

Mitigating Impact on Air Quality

Metinvest closely follows developments in environmental protection technology to select the optimal solutions for its operations. During the reporting period, we made progress on several key projects to reduce atmospheric emissions, including modernising gas treatment systems and units, blast furnaces and the aspiration systems of BOF shops.



Modernising Ilyich Steel's sinter plant

In 2020, Metinvest completed the initial scope of the environmental modernisation at Ilyich Steel's sinter plant, which took seven years. This is one of the largest environmental initiatives in the history of independent Ukraine. The overall investments are to exceed US\$160 million.

Italy's Termokimik Corporation was the equipment and technology vendor for the project and Metinvest Engineering¹¹ was the general contractor.

The technical solution implemented as part of the project involves a complex, two-stage gas cleaning system. In the first stage, a coarse dust-scrubbing system uses modern Hurriclone cyclones to capture coarse dust particles for reuse in production. In the second stage, powerful bag filters clean dust and sulphur compounds from the gas, reducing dust emissions more than ten-fold.

The aim of the work was to reduce the sinter plant's dust emissions by 90% and sulphur dioxide emissions by 46%. Overall, the project will help to decrease dust emissions in Mariupol by one third.

¹¹ Metinvest Engineering is an engineering company that supports the Group's major investment projects, from the strategic planning phase to implementation.

"I am grateful to everyone who has worked on this truly historical modernisation project throughout the years. Ilyich Steel's sinter plant is now not only one of the largest in Europe, but also one of the most environmentally friendly and modern."

Yuriy Ryzhenkov,
Chief Executive Officer

In addition to modernising its sinter plant, in 2020, Ilyich Steel built new gas cleaning facilities for the casthouse and stockhouse of blast furnace no. 3, which will further reduce dust emissions. Next on the agenda is the construction of gas cleaning facilities for the casthouses of blast furnaces nos. 4 and 5. When finished, these projects should reduce dust emissions from the blast furnaces by 65% in total. Another important initiative at Ilyich Steel is modernising the gas cleaning facilities at the mixer department, which is expected to cut dust emissions by 25%.

In 2020, Azovstal reduced its dust emissions by almost 11% year-on-year by modernising blast furnace no. 3, the gas treatment system in the hot metal desulphurisation department, and the aspiration system for the mixer department in the BOF shop. Further plans include upgrading the gas cleaning facilities for the rotary kilns and BOFs, as well as building aspiration systems to eliminate fugitive emissions from this shop. In the coming years, Azovstal also plans to build a system to clean coke gas from hydrogen sulphide using the ammonia sulphide circuit method.

During the reporting period, Northern GOK began replacing the gas cleaning facilities of its Lurgi 552-A roasting machine, which is expected to reduce dust emissions by 40%. It also launched several important projects, including modernising the gas cleaners in the limestone and bentonite grinding facility, as well as the gas cleaning systems in the pellet dispatching unit.

In addition, to modernise the laboratory equipment used to monitor air emissions and air quality on the boundary of Northern GOK's sanitary protection zone, it will launch two investment projects entailing the purchase of 11 units of laboratory measurement equipment in 2021.

Kryvyi Rih Machining and Repair Plant replaced the bag filters in the gas cleaning system for furnace no. 6 and automated the cleaning process, including installing a signal system in steel foundry shop no.1 that increased the efficiency of dust cleaning. The plant also expects to reduce dust emissions by performing capital overhauls and modernising the gas cleaning systems in its foundry shops, as well as the aspiration systems for the drying kilns in its drop-hammer plant.

In 2020, Avdiivka Coke finished assembling the gas cleaning equipment in the area of line no. 4 of the crystallisation department of its phenol and naphthalene production facility. This project will continue in the area of lines nos. 1-3 of the facility.

During the reporting period, Metinvest continued to implement a systematic programme of major maintenance on the coke furnace chambers at Azovstal, Avdiivka Coke and Zaporizhia Coke. In 2020, Dnipro Coke was added to this programme after it became part of Metinvest. The project's goal is to ensure that dust and gas emissions remain well below the acceptable regulatory concentrations.

GRI 305-7

Air emissions, '000 tonnes (excluding GHG emissions)

Year	Nitrogen oxides (NO _x)	Sulphur oxides (SO _x)	Carbon monoxide (CO)	Solids (dust)	Total
2018	16	20	271	30	345
2019	15	18	288	26	354
2020	15	18	299	23	362

During the reporting period, air emissions increased by 2% year-on-year, driven by greater output of the Group's main products. Notably, over the past three years, there has been a gradual reduction in the volumes of dust emissions, including a 12% year-on-year decrease in 2020.

This trend is the result of our long-term environmental programme, the most significant contribution of which was the modernisation of Ilyich Steel's sinter plant, as well as several initiatives at Azovstal, Northern GOK and Central GOK.