

In 2019, a Memorandum of Cooperation was signed between the Ministry of Ecology, Geology, and Natural Resources and KMG, with waste disposal and oil contaminated soil remediation commitments until 2024 (inclusive) covering Mangistaumunaigaz, OzenMunaiGaz and Karazhanbasmunai. An inventory of contract lands was completed in 2019, identifying waste volumes and profiles and providing inputs for oil contaminated soil remediation projects, which were designed and obtained government approvals in 2020. Safe and effective oily waste disposal solution were selected and recommended, and oil contaminated land remediation schedules were developed as part of the projects.

Under the Memorandum, OzenMunaiGaz and Mangistaumunaigaz disposed of 558,419 tonnes of historical waste in 2020, with all activities under the Memorandum scheduled for completion by the end of 2024.

For more details, see KMG's Sustainability Report.



## Asset retirement obligations

### Oil and gas assets

Under the terms of certain contracts, in accordance with legislation and regulatory legal acts, KMG has legal obligations to dismantle and liquidate fixed assets and restore land plots at each of the fields. In particular, KMG's obligations include the gradual closure of all non-productive wells and actions to permanently terminate operations, such as dismantling pipelines, buildings and reclamation of the contract area, as well as decommissioning and environmental pollution obligations at the production site.

The Company calculates asset retirement obligations separately for each contract. The amount of the liability is the present value of the estimated costs that are expected to be required to settle the liability, adjusted for the expected inflation rate and discounted using average long-term risk-free interest rates on government debt of transition economies, adjusted for risks inherent in the Kazakhstan market.

As of December 31, 2020, the carrying amount of the Company's provision for liabilities to liquidate oil and gas assets was KZT 66 billion (December 31, 2019: KZT 54 billion) (details in the consolidated financial statements in Note 25).

### Trunk oil and gas pipelines

In accordance with the Law of the Republic of Kazakhstan "On Trunk Pipeline", which entered into force on July 4, 2012, two subsidiaries of KMG, JSC "KazTransOil" and JSC "Intergas Central Asia", which is a subsidiary of JSC "KazTransGas", have a legal obligation to liquidate the main pipeline after the end of operation and the subsequent implementation of measures to restore the environment, including land reclamation. The provision for the obligation to abandon pipelines and land reclamation is estimated based on the cost of dismantling and reclamation works calculated by KMG. As of December 31, 2020, the carrying amount of the KMG Group's reserve for the obligation to abandon pipelines and land reclamation of the Company amounted to KZT 114 billion (as of December 31, 2019: KZT 100 billion).

For details, see the consolidated financial statements in Note 25



## Environmental remediation

KMG also makes estimates and makes judgments on the formation of reserves for obligations for environmental cleanup and rehabilitation. Environmental costs are capitalized as an expense based on or attributable to their future economic benefits.

The Company's environmental remediation reserve represents management's best estimates based on an independent assessment of the expected costs required for the KMG Group to comply with the existing Kazakh and European regulatory frameworks. As of December 31, 2020, the carrying amount of the provision for environmental liabilities was KZT 65 billion (December 31, 2019: KZT 60 billion).

Details in the consolidated financial statements in Note 25



## WATER PROTECTION

KMG's core business is concentrated in Central Asia, a region where water is a precious and scarce resource. We recognise our responsibility to society and the environment and are making every effort to ensure efficient use of water resources.

On 1 July 2019, KMG made an official commitment to contribute to water conservation efforts in Kazakhstan. At an HSE forum held for CEOs of KMG Group companies, Alik Aidarbayev, Chairman of KMG's Management Board, signed a personal Statement of Commitment to efficient water management (KMG's eight water-related principles). His initiative was backed up by the CEOs of KMG subsidiaries and associates, who signed similar statements of commitment on behalf of their respective companies. These signed statements have been made available on the official websites of KMG Group companies.

The statements set out KMG's key principles for water use, the eight water-related principles, structure the water management approach used

by KMG subsidiaries and associates, and enhance the commitment to fresh water conservation among KMG's management and employees.

Projects are underway to curb discharges and reduce fresh water withdrawal from natural sources.

### Atyrau Refinery

One of the major ongoing environmental initiatives of Atyrau Refinery, the Tazalyq project, includes an upgrade of mechanical and biological wastewater treatment facilities, the construction of an advanced treatment facility, and the upgrade of evaporation fields.

The water treatment facilities upgrade will enable us to reduce fresh water withdrawal from the Ural River, as the refinery will use a multi-stage wastewater treatment system that removes up to 99% of pollutants, thus allowing the refinery to multiply the volume of its water reuse and return up to 50% of treated wastewater back into the process. The project will allow to stop using evaporation fields and prevent further impacts on Atyrau's groundwater, flora, fauna, and air. The project is expected to be completed in the late 2023. Water withdrawal from the Ural River will be reduced by 38%.

### Construction of desalination plants near the Kenderly recreational zone, Mangystau Region

OzenMunaiGas and KMG Engineering signed a Memorandum of Understanding and Cooperation with the Akimat of Zhanaozen. The memorandum reclassifies the desalination plant feasibility study being prepared by KMG Engineering as a social project as per the official instruction by Askar Mamin, Prime Minister of the Republic of Kazakhstan, dated 18 September 2019. The KMG-funded desalination plant project is planned to be constructed near the Kenderly recreational zone in the Mangystau Region. Its planned capacity is 50,000 m<sup>3</sup> per day.

### JSC Karazhanbasmunai

Given the lack of fresh water sources near the Karazhanbas field and Karazhanbasmunai's need in large volumes of water to generate steam for thermal recovery, the company faced water shortages and, hence, the threat

of declining oil production and related financial losses.


The construction and installation of Karazhanbasmunai's desalination plant in the Mangystau Region commenced in September 2019 and is currently nearing completion.

The desalination plant is designed to recycle and reuse formation water and provide process water to improve recovery from the Karazhanbas reservoirs by steam injection.

The plant project is mission critical for the Company as it will not only provide desalinated water for steam generation but also resolve the issue of produced water disposal, enabling improved formation pressure maintenance capabilities for the field.

In 2020, the Company expanded its CDP reporting scope, with water management disclosures posted on the CDP's website for the first time as part of the 2019 Water Security Questionnaire.



For more details on KMG's water management and related projects, see KMG's Sustainability Report. 

For more details, see KMG's published reports, which are publicly available at: CDP 2019 Water Security Questionnaire 