

Managing Waste



GRI 306-1; 306-2

Responsible waste management is one of Metinvest's priorities. The production cycle generates a certain volume of industrial waste, including overburden and treatment sludge (tailings) from ore extraction and enrichment, chemical by-products from coke production, as well as slag and iron-containing sludge from hot metal and steel production. Our facilities also generate other types of waste, such as fluorescent lamps, batteries, used oil and household waste.

Throughout our operations, we strive to minimise the volume of waste that we generate, store waste safely in specially designated areas, maximise its reuse and recycling through replacement of iron ore raw materials with scrap and the production of crushed rock for road repair and construction.

In accordance with applicable legislative requirements and the Group's internal regulations, all assets regularly collect data about the volumes and types of waste that they generate. Such information is collected daily for most technological waste and quarterly for other types of waste. Each asset has coordinators responsible for gathering the required information and uploading the digital forms into Metinvest's centralised database.

We work with various waste management contractors, who are subject to a multi-level review for compliance with our internal procedures. We also work carefully to ensure that waste processing, recycling and disposal procedures comply with applicable legislation and regulations. To prevent violations by contractors, Metinvest closely checks all required documents both before and during the performance of waste management services. In addition, our environmental function performs random on-site audits of the largest specialised organisations to ensure the compliance of their hazardous waste management facilities with all regulatory requirements.

The Group deposits its waste in specially designated areas, such as slag and sludge storage facilities. In addition, three of our iron ore assets have tailings storage facilities (TSFs). These structures are commonly located in areas that feature relatively low seismic activity and exposure to strong rains. All of the Group's TSFs have sufficient size to ensure many years of operation. Metinvest fully complies with regulatory requirements and applicable legislation to retain the licences required to operate such facilities. We closely monitor storage facilities and minimise potential risks. We also designate employees responsible for checking each TSF twice a day. External control is performed by a special commission that conducts on-site audits twice a year, as well as government bodies that analyse the condition of the TSFs once a year.

Ensuring the long-term safety of tailings storage facilities

Following the tragic collapse in 2019 of a tailings dam in Brazil, companies throughout the world have worked to ensure the long-term safety of such facilities and revise their operating procedures.

As Metinvest's number one priority is to ensure the safety of its employees and communities, the Health, Safety and Environmental Committee of the Supervisory Board tasked the management to have an independent survey of its tailings storage facilities conducted. We engaged competent international experts, SRK Consulting Limited (UK), to perform a dam safety operational review audit in accordance with the relevant governing principles of the Mining Association of Canada (MAC) guidelines and Canadian Dam Association (CDA) dam safety guidelines, which are currently considered to represent international best practice.

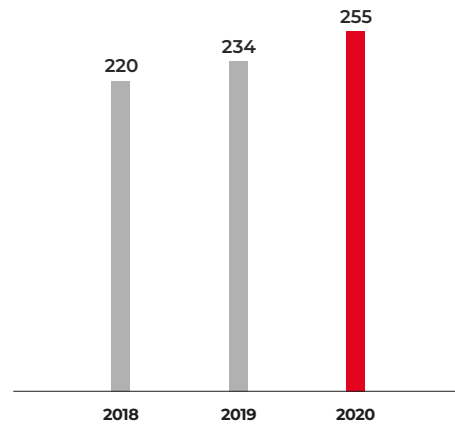
During the audit, a field observation of the dams at all tailings storage facilities was performed to check their resilience. Specialists of SRK Consulting Limited assessed the existing methods and measures in place to monitor the condition of the dams currently in use by the assets. The audit found that the Group is in compliance with local regulations. We received recommendations regarding further metrics to study through instrumental surveys and samples, which will be conducted using specialised equipment.

We will continue to track available technological solutions that make it possible to enhance the safety of our TSFs in line with international best practice and to ensure they remain safe for both communities and the environment for generations to come.



GRI 306-3; 306-4; 306-5

Total volume of waste generated, million tonnes



In the reporting period, Metinvest generated 255 million tonnes of industrial waste from production, 97% of which was non-hazardous, mostly overburden and tailings from the iron ore producers.

The 9% year-on-year increase in the volume of generated waste in 2020 was caused by a change in the share of overburden in the total volume of extracted materials, as the share of waste rock and valuable ore during quarrying depends on the natural conditions of mineral deposits. This factor also has a significant effect on the amount of recycled or transferred waste. All non-hazardous waste is deposited in special slagheaps and tailings storage facilities and some of it can be to construct haul roads in open-pit mines and for mine restoration.

In 2020, the volume of recycled waste was 24%, down 4 percentage points year-on-year. This decrease is the result of two factors. First, more intensive utilisation of slag products from the Mariupol steelmakers and a higher volume of construction waste at Northern GOK in 2019. Second, greater iron ore production in the reporting period.

Total weight of waste, million tonnes

Year	Total weight of landfill waste ¹⁵	Weight of waste transferred to third parties ¹⁵	Weight of recycled waste ¹⁵	Total weight of generated waste
2018	159	1	60	220
2019	166	3	66	234
2020	193	3	60	255

GRI 306-1; 306-2

During the production process, Azovstal generates by-products such as slag, which is stored in slagheaps. It uses equipment from AMCOM (the US) to extract ferrous materials from the slag for further processing in the BOF shop, which helps to reduce the use of pellets and sinter. This technology was introduced as part of Mariupol's environmental programme for 2012-20. In addition to processing metal-containing components, since 2008, Azovstal also uses BOF slag in the blast furnace process, which helps to reduce the total volume of slag generated.

Under the Memorandum of Cooperation with the Municipality of Mariupol on Joint Development of the City and Regional Programmes, Azovstal and Ilyich Steel continued to implement the Social Slag project, which involves the transfer of slag products free of charge to the utility assets of the city and region to be used for road repairs. In 2020, a total of 436,000 tonnes of slag products were transferred under the programme.

In 2020, Mariupol Machining and Repair Plant engaged qualified auditors to conduct a waste inventory to identify new types of waste and determine the extent to which they posed an environmental hazard. In addition, it developed and implemented measures aimed at minimising negative impacts. This included updating the waste management guidelines, establishing storage areas for newly identified waste at structural units, updating temporary storage schemes and arranging for initial accounting, as well as resolving the issue of waste transfer for recycling by specialised assets.

Consistent with the aim of the Stockholm Convention on Persistent Organic Pollutants to eliminate the use of polychlorinated biphenyl (PCB) in equipment such as electric transformers, condensers or other receiving units that contain liquid substances, Ilyich Steel transferred 9 electric transformers containing PCBs for recycling during the reporting period, leaving it with 60 more such electric transformers in use.

In 2020, Northern GOK implemented projects to reuse overburden from Annivskiy open-pit mine. These measures are aimed at ensuring the rational use of the plant's mining allotment and reducing the areas used for depositing industrial waste. Overburden and tailings were used to construct and repair of roads and rail links at mines, as well as dams of tailings storage facilities. Similar measures were undertaken at Central GOK.

In the near future, we expect to fully automate the process of collecting data about the weight and types of waste in a centralised database in the existing SAP Enterprise Resource Planning (ERP) system.

¹⁵ This may include waste generated in previous periods.