



ENERGY SAVING AND ENERGY EFFICIENCY PROGRAMMES

KMG considers ongoing efforts to enhance energy efficiency a high priority in environmental protection and operational efficiency improvements. The KMG Corporate Centre collects and analyses energy consumption and energy efficiency-related data, monitors the dynamics, identifies opportunities for improvement, and conducts year-on-year and peer benchmarking.

KMG's energy saving and energy efficiency efforts are based on the methodology set out in ISO 50001 Energy management systems, an internationally recognised best-practice framework for systemic energy management.

Since 2017, KMG has had in place a roadmap for KMG subsidiaries, including jointly controlled entities and joint ventures, to save energy and improve energy efficiency in 2017–2020. Objectives set out in KMG's energy saving roadmap:

1. Increasing senior management's accountability, introducing energy efficiency KPIs for managers responsible for energy saving and energy efficiency
2. Promoting efficient use of energy
3. Reducing energy payments by enhancing energy efficiency and energy saving efforts
4. Ensuring energy efficiency in procurement of power equipment manufacturing, retrofit and overhaul services
5. Raising private investments to improve energy efficiency, including by entering into energy service contracts
6. Improving energy efficiency compliance controls
7. Ensuring compliance with statutory energy saving and energy efficiency requirements

ENERGY CONSUMPTION

In 2019, total energy consumption amounted to 182.8 mln GJ, up 9% year-on-year, including 12.7 mln GJ in electricity, 4.7 mln GJ in heat, 1.7 mln GJ in motor fuel, and 163.7 mln GJ in boiler and heating oil. KMG's total energy consumption is divided between three business segments – Upstream, Midstream and Downstream.

The year-on-year energy consumption increase was mainly due to a higher natural and associated gas consumption for the Group's own operational needs. In 2019, KMG Group's self-generated energy amounted to 642.8 mln kWh in electricity and 3,850.6 thous. Gcal in heat.

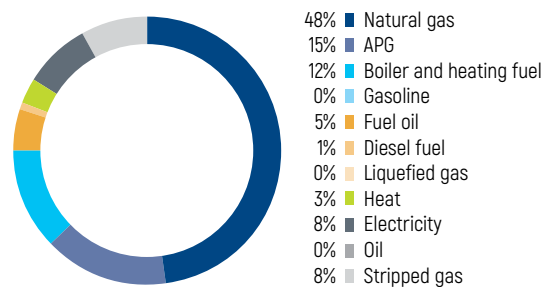
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In 2019, KMG Group's specific fuel and energy consumption in the upstream sector averaged at 2.4 GJ per one tonne of hydrocarbons produced, still 60% above the International Association of Oil & Gas Producers (IOGP) average for 2017, i.e. 1.5 GJ per one tonne of hydrocarbons produced. In oil production, specific energy consumption increase was primarily due to a higher water cut at mature fields, which means a higher density of the fluid produced and, accordingly, a higher energy consumption for artificial lift.

KMG Group's key strategic energy saving and energy efficiency initiatives include process equipment upgrades, deployment of energy saving technologies, optimisation of heat generation and consumption, and development of the Group's own generation assets including APG-fired generation.

In 2019, 69 energy saving and energy efficiency initiatives were implemented. Target annual fuel and energy savings amounted to 0.8 mln GJ, which in physical terms corresponds to 11.3 mln kWh of electricity, 91.3 thous. Gcal of heat and 8,508 thous. m³ of natural gas.

ENERGY CONSUMPTION IN 2019 BY RESOURCE TYPE, %



CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

KMG’s long-term Development Strategy prioritises the following climate-related initiatives:

- Greenhouse gas (GHG) emissions management
- Reduction of regular APG flaring
- Improvement of per unit output GHG emissions intensity and overall energy efficiency

In 2019, KMG Group’s Emissions Management Policy was approved, its core principles being:

- strict compliance with the regulations and KMG’s obligations and commitments
- compliance with the set emission limits and pollutant emission limits, and observing GHG emission quotas
- clarity on roles and responsibilities, improving competencies, training and awareness raising
- regular recording, taking stock and monitoring of emissions
- phasing out regular flaring of raw gas in hydrocarbon production
- implementing initiatives to reduce KMG’s GHG emissions and carbon footprint
- managing carbon assets
- continuously improving emissions management activities.

As we seek to boost oil and natural gas production to meet the growing global energy demand, we prioritise initiatives minimising the negative environmental impact of our operations, ensuring compliance with environmental laws, efficient use of natural resources, and continuous improvements to our environmental activities.

We are focused on ensuring the transparency of our environmental reporting, and for the second year running KMG has topped the Environmental Responsibility Rating of Oil and Gas Companies in Kazakhstan compiled by the World Wide Fund for Nature (WWF) Russia and CREON Group, supported by the Ministry of Energy of the Republic of Kazakhstan.

On 29 July 2019, KMG issued its first verified 2018 Greenhouse Gas Emissions Report¹ under the CDP (Carbon Disclosure Project²) climate change programme, disclosing data on direct and indirect GHG emissions across all KMG’s assets, including its subsidiaries in Romania and Georgia.



The data include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). According to the report data, in 2018, direct carbon dioxide emissions across KMG amounted to 9.3 mln tonnes (2017: 8.4 mln tonnes). The year-on-year increase in emissions was due to higher gas transportation volumes and new emission sources. The greenhouse gas emissions data were verified by an independent accredited organisation’s report. Data for 2019 will be disclosed in KMG’s CDP report to be published in Q3 2020.

¹ For more details see KMG’s published reports which are publicly available at: KMG Group’s GHG emissions report 2018, KMG’s CDP Climate Change Questionnaire.

² CDP is an independent non-profit organisation. Since 2002, it has been collecting carbon emission and climate change related data on behalf of investors. Thousands of companies across the world’s major economies report their carbon emissions inventories and use CDP to disclose their environmental information. CDP climate ratings assigned to companies based on their disclosures assessment are published by leading financial news agencies (Thomson Reuters, Google Finance) along with the reporting companies’ financial metrics and are considered by investors in asset valuations and related risk assessments.

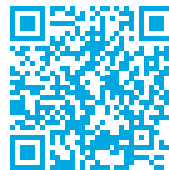


“We are pleased to have published KMG’s first-ever CDP climate change programme report. As the entire world seeks solutions to the climate change problem, KMG is committed to managing the climate risk by reducing emissions, launching an energy efficiency CAPEX programme, tracking its progress and sharing best practices with other global players. This CDP report will enable more effective measurements and management of our environmental impact.”

said KMG HSE Managing Director

Vincent Spinelli.

The first KMG forum on greenhouse gas emissions management (Climate Session) took place in Nur-Sultan on 26 November 2019. The forum gathered together around 100 industry delegates and served as a platform for a meaningful dialogue between professionals and sharing of experiences and knowledge. Lively discussions at the Forum centred around GHG emissions management at KMG, anticipated amendments to GHG laws, emissions trading scheme, KMG’s reporting under the CDP climate change programme and other important topics.



For more details on our air protection programme see our Sustainability Report.