



## CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

### Management

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

- ◆ Greenhouse gas (GHG) emissions management
- ◆ Reduction of routine flaring
- ◆ Improvement of GHG emissions intensity per unit of production and overall energy efficiency.

KMG fully supports the government's decarbonisation commitment. Climate change issues are closely monitored at a strategic level: KMG's Board of Directors and its Health, Safety, Environment and Sustainable Development Committee.

The Committee meetings in 2020 reviewed in detail the following key matters:

- ◆ Increasing APG utilisation rates
- ◆ Water management
- ◆ Climate change

### Risks and opportunities

The corporate risk management system is a key component of the corporate governance system, and is used to identify, evaluate, monitor and mitigate potential risks that may hinder the achievement of strategic goals. The Company implements a range of initiatives to minimise these risks, with risk reports submitted to the Board of Directors every quarter.

<sup>1</sup> For more details, see KMG's published reports, which are publicly available at: KMG Group's 2019 GHG emissions report, KMG's CDP Climate Change Questionnaire.

<sup>2</sup> 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 from 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.

### Information disclosure

KMG's carbon footprint has been calculated for the second year running. In August 2020, KMG issued a report on greenhouse gas emissions<sup>1</sup> in 2019 as part of its disclosures under the Carbon Disclosure Project (CDP<sup>2</sup>) Climate Change Questionnaire, disclosing data on direct and indirect GHG emissions, GHG emissions management, key risks and opportunities across all KMG's assets, including its international assets in Romania and Georgia.

The data include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). According to the report, in 2019, direct carbon dioxide emissions across KMG Group amounted to 9.7 mln tonnes (9.3 mln tonnes in 2018). The year-on-year increase in emissions was due to higher gas transportation volumes and new emission sources. Methane and nitrous oxide emissions are converted into tonnes of CO<sub>2</sub> equivalent using global emission factors (28 for methane and 256 for NO<sub>x</sub>).

The greenhouse gas emissions data were verified by an independent accredited organisation's report for each subsidiary or associate. Data for 2020 will be disclosed in KMG's CDP report to be published in Q3 2021. We seek to ensure consistency and comparability when preparing our disclosures. We are committed to enhancing disclosures and increasing the scope of reporting around our Scope 3 emissions.



For more details on air protection, see  
KMG's Sustainability Report





## Efficient use of APG

In reducing our GHG footprint, we focus on increasing associated petroleum gas (APG) utilisation while minimising flaring. The measures taken so far within our raw gas processing and development programmes have increased internal APG use for heat and electricity generation.

In 2020, APG utilisation rate was 98%, with flaring at 2.2 tonnes per 1,000 tonnes of produced hydrocarbons (6 tonnes in 2018, and 2.95 tonnes in 2019), down 24% year-on-year and 79% lower than the IOGP industry average.

### Raw gas flaring

Indicator	2017	2018	2019	2020
Total raw gas flaring, mln m <sup>3</sup>	315.8	148.9	80.2	57.6
Raw gas utilisation, %	85	93	97	98
Raw gas flaring rate, tonnes per 1,000 tonnes of produced hydrocarbons	11	6	2.95	2.2

KMG strives to minimise raw gas flaring. In 2015, KMG supported the World Bank's Zero Routine Flaring by 2030 initiative. Raw gas flaring reports under the Initiative are submitted on an annual basis.



For more details, see KMG's Sustainability Report 



## WASTE MANAGEMENT

KMG Group's production facilities regularly monitor and control all waste handled by facilities (including contractors' waste), take measures to minimise waste generation and earmark annual funding for recycling/reuse and/or disposal of generated, accumulated and historical waste, with KMG spending on this topping KZT 13 bln in 2020.

Given the urgency of improving the environment and its commitment to environmental safety, KMG carries out projects to reduce waste storage, eliminate historical waste, and remediate oil contaminated soils.

Oil producing assets have landfills for temporary storage of oily waste. OzenMunaiGas had five landfills and Karazhanbasmunai had one with accumulated waste. These landfills were cleaned up and waste disposed of between 2016 and 2019. Mangistaumunaigaz had 10 landfills with oily waste. All landfills have been cleaned up and remediated by now, with land remediation completed on the last remaining landfill in 2020.

Currently, waste generated by OzenMunaiGaz, Mangistaumunaigaz, and Karazhanbasmunai is sent for disposal to specialist contractors without landfilling.

KazTransOil has been remediating disturbed soils along the Uzen–Atyrau–Samara pipeline, with 20.07 ha of land along the pipeline remediated over the past 10 years, and another 4 ha slated for remediation along the pipeline's second section (984–985 km) during 2021. A total of KZT 4.5 bln has been invested in the remediation of historically polluted land, with remediated lands returned to local executive authorities so that they can be put to use.