

# APPENDICES



## APPENDIX 1. REPORTING LIMITS, CHANGES, NOTES

GRI 102-45, 102-46, 102-48, 102-49

### Reporting Limits

The Report covers KMG subsidiaries and associated companies where fifty or more percent of voting shares (participation shares) are directly or indirectly owned or held in trust by KMG as well as legal entities whose operations KMG has the right to control.

*The list of legal entities included in the consolidated financial statements comprises the following entities:*

JSC "Exploration Production KMG",  
 JSC "KazTransGas",  
 JSC "KazTransOil",  
 LLP "Atyrau Refinery",  
 LLP "Pavlodar Refinery",  
 LLP "KazMunayGas Onimderi",  
 LLP "KazMunayTeniz",  
 LLP "KazMunayGas-Service",  
 KMG International N.V.,  
 LLP "KMG Karachaganak",  
 LLP "Kazmortransflot",  
 LLP "KMG Drilling & Services",  
 Cooperative KazMunayGas PKI U.A.

*Use of Energy Resources and Energy Efficiency section covers 14 SACs, which fully represent the Group's energy-consuming enterprises.*

**Oil and Gas Production:**

JSC "Ozenmunaygas",  
 JSC "Embamunaygas",  
 JSC JV "Kazgermunai",  
 JSC "Karazhanbasmunay",  
 LLP "KazGPP",  
 JSC "Mangistaumunaygas",  
 LLP "Kazakhturkmunay",  
 LLP "Kazakhoil Aktobe".

**Oil and Gas Transportation:**

JSC NMSC "Kazmortransflot",  
 JSC "KazTransGas",  
 JSC "KazTransOil".

**Oil and Gas Refining:**

LLP "Atyrau Refinery",  
 LLP "Pavlodar Refinery",  
 LLP "PetroKazakhstan Oil Products".

*Use of Water Resources section covers:*

LLP "Kazakhoil Aktobe",  
 LLP "Kazakhturkmunay",  
 JSC "Mangistaumunaygas",  
 JSC "Embamunaygas",  
 JSC "Ozenmunaygas",  
 JSC JV "Kazgermunai",  
 JSC "Karazhanbasmunay",  
 LLP "KazGPP",  
 LLP "Urikhtau Operating",  
 JSC "KazTransOil",  
 JSC "KazTransGas",  
 JSC NMSC "Kazmortransflot",  
 LLP "Pavlodar Refinery",  
 LLP "Atyrau Refinery",  
 LLP "PetroKazakhstan Oil Products",  
 LLP JV CASPI BITUM,  
 LLP Zhambyl Petroleum,  
 LLP "Ozenmunayservice",  
 LLP "Oil Construction Company",  
 LLP "Oil Services Company" – these subsidiaries and associated companies are KMG's main operating assets and have a significant impact on the use of water resources of Kazakhstan.

*Climate Change and Air Quality section covers the following subsidiaries and associated companies of KMG:*

LLP "Kazakhoil Aktobe",  
 LLP "Kazakhturkmunay",  
 JSC "Mangistaumunaygas",  
 JSC "Embamunaygas",  
 JSC "Ozenmunaygas",

JSC JV "Kazgermunai",  
 JSC "Karazhanbasmunay",  
 LLP "KazGPP",  
 JSC "KazTransGas",  
 JSC "KazTransOil",  
 LLP "Pavlodar Refinery",  
 LLP "Atyrau Refinery",  
 LLP "PetroKazakhstan Oil Products",  
 LLP JV "CASPI BITUM" and oil service entities.

*Beneficial Use of Raw Gas section covers the following subsidiaries and associated companies of KMG:*

LLP "Kazakhoil Aktobe",  
 LLP "Kazakhturkmunay",  
 JSC "Mangistaumunaygas",  
 JSC "Embamunaygas",  
 JSC "Ozenmunaygas",  
 JSC JV "Kazgermunai",  
 JSC "Karazhanbasmunay".

*Waste Management section covers:*

LLP "Kazakhoil Aktobe",  
 LLP "Kazakhturkmunay",  
 JSC "Mangistaumunaygas",  
 JSC "Embamunaygas",  
 JSC "Ozenmunaygas",  
 JSC JV "Kazgermunai",  
 JSC "Karazhanbasmunay",  
 LLP "KazGPP",  
 LLP "Urikhtau Operating",  
 JSC "KazTransOil",  
 JSC "KazTransGas",

JSC NMSC "Kazmortransflot",  
 LLP "Pavlodar Refinery",  
 LLP "Atyrau Refinery",  
 LLP "PetroKazakhstan Oil Products",  
 LLP JV "CASPI BITUM",  
 LLP "Zhambyl Petroleum",  
 LLP "Ozenmunayservice",  
 LLP "Oil Construction Company",  
 LLP "Oil Services Company".

*Environmental Costs section covers:*

JSC "Ozenmunaygas",  
 JSC "Embamunaygas",  
 JSC "Karazhanbasmunay",  
 JSC JV "Kazgermunai",  
 LLP "KazGPP",  
 LLP "Ozenmunayservice",  
 LLP "Ural Oil and Gas",  
 LLP "TulparMunayService",  
 LLP "Kazakhturkmunay",  
 LLP "Kazakhoil Aktobe",  
 JSC "Mangistaumunaygas",  
 JSC "KazTransOil",  
 JSC "KazTransGas",  
 JSC MNC "KazMunayTeniz",  
 JSC NMSC "Kazmortransflot",  
 LLP "Oil Construction Company",  
 LLP "Oil Services Company",  
 LLP "Satpayev Operating",  
 LLP "Urikhtau Operating",  
 LLP "KMG Systems & Services",  
 LLP "Atyrau Refinery",  
 LLP "Pavlodar Refinery",  
 LLP "PetroKazakhstan Oil Products",  
 LLP JV "CASPI BITUM".

*HSE Training section covers:*  
 KMG Corporate Centre.

**Production:**

JSC "Ozenmunaygas",  
 JSC "Embamunaygas",  
 JSC "Karazhanbasmunay",  
 JSC JV "Kazgermunai",  
 LLP "Zhambyl Petroleum",  
 LLP "N Operating Company",  
 LLP "UTTIOS",  
 LLP "UDTV",  
 LLP "Argymak Trans Service",  
 LLP "KenKurylysService",  
 LLP "EP-Catering",  
 LLP "KazGPP",  
 LLP "Ozenmunayservice",  
 LLP "Ural Oil and Gas",  
 LLP "TulparMunayService",  
 LLP "Kazakhturkmunay",  
 LLP "Kazakhoil Aktobe",  
 JSC "Mangistaumunaygas",  
 JSC MNC "KazMunayTeniz" (including all business units),  
 LLP "Urikhtau Operating".

**Transportation:**

JSC "KazTransOil",  
 JSC "Intergas Central Asia",  
 LLP "KTG-Aimak",  
 LLP "KTG-Onimderi",  
 LLP "Beineu-Bozoi-Shymkent Gas Pipeline",  
 LLP "Amangeldy Gas",  
 LLP "Asia Gas Pipeline",  
 LLP NMSC "Kazmortransflot",  
 LLP "KMG Systems & Services".

**Refining:**

LLP "Atyrau Refinery",  
 LLP "Pavlodar Refinery",  
 LLP "PetroKazakhstan Oil Products",  
 LLP JV "CASPI BITUM".

**Service:**

LLP "Teniz Service",  
 LLP "KMG Drilling & Services",  
 LLP "KMG Security",  
 LLP "Oil Construction Company",  
 LLP "Oil Services Company",  
 LLP "Mangystauenergomunay",  
 LLP "MunayTelecom",  
 LLP "Oil Transportation Company",  
 LLP "KMG-Engineering" (including branches).

**Updates, Assumptions and Description of the Data Collection, Consolidation and Calculation Methodology**

The data in the Report may slightly differ from the data presented in the consolidated financial statements (CFS) since the estimates are rounded. In such cases, the data presented in the relevant CFS posted on KMG's website are true and final. Due to different calculation methodologies and approaches to information disclosure in the Report, the data given may slightly differ from the data published earlier.

The Report reflects the actual number of the Company employees, the earlier Reports for 2017 presented the staff number.

In 2019, the Company revised its approach to calculation of the actual number of employees (the calculation includes employees of the companies with a participation share of 50% and more; earlier the calculation included employees of the companies with a participation share of 20% and more). The data for the previous periods were also recalculated.

## APPENDIX 2. ENVIRONMENTAL INDICATORS

	Production			Transportation			Refining		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
<b>Greenhouse gas (GHG) emissions</b>									
Direct GHG emissions (CO <sub>2</sub> , mln tonnes)	2.7	2.5	2.3	1.6	2.4	2.7	4.2	4.4	4.8
GHG emission intensity (tonnes of CO <sub>2</sub> per 1,000 tonnes of RWC)	110	101	93	–	–	–	221	216	229
<b>APG flaring</b>									
Flaring (CO <sub>2</sub> , mln tonnes)	0.7	0.3	0.2	–	–	–	–	–	–
Flared gas per unit of produced RWC (tonnes per 1,000 tonnes of produced RWC)	11.0	6.0	2.95	–	–	–	–	–	–
Flaring (bln m <sup>3</sup> )	0.3	0.15	0.08	–	–	–	–	–	–
<b>Energy intensity</b>									
Energy consumption (mln GJ)	39.1	55.2	55.5	37.4	55.6	66.0	43.0	56.8	61.3
<b>Pollutant emissions</b>									
Sulphur oxides (SO <sub>x</sub> ) (thousand tonnes of SO <sub>2</sub> )	7.8	6.7	4.8	0.2	0.2	0.2	6.8	6.5	7.2
Nitrogen oxides (NO <sub>x</sub> ) (thous. tonnes of NO <sub>2</sub> )	5.9	4.8	5.3	3.5	5.5	6.2	3.9	5.9	6.9
<b>Water</b>									
Total water withdrawal (mln m <sup>3</sup> )	49.4	52.2	52.4	30.9	33.5	24.9	12.2	16.2	16.2
Water discharge (mln m <sup>3</sup> )	1.1	1.1	0.9	1.4	1.0	1.0	6.5	8.8	9.2
<b>Waste</b>									
Hazardous (thous. tonnes)	273	220.6	846.4	8.9	2.9	46.6	41.2	39.1	62.2
Non-hazardous (thous. tonnes)	2.7	5.9	12.6	3.4	5.2	4.9	6.6	8.0	7.3
Total waste (thous. tonnes)	276	226.5	859	12.3	8.1	51.5	47.8	47.1	69.5
* of them drill cuttings, onshore (thous. tonnes)	186	174.2	193.2	–	–	–	–	–	–
* of them drill cuttings, offshore (thous. tonnes)	2.05	2.2	0	–	–	–	–	–	–

### Environmental costs \*

	Costs	2016		2017		2018		2019	
		KZT mln	USD mln	KZT mln	USD mln	KZT mln	USD mln	KZT mln	USD mln
<b>1</b>	<b>Costs associated with waste, emissions, pollutant discharge handling and other measures, total</b>	<b>6,682.8</b>	<b>19.5</b>	<b>10,929.4</b>	<b>33.5</b>	<b>11,844.6</b>	<b>34.3</b>	<b>14,847.3</b>	<b>38.79</b>
1.1	Waste treatment and disposal	2,330.6	6.8	5,285.1	16.2	5,833.9	16.9	9,733.2	25.43
1.2	Purification of emissions and pollutant discharges	3,778.3	11.0	5,398.4	16.5	4,531.5	13.1	3,177.6	8.3
1.3	Costs of development and approval of GHG emission documents	52.6	0.15	91.5	0.3	104.4	0.3	101.9	0.27
1.4	Environmental liability insurance	365.5	1.1	97.2	0.3	58.6	0.2	118.2	0.31
1.5	Costs of elimination of environmental damage, including spill response costs	152.1	0.45	1.3	0.004	1,278.8	3.7	1,460.7	3.8
1.6	Costs of environmental compensatory measures	n/a	n/a	55.8	0.17	34.3	0.1	255.7	0.7
<b>2</b>	<b>Investments in prevention of environmental impact and environmental management, total</b>	<b>1,394.7</b>	<b>4.08</b>	<b>1,398.7</b>	<b>4.3</b>	<b>1,035.8</b>	<b>3</b>	<b>1,198.1</b>	<b>3.1</b>
2.1	Employee training and education	246.3	0.7	76.4	0.2	58.6	0.17	18.8	0.5
2.2	External certification and environmental management system development	41.3	0.11	50.0	0.16	47.8	0.14	43.4	0.1
2.3	General environmental management activities	2.1	0.006	3.7	0.01	2.6	0.008	196.7	0.5
2.4	Research and development	263.1	0.76	839	2.6	548.5	1.6	366.0	1.0
2.5	Additional expenses on introduction of cleaner technologies	0.0	0.0	0	0	158.4	0.5	123.5	0.3
2.6	Additional expenses on "green purchasing"	6.1	0.01	68.7	0.2	2.3	0.007	360.3	0.9
2.7	Other environmental management costs	835.6	2.5	360	1.1	217.6	0.6	89.4	0.2

\* Disaggregated indicators may differ slightly from aggregate indicators due to rounding to decimal places

### Environmental payments (regulatory)

	2016		2017		2018		2019	
	KZT million	USD	KZT million	USD	KZT million	USD	KZT million	USD
Air emissions from APG flaring	4,325	12,655.8	3,886	11,917.2	1,998	5,795.2	1,054	2,752.9
Air emissions (other than APG flaring)	1,064	3,113.5	1,217	3,733.9	1,258	3,633.5	1,584	4,138.8
Water pollution	40	117.0	43	131.1	30	97.9	63	164.7
Waste disposal	412	1,205.6	178	547.2	258	749.0	131	342.4

### Location and scope of operations in respect of key biodiversity zones GRI 304-1

Site	Location	Key biodiversity areas (KBA)	Location in relation to KBA	Contract territory (sq. km)	Impact mitigation plan
Kansu	Karakiya District of Mangystau Region	Kenderli-Kayasan Nature Conservation Area and Ustyurt Nature Reserve	Located in the nature conservation area and near the reserve	4,374.6	Decision is made to exit the Project
Samtyr	South-west of Mangystau Region	Kenderli-Kayasan Nature Conservation Area and Ustyurt Nature Reserve	Located close to the nature reserve	10,396.9	Exploratory design stage
Urictau	Mugalzhar District of Aktobe Region	Kozhide-Kumzhargan Local State Nature Reserve	Covers part of the territory	239.9	Hydrogeological monitoring
Alibekmola and Kozhasai	Mugalzhar District of Aktobe Region	Kokzhide Sands Kokzhide underground water	Located in close proximity	156.5	Hydrogeological monitoring
Zhambyl	Kazakhstan Sector of the Caspian Sea, Atyrau District	Special environmentally sensitive zone of Kazakhstan Sector of the Caspian Sea, Novinsky nature reserve	Located in the nature conservation area and covers part of the territory	1,935.2	Regular environmental monitoring, restrictions on offshore oil operations
Isatay	Central part of Kazakhstan Sector of the Caspian Sea, North Mangystau Region	Special environmentally sensitive zone of Kazakhstan Sector of the Caspian Sea	Located in the nature conservation area	1,060.0	Seasonal baseline environmental studies, regular environmental monitoring
Satpayev	North-west of Kazakhstan Sector of the Caspian Sea, Atyrau District	Special environmentally sensitive zone of Kazakhstan Sector of the Caspian Sea	Located in the nature conservation area	1,481.0	Procedures to return the territory and surrender the Contract have started

# APPENDIX 3. GRI CONTENT INDEX

GRI 102-55

For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report. The service was performed on the English version of the report.



GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 101 Foundation 2016</b>					
<b>General disclosures</b>					
<b>GRI 102: General Disclosures 2016</b>					
	102-1 Name of the organisation	2, 20			
	102-2 Activities, brands, products, and services	4, 6, 8, 10, 12, 14, 20, 21			
	102-3 Location of headquarters	118			
	102-4 Location of operations	21			
	102-5 Ownership and legal form	20			
	102-6 Markets served	21			9
	102-7 Scale of the organisation	4, 6, 8, 10, 12, 14, 20, 21, 22			9
	102-8 Information on employees and other workers	12, 88			8
	102-9 Supply chain	10, 20, 22, 52			12
	102-10 Significant changes to the organisation and its supply chain	16, 18, 32, 52			9, 12
	102-11 Precautionary Principle or approach	64		7	14, 15
	102-12 External initiatives	44			17
	102-13 Membership in associations	45			17
	102-14 Statement from senior decision-maker	16, 17, 18, 19			
	102-15 Key impacts, risks, and opportunities	79, AR*			9
	102-16 Values, principles, standards, and norms of behaviour	24, 37		1, 2, 4	5, 10, 16
	102-17 Mechanisms for advice and concerns about ethics	37		2, 6, 10	5, 10, 16
	102-18 Governance structure	25			16
	102-19 Delegating authority	25			

\*AR – Annual Report | 2019 [https://www.kmg.kz/uploads/reports/KMG\\_AR\\_2019\\_ENG\\_30.04\\_1451.pdf](https://www.kmg.kz/uploads/reports/KMG_AR_2019_ENG_30.04_1451.pdf)

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 102: General Disclosures 2016</b>	102-20 Executive-level responsibility for economic, environmental, and social topics	26			
	102-21 Consulting stakeholders on economic, environmental, and social topics	26			
	102-22 Composition of the highest governance body and its committees	28			
	102-23 Chair of the highest governance body	28			
	102-24 Nominating and selecting the highest governance body	29			
	102-25 Conflicts of interests	54			
	102-26 Role of highest governance body in setting purpose, values, and strategy	29			
	102-27 Collective knowledge of highest governance body	30			
	102-28 Evaluating the highest governance body's performance	30			
	102-29 Identifying and managing economic, environmental, and social impacts	30		7	
	102-30 Effectiveness of risk management processes	30, AR			
	102-31 Review of economic, environmental, and social topics	26, 27			
	102-32 Highest governance body's role in sustainability reporting	2, 26, 27			
	102-33 Communicating critical concerns	26, 27			
	102-34 Nature and total number of critical concerns	26, 27			
	102-35 Remuneration policies	AR			
	102-36 Process for determining remuneration	AR			
	102-37 Stakeholders' involvement in remuneration	AR			
	102-38 Annual total compensation ratio	AR			
102-39 Percentage increase in annual total compensation ratio	AR				

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 102: General Disclosures 2016</b>	102-40 List of stakeholder groups	39			17
	102-41 Collective bargaining agreements	94		3	17
	102-42 Identifying and selecting stakeholders	39, 40			17
	102-43 Approach to stakeholder engagement	39, 40			17
	102-44 Key topics and concerns raised	16, 18, 31			
	102-45 Entities included in the consolidated financial statements	102			
	102-46 Defining report content and topic boundaries	2, 41, 102			
	102-47 List of material topics	42, 43			
	102-48 Restatements of information	102			
	102-49 Changes in reporting	102			
	102-50 Reporting period	2, 118			
	102-51 Date of most recent report	118			
	102-52 Reporting cycle	2, 118			
	102-53 Contact point for questions regarding the report	118			
	102-54 Claims of reporting in accordance with the GRI Standards	2			
	102-55 GRI content index	108			
102-56 External assurance	—				

### Specific topics

<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	48			
	103-2 The management approach and its components	48			
	103-3 Evaluation of the management approach	48			
<b>GRI 201: Economic Performance 2016</b>	201-1 Direct economic value generated and distributed	49			8
	201-2 Financial implications and other risks and opportunities due to climate change	79			7, 13
	201-3 Defined benefit plan obligations	50			8
	201-4 Financial assistance received from government	49			

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	93			
	103-2 The management approach and its components	93			
	103-3 Evaluation of the management approach	93			
<b>GRI 202: Market Presence 2016</b>	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	93			8
	202-2 Proportion of senior management hired from the local community	93			10
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	50			
	103-2 The management approach and its components	50			
	103-3 Evaluation of the management approach	50			
<b>GRI 203: Indirect Economic Impacts 2016</b>	203-1 Infrastructure investments and services supported	50, 51, 99			8
	203-2 Significant indirect economic impacts	50, 51			8
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	52			
	103-2 The management approach and its components	52			
	103-3 Evaluation of the management approach	52			
<b>GRI 204: Procurement Practices 2016</b>	204-1 Proportion of spending on local suppliers	52, 53			8
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	54			
	103-2 The management approach and its components	54			
	103-3 Evaluation of the management approach	54			
<b>GRI 205: Anti-Corruption 2016</b>	205-1 Operations assessed for risks related to corruption	54, 55		10	16
	205-2 Communication and training about anti-corruption policies and procedures	54, 55		10	16
	205-3 Confirmed incidents of corruption and actions taken	54, 55			

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	66			
	103-2 The management approach and its components	66			
	103-3 Evaluation of the management approach	66			
<b>GRI 302: Energy 2016</b>	302-1 Energy consumption within the organisation	67			
	302-2 Energy consumption outside the organisation	67			
	302-3 Energy intensity	68			
	302-4 Reduction of energy consumption	67		8	7
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	68			
	103-2 The management approach and its components	68			
	103-3 Evaluation of the management approach	68			
<b>GRI 303: Water 2016</b>	303-1 Water withdrawal by source	70			6
	303-2 Water sources significantly affected by withdrawal of water	70			6
	303-3 Water recycled and reused	70			6
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	72			
	103-2 The management approach and its components	72			
	103-3 Evaluation of the management approach	72			
<b>GRI 304: Biodiversity 2016</b>	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	73, 74, 75, 76, 107			14, 15
	304-2 Significant impacts of activities, products, and services on biodiversity	77, 107			14, 15
	304-3 Habitats protected or restored	77		8	14, 15
	304-4 Total number of IUCN Red List species and National Conservation List species with habitats in areas affected by operations	77		8	14, 15
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	78			
	103-2 The management approach and its components	78			
	103-3 Evaluation of the management approach	78			

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 305: Emissions 2016</b>	305-1 Direct GHG emissions	80, 81			
	305-2 Energy indirect GHG emissions	80, 81			
	305-3 Other indirect GHG emissions	81			
	305-4 GHG emissions intensity	80			
	305-5 Reduction of GHG emissions	83		8	13
	305-6 Emissions of ozone-depleting substances (ODS)	81			
	305-7 NO <sub>x</sub> , SO <sub>x</sub> , and other significant emissions	81			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	83			
	103-2 The management approach and its components	83			
	103-3 Evaluation of the management approach	83			
<b>GRI 306: Effluents and Waste 2016</b>	306-1 Water discharge by quality and destination	70			
	306-2 Waste by type and disposal method	83			12
	306-3 Significant spills	79			
	306-4 Transportation of hazardous waste	83			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	85			
	103-2 The management approach and its components	85			
	103-3 Evaluation of the management approach	85			
<b>GRI 307: Environmental Compliance 2016</b>	307-1 Non-compliance with environmental laws and regulations	85			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	88, 89, 90			
	103-2 The management approach and its components	88, 89, 90			
	103-3 Evaluation of the management approach	88, 89, 90			
<b>GRI 401: Employment 2016</b>	401-1 New employee hires and employee turnover	91			8
	401-2 Benefits provided to full time employees that are not provided to temporary or part-time employees	94, 95			8
	401-3 Parental leave	94, 95			8

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	94			
	103-2 The management approach and its components	94			
	103-3 Evaluation of the management approach	94			
<b>GRI 402: Labor / Management relations 2016</b>	402-1 Minimum notice periods regarding operational changes	95			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	58			
	103-2 The management approach and its components	58			
	103-3 Evaluation of the management approach	58			
<b>GRI 403: Occupational Health and Safety 2016</b>	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	60			3
	403-3 Workers with high incidence of injuries or high risk of diseases	60			
	403-4 Health and safety topics covered in formal agreements with trade unions	61			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	97			
	103-2 The management approach and its components	97			
	103-3 Evaluation of the management approach	97			
<b>GRI 404: Training and Education 2016</b>	404-1 Average hours of training per year per employee	98			4
	404-2 Programs for upgrading employee skills and transition assistance programmes	97			4
	404-3 Percentage of employees receiving regular performance and career development reviews	92			4
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	93			
	103-2 The management approach and its components	93			
	103-3 Evaluation of the management approach	93			
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	405-1 Diversity of governance bodies and employees	93			10
	405-2 Ratio of basic salary and remuneration of women to men	93			10

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	54			
	103-2 The management approach and its components	54			
	103-3 Evaluation of the management approach	54			
<b>GRI 406: Non-Discrimination 2016</b>	406-1 Incidents of discrimination and corrective actions taken	55		10	16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	94			
	103-2 The management approach and its components	94			
	103-3 Evaluation of the management approach	94			
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	94		3	16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	94			
	103-2 The management approach and its components	94			
	103-3 Evaluation of the management approach	94			
<b>GRI 408: Child Labor 2016</b>	408-1 Operations and suppliers with significant risk of child labour usage	94		5	16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundaries	94			
	103-2 The management approach and its components	94			
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<b>GRI 409: Forced or Compulsory Labor 2016</b>	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labour	94		4	16
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its Boundary	23			
	103-2 The management approach and its components	23			
	103-3 Evaluation of the management approach	23			
<b>GRI 417: Marketing and Labeling 2016</b>	417-1 Requirements for product and service information and labeling	23		8, 9	9, 12

GRI Standard	Description	Page number	Omission/ reason for omission	Association with the UN Global Compact Principles	Association with 17 Sustainable Development Goals
<b>GRI G4 Sector Disclosures: Oil and Gas</b>	OG1 Volume and type of estimated proved reserves and production	4			
	OG3 Total amount of renewable energy generated by source	68		9	7
	OG4 Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored	77		8	14, 15
	OG5 Volume and disposal of formation or produced water	70			
	OG6 Volume of flared and vented hydrocarbons	82			
	OG7 Amount of drilling waste and strategies for treatment and disposal	85			
	OG8 Benzene, lead and sulphur content in fuels	23			
	OG13 Number of process safety events by business activity	62			3

## APPENDIX 4. ABBREVIATIONS AND ACRONYMS

<b>AG</b>	Amangeldy Gas LLP
<b>AGP</b>	Asia Gas Pipeline LLP
<b>APG</b>	Associated petroleum gas
<b>AR</b>	Atyrau Refinery
<b>AR</b>	Annual Report
<b>CC</b>	Corporate Centre
<b>CDP</b>	Carbon Disclosure Project
<b>CNG</b>	Compressed natural gas
<b>DBK</b>	Development Bank of Kazakhstan
<b>EIA</b>	Environmental Impact Assessment
<b>EMG</b>	Joint Stock Company Embamunaygas
<b>ERP</b>	Enterprise Resource Planning
<b>ES</b>	Emergency situation
<b>ESG</b>	Environmental, Social, and Governance
<b>FAR</b>	Fatal Accident Rate (per 100 million man-hours)
<b>FERs</b>	Fuel and energy resources
<b>GMI</b>	Global Methane Initiative
<b>GRI</b>	Global Reporting Initiative
<b>HCs</b>	Raw hydrocarbons
<b>HSE</b>	Health, safety, industrial and fire safety, environmental protection, emergency prevention
<b>IAOT</b>	International Association of Oil Transporters
<b>ICA</b>	Joint Stock Company Intergas Central Asia
<b>IFRS</b>	International Financial Reporting Standards
<b>IOGP</b>	International Association of Oil & Gas Producers
<b>IUCN</b>	International Union for Conservation of Nature and Natural Resources
<b>JSC</b>	Joint Stock Company
<b>KazGPP</b>	Kazakh Gas Processing Plant Limited Liability Partnership
<b>KBM</b>	Joint Stock Company Karazhanbasmunai
<b>KGM</b>	Joint Venture Kazgermunai Limited Liability Partnership
<b>KMG</b>	Joint Stock Company National Company KazMunayGas
<b>KOA</b>	Joint Stock Company Kazakhoil Aktobe
<b>KPI</b>	Key performance indicator
<b>KTG</b>	Joint Stock Company KazTransGaz
<b>KTGA</b>	KazTransGas Aimak Limited Liability Partnership
<b>KTM</b>	Kazakhturkmunai Limited Liability Partnership
<b>KTO</b>	Joint Stock Company KazTransOil
<b>LLP</b>	Limited Liability Partnership



<b>LTIR</b>	Lost Time Injury Rate (per million man-hours)
<b>mIn</b>	Million(s)
<b>MMG</b>	Joint Stock Company Mangistaumunaygas
<b>NC</b>	National company
<b>OMG</b>	Joint Stock Company Ozenmunaygaz
<b>OSRL</b>	Oil Spill Response Limited
<b>PJSC</b>	Public joint stock company
<b>PKI</b>	PetroKazakhstan Inc.
<b>PKOP</b>	PetroKazakhstan Oil Products JSC (Shymkent Oil Refinery)
<b>POCR</b>	Pavlodar Oil Chemistry Refinery Limited Liability Partnership
<b>RES</b>	Renewable Energy Sources
<b>RoK</b>	Republic of Kazakhstan
<b>RTA</b>	Road traffic accident
<b>SACs</b>	Subsidiaries and associated companies
<b>SDG</b>	Sustainable Development Goals
<b>SDM</b>	Meeting of the KMG Board of Directors and Management Board on Sustainable Development
<b>SR</b>	Sustainability report
<b>UN GC</b>	United Nations Global Compact
<b>UN</b>	United Nations
<b>USNR</b>	Ustyurt State Nature Reserve

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Report date: September 2020  
 The previous Sustainability Report was published in November 2019

kazakhstanika.kz

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The mark of responsible forestry