Atmospheric air quality

We take air pollution very seriously, as it can have a negative impact'on people's health. We support companies in our portfolio in reducing harmful emissions, utilizing the best technologies, and promptly updating and repairing production systems. GRI 3-3

All air emissions are strictly regulated by environmental legislation. Harmful substance emissions are carried out only within the established norms, which are agreed upon with state authorities and specified in authorization documents.

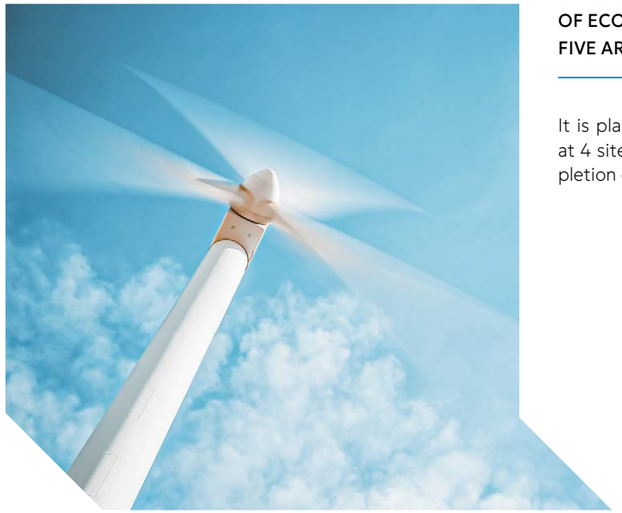
We also regularly monitor air conditions in the areas of our operations by conducting industrial environmental monitoring four times a year at the boundary of the sanitary protection zone and emission sources by accredited laboratories using state-of-the-art analysis methods. In addition, we are continuing our program to equip 16 facilities in Hazard Category I (in the oil and gas production, oil and gas processing, gas chemical, power generation and mining and metallurgical sectors) with automated emission monitoring systems (AEMS) to enable real-time monitoring of emissions into the environment. GRI 3-3

The methods approved by state authorities calculate emissions of pollutants into the atmosphere: GRI 3-3 GRI 305-7

- Methodology for calculation of gross emissions of harmful substances into the atmosphere for oil refining and petrochemical enterprises;
- Methodology for determining air pollutant emissions for thermal power plants and boiler houses;
- Methodology for calculating air pollutant emissions at gas transport and storage facilities;
- Methodology for calculation of pollutant emissions into the atmosphere from facilities of the 4th category;
- Methodology for calculating emission standards from non-organized sources;
- Methodology for calculating concentrations of harmful substances in the atmospheric air from emissions of enterprises;
- Methodology for determining emission norms for the environment, etc.

OF THE 16, 8 SITES HAVE BEEN INSTALLED IN AEMS, OF WHICH THREE SITES TRANSMIT DATA TO THE MINISTRY OF ECOLOGY, GEOLOGY AND NATURAL RESOURCES, AND FIVE ARE IN THE PROCESS OF CONNECTION.

It is planned that by the end of 2024 AEMS will be installed at 4 sites, and in 2025-2026 at 4 more sites due to the completion of their modernization terms. GRI 3-3



Emissions of pollutants

The volume of pollutant emissions for 2023 for the Fund Group was – 499.9 thousand tonnes, which is 0.8% less than'last year's value. GRI 305-7 SASB

The most significant emissions (71%) come from the electricity and heat generation sector, amounting to 354.9 thousand tonnes. The main sources of emissions are thermal power plants, such as Ekibastuz GRES-1, Ekibastuz GRES-2 Power Station and Bogatyr-Komir Company, which use fossil fuels. Compared to 2022, emissions from the electricity and heat generation sector decreased by 1.2 percent. Samruk-Energy JSC tracks its progress on the "Green Power Generation Indicator. Amount of CO/Sox/Nox/solids emissions per 1 kWh". In 2023, the specific emission of pollutants was 9.5 g/kW*h. To reduce pollutant emissions at its production facilities, the work on the repair and modernization of dust and gas purification systems was carried out for the amount of KZT 1.6 billion. Samruk-Energy JSC was the first to implement AEMS at Ekibastuz GRES-2 Power Station.

The oil and gas production and refining sector accounts for 24% of emissions (119.5 thousand tonnes), which is 1% lower than last year. The sector continues to implement measures to reduce gas flaring. To minimize the negative impact on the atmospheric air, the replacement of technically obsolete burners on oil heating furnaces; construction of complex gas treatment and processing units is underway; systematic control over the condition of burner devices of furnaces is carried out, according to the schedule of regime and adjustment works, etc. GRI 3-3

The gas transmission sector accounts for 4% of emissions (18.2 thousand tonnes). Compared to 2022, emissions increased by 11% due to increased gas consumption for combustion at Beineu-Shymkent Gas Pipeline LLP. To manage the impact on atmospheric air, the Company has an Emissions Management Policy. Measures to comply with the standards of permissible emissions of pollutants have been identified in the medium term. GRI 3-3

Share of pollutant emissions from the electricity and heat generation sector

71%

Emissions in the railway transportation sector amounted to 4.3 thousand tonnes, which was 0.9% of the total. Compared to the previous year, the volume of emissions decreased by 5%.

The contribution to pollutant emissions of the other portfolio companies of the Fund is less than 1%. . GRI 305-7

Volume of pollutant emissions into the atmosphere, thousand tonnes