KAZENERGY Association
4	“Oil and gas information analysis center” JSC
5	PriceWaterhouseCoopers Advisory LLP
6	Renewable energy association of Kazakhstan
7	PI “Youth policy issues administration of Astana city”
8	Federation of Labor Unions of the Republic of Kazakhstan
9	RPE RK “Atameken”
10	ZAO Deloitte&Touche CIS
11	JSC NC “Astana Expo-2017”
12	Karachaganak Petroleum Operating b.v.
13	PI “Department for Architecture and Urban Development of Astana city”
14	Investment committee of the Ministry of Investments and development of the RoK
15	Department of natural resources and environmental control of Atyrauskaya oblast
16	Committee of geology and subsurface use of the Ministry of industry and development of the RoK
17	United Nations Development Programme
18	Kazakhstani environmental management association for sustainable development
19	“KING” JSC
20	Ernst & Young

GRI 102-55

ANNEX 8. GRI CONTENT INDEX



GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
GRI 101 Foundation 2016					
General Disclosures					
GRI 102: General Disclosures 2016					
102-1	Name of the organization	8			
102-2	Activities, brands, products, and services	10, 11, 12, 13, 15, 16, 117			
102-3	Location of headquarters	8, 54, 55			
102-4	Location of operations	10, 11, 12, 13, 15, 16, 54, 55			
102-5	Ownership and legal form	8			
102-6	Markets served	10, 11, 12, 13, 15, 16, 54, 55, 117			9
102-7	Scale of the organization	10, 11, 12, 13, 15, 16, 24, 54, 55			9
102-8	Information on employees and other workers	16, 19, 93			
102-9	Supply chain	59			12
102-10	Significant changes to the organization and its supply chain	6, 19, 24, 52, 59			9, 12
102-11	Precautionary Principle or approach	65		7	
102-12	External initiatives	48			17
102-13	Membership of associations	49			17
102-14	Statement from senior decision-maker	6, 24			
102-15	Key impacts, risks, and opportunities	6, 19, 24, 46, 52, 55			9
102-16	Values, principles, standards, and norms of behavior	4, 19, 41			5, 10
102-17	Mechanisms for advice and concerns about ethics	41, 42			5, 10
102-18	Governance structure	26			16
102-19	Delegating authority	30, 130			
102-20	Executive-level responsibility for economic, environmental, and social topics	27, 30, 31, 34			
102-21	Consulting stakeholders on economic, environmental, and social topics	26, 28, 30, 32, 34, 79, 141			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
102-22	Composition of the highest governance body and its committees	26, 28			
102-23	Chair of the highest governance body	28			
102-24	Nominating and selecting the highest governance body	28			
102-25	Conflicts of interest	128			
102-26	Role of highest governance body in setting purpose, values, and strategy	28, 34, 128			
102-27	Collective knowledge of highest governance body	28, 32, 39, 128			
102-28	Evaluating the highest governance body's performance	32, 128			
102-29	Identifying and managing economic, environmental, and social impacts	28, 31, 34, 39, 64		7	
102-30	Effectiveness of risk management processes	128			
102-31	Review of economic, environmental, and social topics	31, 34			
102-32	Highest governance body's role in sustainability reporting	27			
102-33	Communicating critical concerns	41, 42, 128			
102-34	Nature and total number of critical concerns	27, 65, 128			
102-35	Remuneration policies	128			
102-36	Process for determining remuneration	128			
102-37	Stakeholders' involvement in remuneration	128			
102-38	Annual total compensation ratio	Confidentiality constraints	Due to legal obligations		
102-39	Percentage increase in annual total compensation ratio	Confidentiality constraints	Due to legal obligations		
102-40	List of stakeholder groups	36, 43			17
102-41	Collective bargaining agreements	43			17
102-42	Identifying and selecting stakeholders	36, 39, 141			17
102-43	Approach to stakeholder engagement	36, 39, 41, 42, 43, 117, 141			17
102-44	Key topics and concerns raised	6, 43, 46, 117, 141			
102-45	Entities included in the consolidated financial statements	39			
102-46	Defining report content and topic Boundaries	36, 39			
102-47	List of material topics	36, 39			
102-48	Restatements of information	39, 82			
102-49	Changes in reporting	36, 39			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
102-50	Reporting period	2, 36, 39			
102-51	Date of most recent report	39, 153			
102-52	Reporting cycle	39, 153			
102-53	Contact point for questions regarding the report	39, 157			
102-54	Claims of reporting in accordance with the GRI Standards	2, 36, 39			
102-55	GRI content index	142			
102-56	External assurance	2, 36, 39, 142			
Material topics					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	52, 58, 118			
103-2	The management approach and its components	55, 58, 118			
103-3	Evaluation of the management approach	52, 55, 58, 118			
GRI 201: Economic Performance 2016					
201-1	Direct economic value generated and distributed	118, 128			8,7
201-2	Financial implications and other risks and opportunities due to climate change	128			
201-3	Defined benefit plan obligations and other retirement plans	Confidentiality constraints	Due to legal obligations		
201-4	Financial assistance received from government	128			
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 202: Market Presence 2016					
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	102			13
202-2	Proportion of senior management hired from the local community	102			
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	58			
103-2	The management approach and its components	58			
103-3	Evaluation of the management approach	58			
GRI 203: Indirect Economic Impacts 2016					

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
203-1	Infrastructure investments and services supported	58			8
203-2	Significant indirect economic impacts	58			8
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	59			
103-2	The management approach and its components	59			
103-3	Evaluation of the management approach	59			
GRI 204: Procurement Practices 2016					
204-1	Proportion of spending on local suppliers	60			12
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	61			
103-2	The management approach and its components	61			
103-3	Evaluation of the management approach	61			
GRI 205: Anti-Corruption 2016					
205-1	Operations assessed for risks related to corruption	61		10	16
205-2	Communication and training about anti-corruption policies and procedures	61		10	6
205-3	Confirmed incidents of corruption and actions taken	61			
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	118			
103-2	The management approach and its components	118			
103-3	Evaluation of the management approach	118			
GRI 206: Anti-Competitive Behavior 2016					
206-1	Legal actions for anti-competitive behavior. Anti-trust. And monopoly practices	118			
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	128			
103-2	The management approach and its components	128			
103-3	Evaluation of the management approach	128			
GRI 301: Materials 2016					
301-1	Materials used by weight or volume	128			
301-2	Recycled input materials used	128			7
301-3	Reclaimed products and their packaging materials	128			7
GRI 103: Management Approach 2016					

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
103-1	Explanation of the material topic and its Boundary	66			
103-2	The management approach and its components	66			
103-3	Evaluation of the management approach	66			
GRI 302: Energy 2016					
302-1	Energy consumption within the organization	66			
302-2	Energy consumption outside of the organization	66			
302-3	Energy intensity	67			
302-4	Reduction of energy consumption	68			
302-5	Reductions in energy requirements of products and services	Not applicable	Due to product specifics		
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	69			
103-2	The management approach and its components	69			
103-3	Evaluation of the management approach	69			
GRI 303: Water 2016					
303-1	Water withdrawal by source	69			
303-2	Water sources significantly affected by withdrawal of water	69			6
303-3	Water recycled and reused	69			6
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 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	72			14, 15
304-2	Significant impacts of activities, products, and services on biodiversity	72			
304-3	Habitats protected or restored	72			14, 15
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	72			14, 15
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	79			
103-2	The management approach and its components	79			
103-3	Evaluation of the management approach	79, 82			
GRI 305: Emissions 2016					

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
305-1	Direct (Scope 1) GHG emissions	80			
305-2	Energy indirect (Scope 2) GHG emissions	Information unavailable	Information not compiled due to specifics in RoK Legislation, but planned to be complied in the future		
305-3	Other indirect (Scope 3) GHG emissions	Information unavailable	Information not compiled due to specifics in RoK Legislation, but planned to be complied in the future		
305-4	GHG emissions intensity	80			
305-5	Reduction of GHG emissions	80			
305-6	Emissions of ozone-depleting substances (ODS)	80			
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	82			
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	76, 85			
103-2	The management approach and its components	76, 85			
103-3	Evaluation of the management approach	76, 85			
GRI 306: Effluents and Waste 2016					
306-1	Water discharge by quality and destination	85, 86			
306-2	Waste by type and disposal method	85			12
306-3	Significant spills	76			
306-4	Transport of hazardous waste	86			
306-5	Water bodies affected by water discharges and/or runoff	72, 86			14
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	90			
103-2	The management approach and its components	90			
103-3	Evaluation of the management approach	90			
GRI 307: Environmental Compliance 2016					
307-1	Non-compliance with environmental laws and regulations	90			
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	91			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
103-2	The management approach and its components	91			
103-3	Evaluation of the management approach	91			
GRI 308: Supplier Environmental Assessment 2016					
308-1	New suppliers that were screened using environmental criteria	91			17
308-2	Negative environmental impacts in the supply chain and actions taken	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 401: Employment 2016					
401-1	New employee hires and employee turnover	94, 95			8
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	95			8
401-3	Parental leave	95			8,5
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	95			
103-2	The management approach and its components	95			
103-3	Evaluation of the management approach	95			
GRI 402: Labor / Management relations 2016					
402-1	Minimum notice periods regarding operational changes	95			
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 403: Occupational Health and Safety 2016					
403-1	Workers representation in formal joint management–worker health and safety committees	107			3,11
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	111			3,11
403-3	Workers with high incidence or high risk of diseases related to their occupation	109			
403-4	Health and safety topics covered in formal agreements with trade unions	109			
GRI 103: Management Approach 2016					

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
103-1	Explanation of the material topic and its Boundary	111			
103-2	The management approach and its components	98, 101			
103-3	Evaluation of the management approach	98, 101			
GRI 404: Training and Education 2016					
404-1	Average hours of training per year per employee	98, 101			4
404-2	Programs for upgrading employee skills and transition assistance programs	100			4
404-3	Percentage of employees receiving regular performance and career development reviews	101			4
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 405: Diversity and Equal Opportunity 2016					
405-1	Diversity of governance bodies and employees	102			10
405-2	Ratio of basic salary and remuneration of women to men	102			10
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	61, 96			
103-2	The management approach and its components	61, 96			
103-3	Evaluation of the management approach	61, 96			
GRI 406: Non-Discrimination 2016					
406-1	Incidents of discrimination and corrective actions taken	61, 96		4,1	
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	96			
103-2	The management approach and its components	96			
103-3	Evaluation of the management approach	96			
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	96		3	
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	96			
103-2	The management approach and its components	96			
103-3	Evaluation of the management approach	96			
GRI 408: Child Labor 2016					

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
408-1	Operations and suppliers at significant risk for incidents of child labor	96		4	
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	61			
103-2	The management approach and its components	61			
103-3	Evaluation of the management approach	61			
GRI 409: Forced or Compulsory Labor 2016					
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	61		4	
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	61			
103-2	The management approach and its components	61			
103-3	Evaluation of the management approach	61			
GRI 410: Security Practices 2016					
410-1	Security personnel trained in human rights policies or procedures	61			16
GRI 411: Rights of Indigenous Peoples 2016					
411-1	Incidents of violations involving rights or indigenous peoples	Not applicable	Due to RoK legislation, not material topic		
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	61			
103-2	The management approach and its components	61			
103-3	Evaluation of the management approach	61			
GRI 412: Human Rights Assessment 2016					
412-1	Operations that have been subject to human rights reviews or impact assessments	61			16
412-2	Employee training on human rights policies or procedures	61			16
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	61			16
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	105			
103-2	The management approach and its components	105			
103-3	Evaluation of the management approach	105			
GRI 413: Local Communities 2016					
413-1	Operations with local community engagement, impact assessments, and development programs	105			

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
413-2	Operations with significant actual and potential negative impacts on local communities	105			
GRI 414: Supplier Social Assessment 2016					
414-1	New suppliers that were screened using social criteria	Not applicable	Due to internal rules and procedures		
414-2	Negative social impacts in the supply chain and actions taken	Not applicable	Due to internal rules and procedures		
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	-			
103-2	The management approach and its components	-			
103-3	Evaluation of the management approach	-			
GRI 415: Public Policy 2016					
415-1	Political contributions	Not applicable	Due to internal rules and procedures		
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	115			
103-2	The management approach and its components	115			
103-3	Evaluation of the management approach	115			
GRI 416: Customer Health and Safety 2016					
416-1	Assessment of the health and safety impacts of product and service categories	115			
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	115			3
GRI 417: Marketing and Labeling 2016					
417-1	Requirements for product and service information and labeling	Not applicable	Due to product nature and specifics		
417-2	Incidents of non-compliance concerning product and service information and labeling	Not applicable	Due to product nature and specifics		
417-3	Incidents of non-compliance concerning marketing communications	Not applicable	Due to product nature and specifics		
GRI 418: Customer Privacy 2016					
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Not applicable	Due to product nature		
GRI 103: Management Approach 2016					

GRI Standard	Disclosures	Page number(s)	Omission	Connection with the UN Global Compact Principles	Connection with the UN Sustainable Development Goals
103-1	Explanation of the material topic and its Boundary	118			
103-2	The management approach and its components	118			
103-3	Evaluation of the management approach	118			
GRI 419: Socioeconomic Compliance 2016					
419-1	Non-compliance with laws and regulations in the social and economic area	136			
GRI G4 Sector Disclosures: Oil and Gas					
OG1	Volume and type of estimated proved reserves and production	53			
OG2	Total amount invested in renewable energy	126			7,9,13
OG3	Total amount of renewable energy generated by source	126			
OG4	Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored	72, 75			14,15
OG5	Volume and disposal of formation or produced water	86			
OG6	Volume of flared and vented hydrocarbon	80			
OG7	Amount of drilling waste and strategies for treatment and disposal	86			
OG8	Benzene, lead and sulfur content in fuels	87			
OG9	Operations where indigenous communities are present or affected by activities and where specific engagement strategies are in place	65			
OG10	Number and description of significant disputes with local communities and indigenous peoples	65			
OG11	Number of sites that have been decommissioned and sites that are in the process of being decommissioned	Not applicable	Not material topic in the reporting period		
OG12	Operations where involuntary resettlement took place, the number of households resettled in each and how their livelihoods were affected in the process	65			
OG13	Number of process safety events, by business activity	113			3,11
OG14	Volume of biofuels produces and purchased meeting sustainability criteria	Not applicable	Not produced		

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GRI 102-51, 102-52

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2017

SUSTAINABILITY
REPORT