Waste management

In accordance with applicable environmental standards and legislation, the Fund takes active measures to ensure safe industrial waste management. We aim to reduce waste generation through improved technological processes, increased recycling and reuse, which not only improves the environmental situation in the regions but also increases the resource efficiency of our operations.

GRI 3-3 Waste management is organised within the framework of environmental policies and meets the requirements of the Environmental Code of the Republic of Kazakhstan. We have developed Individual Waste Management Programmes and Waste Management Action Plans for each industrial facility. The enterprises closely monitor contractors working with waste. In the procurement process, a number of portfolio companies, in particular Samruk-Energy JSC, check whether the contractors have the necessary licences and whether the logistics for safe waste management are adequate.

GRI 3-3 We conduct waste inventories and for each type of waste we develop methods of waste accumulation, taking into account its hazard class, toxicity, physical condition and other characteristics. Records are kept of waste generated, treated, utilised, neutralised, transferred to or received from others, and disposed of. Data are summarised quarterly and annually. Hazardous waste requires specialised disposal, while non-hazardous waste is subject to separate collection and recycling. For separate collection of waste, special places for its temporary storage are equipped at the enterprises.

GRI 306-3 SASB In 2024, 110.5 million tonnes of waste were generated, which is 8% higher than in the previous year. At the same time, the amount of hazardous waste was 0.37 million tonnes, down 6% from 2023.

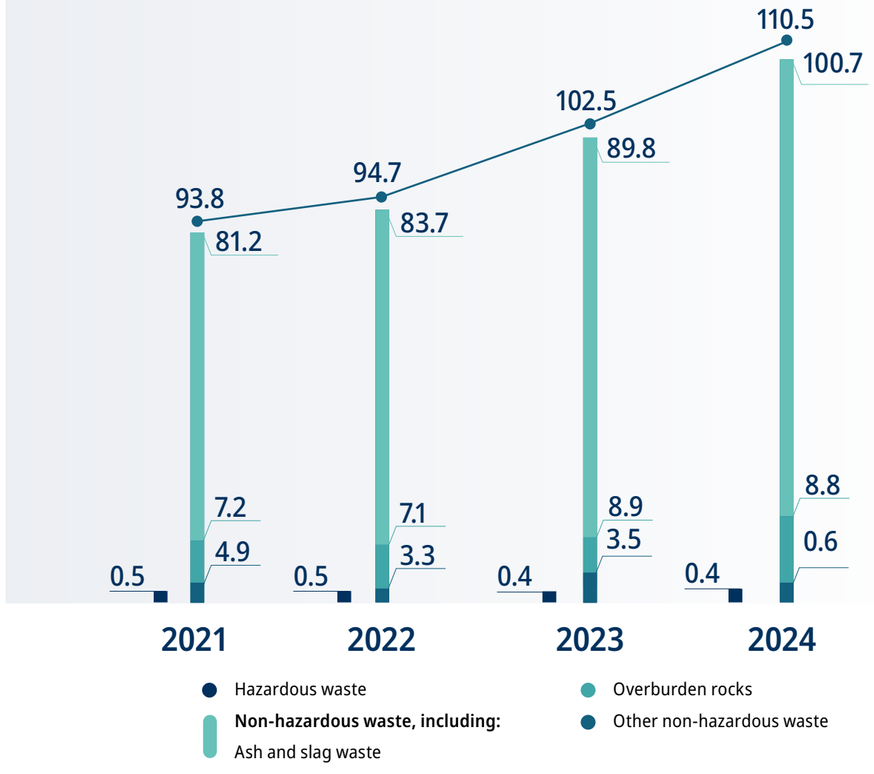
GRI 306-2 The main part is non-hazardous waste (99%) generated in the energy sector of the Fund in the process of coal mining (overburden) and electricity generation by coal-fired CHPPs (ash and slag waste). The volume of waste in this sector in 2024 increased by 7.7% compared to 2023 due to an increase in waste rock content at Bogatyr-Komir LLP.

The second largest waste generation sector is the mining and metallurgical sector of the Fund. It accounted for 1.2 million tonnes of waste in 2024, of which 0.001 million tonnes are hazardous. The oil and gas sector generated 0.44 million tonnes of waste, of which 0.36 million tonnes were hazardous waste.

We pay attention to reducing the volume of placed overburden by developing plans to adapt the excavated areas of the Severny and Bogatyr open pits for use as internal dumps. To prevent oxidation and spontaneous combustion of carbon-containing rocks, inert materials are used to isolate and compact the surface layer of the dumps.

To improve efficiency in precious metal waste management, we commissioned a new facility to process our own production waste at the Tau-Ken Altyn refinery. With a capacity of 15 tonnes per year, the facility allows us to recover over 90% of precious metals (gold and silver) from solid production waste, thereby eliminating the accumulation of precious metals in work-in-progress and reducing the overall volume of production waste at the refinery. The new workshop reused and recycled 0.084 tonnes of waste in 2024. We plan to develop this area and provide a similar waste recycling service to other enterprises.

Waste generation, million tonnes



RADIOACTIVE WASTE MANAGEMENT

The uranium mining and processing sector generates small amounts of solid (SRW) and liquid radioactive waste (LRW). This is mainly radioactively contaminated soil and spent productive solutions. A total of 25.7 thousand tonnes of SRW and 129.8 thousand tonnes of LRW will be generated in 2024. The entire volume of generated LRW is disposed at the tailings storage facility of UMP JSC, which is managed in accordance with the Tailings Storage Facility Waste Management Regulations, containing the conditions of waste storage and disposal in accordance with the Code of the Republic of Kazakhstan "On Subsoil and Subsoil Use" and the Environmental Code of the Republic of Kazakhstan for the period of 2023–2042.

We carry out safe and responsible radioactive waste management in accordance with the requirements of the legislation of the Republic of Kazakhstan and international standards. In 2024, NAC KazAtomProm JSC will continue to implement the Radioactive Waste Management Programme for 2023–2030, aimed at improving the efficiency of waste management and introducing best global practices.

REMEDIATION OF HISTORICAL CONTAMINATION AND LAND REMEDIATION

We continue works on utilisation of historical wastes and clean-up of contaminated land. In 2024, NC KazMunayGas JSC disposed of 1,099 thousand tonnes of historical oil-containing waste, rehabilitated their disposal sites and started work to clarify the remaining volumes of oil waste. The total area of disturbed land reclamation totalled 172 hectares.

In particular, Karazhanbasmunai JSC completely eliminated historical pollution in the contract territory; 518,879 tonnes of historical oil waste were disposed of in the period 2021–2024. They eliminated oil waste pits in the coastal zone of the Caspian Sea, 3 units of onshore pits and cleaned 246 oil-contaminated areas in the contract territory of Karazhanbasmunai.

We carry out reclamation of worked-out areas of ash dumps, including their restoration and transformation into environmentally safe and functional zones. In 2024, the estimated value of the fund for the liquidation of ash dumps totalled KZT 3,739.3 million, which is 18.96% higher than in the previous year. This increase is due to an increase in the cost of works and materials for ash dumps reclamation and restoration of disturbed lands.

In the mining and metals sector, the liquidation works at the Uvanas deposit continued in 2024, with the plugging of all process wells completed, all site sand pits removed and the levelling of capping works carried out. All liquidation works, including demolition and dismantling of buildings and structures at the industrial site, are expected to be completed in 2025.

In the reporting year, we started working on progressive liquidation at JV Akbastau JSC, where 80 wells were liquidated. This practice implies the liquidation of spent process units at geotechnological uranium mining sites before the end of subsoil use contracts, which will have a positive impact on the environment by reducing the duration of potential harmful effects, will contribute to reducing financial obligations for liquidation works in the future, and fully takes into account the interests of the local population in the regions of operation.

Biodiversity

GRI 3-3 Globally, ecosystems are under threat and need comprehensive protection. According to the 2024 Sustainable Development Index, conservation of terrestrial ecosystems is among the six most pressing issues in Kazakhstan.

To comprehensively protect ecosystems, the new Environmental Code of Kazakhstan includes a chapter on biodiversity conservation and describes a biodiversity offset mechanism that establishes the principle of prevention, minimisation, mitigation and compensation of biodiversity loss, designed to address the potential impacts of industrial and infrastructure projects at the planning stage. In 2024, UNDP[42] in partnership with the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan has developed a draft Concept for the conservation and sustainable use of biodiversity in Kazakhstan for a ten-year period.

We recognise the significant impact of the Fund's portfolio companies on Kazakhstan's ecosystems and consider biodiversity conservation to be an important criterion for the well-being of the population and the sustainability of the country's economic development. The Fund's portfolio companies manage biodiversity issues at their level. The environmental policies of industrial companies fix areas of activity in the field of ecosystem protection, a number of companies have developed and are implementing programmes to prevent and minimise impacts on flora and fauna, strict control over the state of the environment in areas near unique natural sites, and compensation for biodiversity losses is made if necessary.

[42] United Nations Development Programme in Kazakhstan.