

# 05 Ecological well-being



# Ecological well-being

TNFD Rb, Ma, Mb

## Nornickel's contribution to the Ecological Well-being national goal and national project

**Relevant UN SDGs**

**Related federal projects**

Big Clean-Up

Forest Conservation

Clean Air

Biodiversity Conservation and Ecotourism Development

Water of Russia

Closed-Loop Economy

Aspect	Targets and objectives under the Ecological Well-Being national goal	Relevant goals and performance targets approved by Nornickel <sup>1</sup>	Nornickel's key results	Nornickel's key projects
Waste	<p>a) [...] Involvement in economic turnover of at least 25% of production and consumption waste as secondary resources and feedstock</p> <p>c) Eliminate by the end of 2030 at least 50% of facilities causing accumulated environmental damage [...]</p>	<p>Compliance of waste disposal facilities with Russian regulatory requirements</p> <p>Share of non-mineral waste recycling</p> <p>Share of mineral waste (other than gypsum waste) recycling</p> <p>Share of gypsum waste recycling</p>	<p><b>Onsite waste recovery in 2024</b> was 26.7 mln t, with 2.9 mln t of waste recovered offsite.</p> <p><b>Spending on waste management in 2024</b> – RUB 37.4 billion.</p> <p><b>As part of the Clean Norilsk project</b>, 406 buildings were dismantled, 83.5 kt of scrap metal and 1.1 mln t of waste were collected and removed, and an area of 4.8 mln sq m was cleaned as at the end of 2024.</p> <p><b>Spending on the Clean Norilsk programme in 2024</b> – RUB 2.7 billion</p>	<ul style="list-style-type: none"> <li>Clean Norilsk programme</li> <li>Implementation of initiatives and projects contributing to increased waste recycling and treatment</li> </ul> <p><a href="#">For more details, please see the Waste and Tailings Storage Facilities section</a></p>

<sup>1</sup> The mandatory part of the 2031 Environmental and Climate Change Strategy is shown in blue, and the voluntary part, in orange.

Aspect	Targets and objectives under the Ecological Well-Being national goal	Relevant goals and performance targets approved by Nornickel <sup>1</sup>	Nornickel's key results	Nornickel's key projects
Air	b) Phased halving of emissions of hazardous pollutants with the greatest negative impact on the environment and human health in cities with high and very high levels of air pollution by 2036	<p>SO<sub>2</sub> emissions</p> <p>Reduction of SO<sub>2</sub> emissions</p>	<p><b>Air pollutant emissions</b> were reduced by 23.5% y-o-y to 1.3 mln t.</p> <p>Sulphur dioxide recovery at Nadezhda Metallurgical Plant exceeded <b>99%</b>.</p> <p><b>Spending on air protection and climate change prevention in 2024</b> was RUB 45.2 billion</p>	<ul style="list-style-type: none"> <li>Sulphur Project</li> <li>Air quality monitoring and forecasting system</li> </ul> <p><a href="#">For more details, please see the Air section</a></p>
Water	d) Halving the amount of untreated wastewater discharged into major water bodies by 2036 [...]	<p>Compliance with the Russian regulatory requirements as regards pollutant concentration in discharges</p>	<p><b>Contaminated wastewater discharge</b> declined by 6% y-o-y to 68.7 Mcm in 2024 (insufficiently treated to 31.3 Mcm, and contaminated untreated, to 37.4 Mcm).</p> <p><b>Total wastewater discharge</b> was 223.8 Mcm.</p> <p>In 2024, 81% of all water used by the Company was recycled and reused.</p> <p><b>A total of 13.9 kt of wastewater and over 282 t of waste</b> were collected by waste collecting vessels.</p> <p><b>Spending on wastewater management in 2024</b> – RUB 7.9 billion</p>	<ul style="list-style-type: none"> <li>Improving the closed-loop water system</li> <li>Preventing pollution from entering rivers</li> <li>Regular monitoring of wastewater discharge</li> <li>Cleaning polluted water bodies and their shores</li> </ul> <p><a href="#">For more details, please see the Water section</a></p>
Biodiversity and forest conservation	e) Forest and biodiversity conservation, sustainable development of protected areas, and promoting environmental tourism across all national parks	<p>Disturbed land rehabilitation in 2022–2031 (reclamation, reforestation, and clean-up)</p> <p>Achievement of net zero biodiversity losses as a result of the Company's operations (Δ IEHI<sup>2</sup>)</p>	<p>A total of 235 ha were <b>covered by reclamation, reforestation, and clean-up activities</b> in 2024.</p> <p>In 2024, the Company <b>released 3 million</b> fingerlings of Siberian sturgeon and nelma into water bodies of the Krasnoyarsk Territory.</p> <p>In 2024, the Company planted over <b>174 thousand pine saplings</b> in the Trans-Baikal Territory and sowed <b>5 kg of pine seeds</b> (about 710 thousand seeds) in the Murmansk Region.</p> <p><b>Cooperation with protected areas:</b> signed an agreement with a new partner, the Kandalaksha Nature Reserve, and continued cooperation with the Lapland Nature Reserve and the Pasvik Nature Reserve in 2024.</p> <p><b>Spending on biodiversity conservation and protection of natural areas in 2024</b> – RUB 2.5 million</p>	<ul style="list-style-type: none"> <li>Big Scientific Expedition</li> <li>Cooperation agreements with the Russian Ministry of Natural Resources and Environment and nature reserves within our footprint</li> <li>Cooperation agreement with the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO)</li> <li>Employee volunteering initiatives aimed at forest conservation and biodiversity</li> </ul> <p><a href="#">For more details, please see the Biodiversity and Improving the Well-Being of Local Communities sections</a></p>

<sup>2</sup> Integrated Ecosystem Health Indicator.

# Environmental management



GRI 3-3 / SASB EM-MM-160a.1

Nornickel strives to mitigate and where possible prevent the negative environmental impact exerted by its production and supply operations.

Nornickel's senior management and Business Units are responsible for meeting the Company's environmental obligations, goals, and KPIs. The Company's units take steps to achieve the goals, comply with statutory requirements, and honour voluntary commitments in line with their competencies.

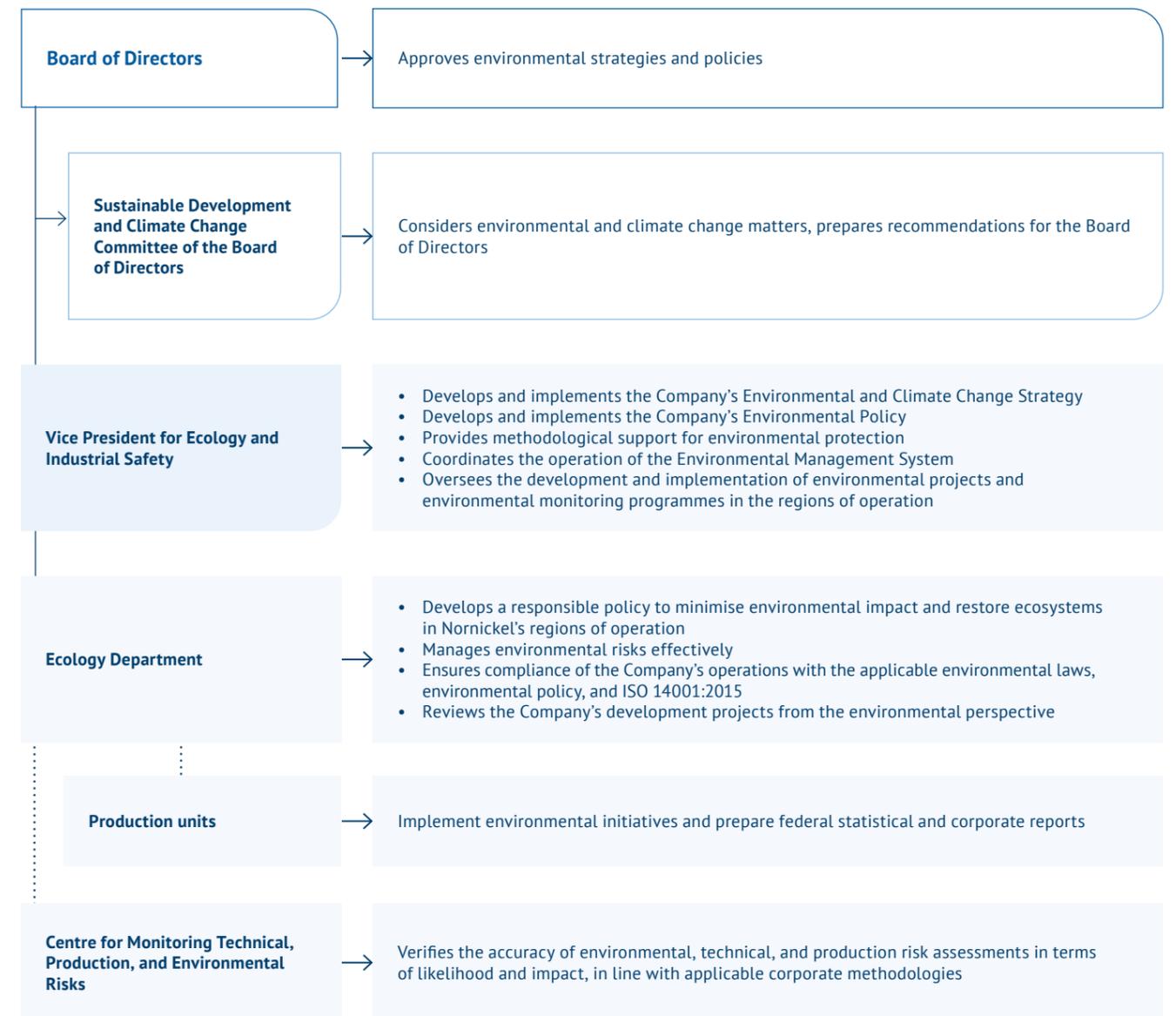


The Company's 2031 Environmental and Climate Change Strategy helps Nornickel effectively manage its environmental impact and monitor environmental conditions across its footprint. On top of this, Nornickel has in place dedicated environmental internal regulations drafted in accordance with Russian laws and best global practices.

For a list of key environmental internal regulations of the Company, please see [Nornickel's 2023 Sustainability Report](#).

When planning and conducting its operations, Nornickel complies with the applicable Russian environmental laws and regulations. During a state expert review, design documents and the results of engineering surveys for all ongoing projects undergo mandatory assessment for compliance with applicable laws.

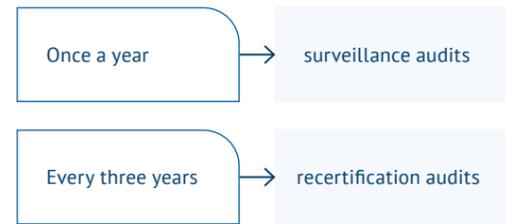
GRI 2-12, 2-13, 2-14 / TNFD Ga, Gb



## Environmental management system

The Environmental Management System (the "System") operates as part of the Corporate Integrated Quality and Environmental Management System, which enables the Company to harmonise relevant initiatives with operations of other functions (including production management, finance, overall safety). The resulting synergies translate into both better productivity in general and advances in environmental safety in particular.

The System is certified to ISO 14001:2015 (with the certificates available on the [Company website](#)). To confirm compliance, the Company and its Business Units pass surveillance and recertification audits.



In December 2024, the first surveillance audit of the seventh certification period was conducted by international certification auditors, establishing the Company's full conformity with ISO 14001:2015. Nor Nickel has demonstrated effective maintenance and continuous improvement of its Corporate Integrated Management System.

In 2024, the systematic approach to environmental management ensured the sustained high level of performance and further enhancement across the following areas:

- The application of a risk-based process approach to environmental protection contributed to improved prevention and mitigation of the Company's potential negative environmental impacts
- Environmental safety initiatives (including the Sulphur Project) were continued
- Specialised training sessions and briefings contributed to enhancing employees' environmental awareness
- Compliance with international environmental standards contributed to enhancing the Company's reputation, strengthening the trust of customers and other stakeholders, and improving Nor Nickel's competitiveness both domestically and internationally

### Precautionary principle

GRI 2-23

The Company analyses risks and assesses impacts by engaging qualified experts during the planning and implementation of each project. If the analysis identifies any material risks, mitigation initiatives are developed, and a decision may be taken to abandon the project. This procedure is aligned with MMC Norilsk Nickel's Procedure Rules for Investment Project Risk Management.

In 2024, the Company implemented both day-to-day and major initiatives to minimise environmental risks, including follow-up on their performance. Nor Nickel continued to improve its tools used to assess the performance of its initiatives.

Environmental KPIs were used to better motivate employees and encourage a more responsible attitude towards mitigation initiatives.

## Stakeholder engagement on environmental matters

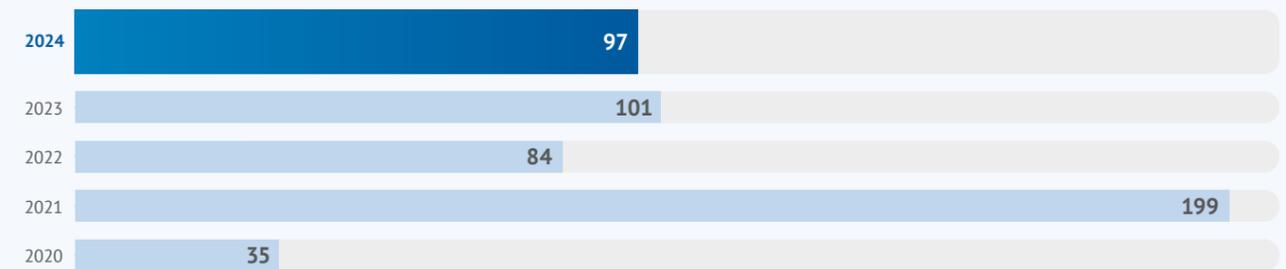
Reducing an environmental footprint is included in the agenda of internal and public events

for more details, please see the [Stakeholder Engagement](#) section

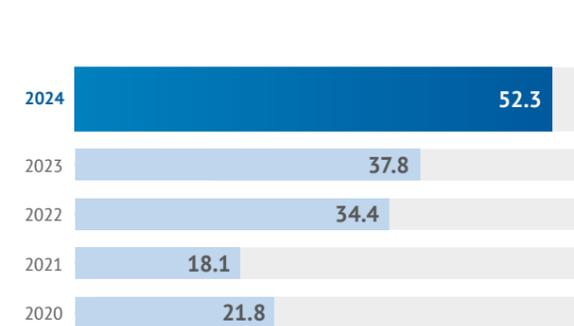
## Environmental protection expenditures

MED-21 / TNFD A11.0, TNFD A16.0, TNFD 21.1

### Environmental costs and expenditures (RUB bn)

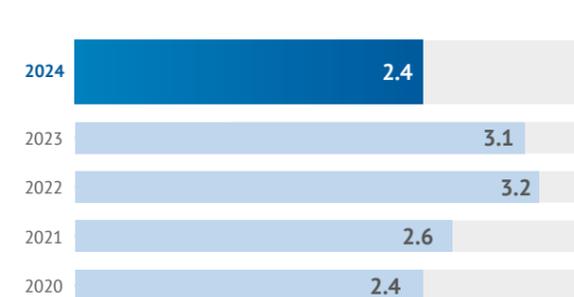


### OPEX for environmental protection (RUB bn)



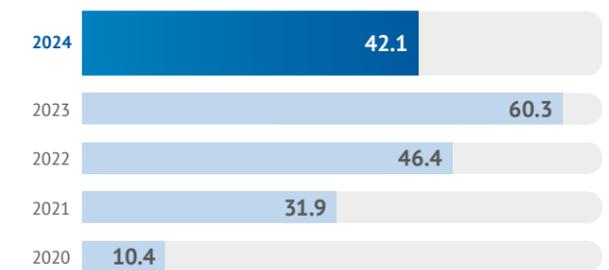
The 38.4% increase in OPEX for environmental protection in 2024 was due to the commissioning of new production infrastructure, higher tariffs, and increased prices.

### Charges for permissible and excess emissions, effluents, and disposal of production and consumption waste (RUB bn)



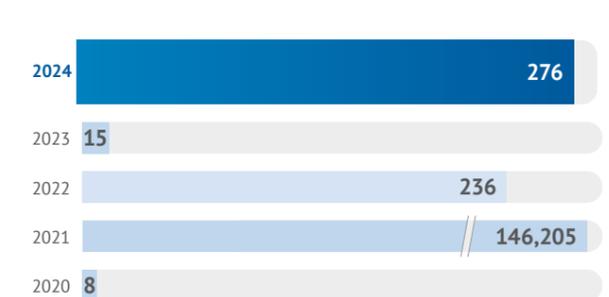
In 2024, charges for permissible and excess emissions (effluents) and disposal of production and consumption waste dropped almost 23% y-o-y.

### Capital investments to ensure environmental protection and sustainable use of natural resources (RUB bn)



The decline in investments in 2024 resulted from the optimisation of investment activities and the reallocation of funds to subsequent years.

### Charges paid by the Company to remedy damages arising from non-compliance with environmental laws (excluding environmental fines)<sup>1</sup> (RUB mln)



Charges paid by the Company in 2024 to remedy damage arising from non-compliance with environmental laws were largely related to compensation for soil disturbance caused by meltwater and stormwater from the section of Talnakh Concentrator's tailings storage facility that is currently under construction.

<sup>1</sup> RUB 146 billion paid in 2021 to compensate for the environmental damage caused by the fuel spill at CHPP-3 in 2020.

# Air

GRI 413-2 GRI 14.10.3

## Nornickel's approach to air protection



MMC Norilsk Nickel's operations emit over 60 air pollutants, with sulphur dioxide accounting for 97% of their total volume. One of Nornickel's [2031 Environmental and Climate Change Strategy](#) priorities is to cut sulphur dioxide emissions.

In line with the [Environmental Policy](#), MMC Norilsk Nickel and its Business Units undertake to implement strategic environmental projects and initiatives

to reduce emissions. Our major effort in this area in terms of scale and funding is the Sulphur Project, a landmark initiative under the Clean Air federal project (the Ecological Well-Being national project).

## Sulphur Project

The technology of Nornickel's flagship environmental project to capture and recover sulphur dioxide (SO<sub>2</sub>) comprises converting off-gases of metallurgical operations into sulphuric acid and then neutralising it to produce gypsum. The resulting gypsum pulp from the neutralisation process is stored in a dedicated gypsum storage facility.

Comprehensive testing of the first process line was started at Nadezhda Metallurgical Plant in autumn 2023, with the line gradually ramped up to full capacity during 2024.

In 2024, construction of the principal and infrastructure facilities continued, various pieces of process equipment were installed, and pre-commissioning and comprehensive testing were

conducted. A second sulphuric acid production line was commissioned to increase sulphur dioxide recovery through the recovery of off-gases from the plant's second flash smelting furnace.

At the sulphuric acid production section, construction work was carried out on the third sulphuric acid production line. Its subsequent launch will enable continuous sulphuric acid production across the full circuit, ensuring the project's sulphur dioxide recovery targets are met while also allowing for timely equipment maintenance.

A more than 99% recovery rate was achieved, a figure confirmed by government agencies during control and oversight inspections. An increase in sulphur dioxide recovery by up to two times is projected for 2025.

Total investment in the comprehensive project at Nadezhda Metallurgical Plant is projected to reach RUB 250 billion upon full completion.

The first results of the Sulphur Project at Nadezhda Metallurgical Plant led to a record annual reduction in sulphur dioxide emissions in 2024.

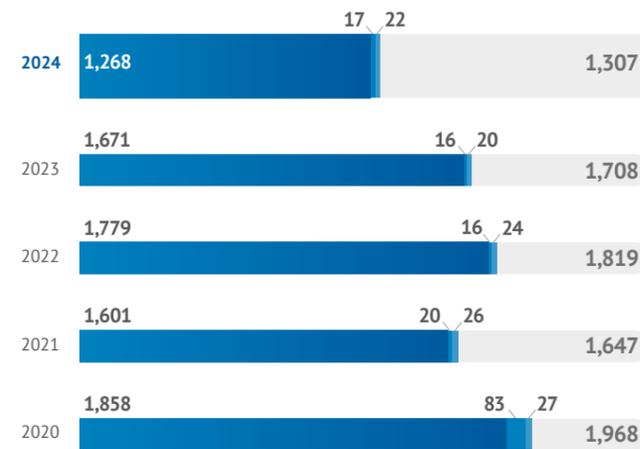
## Upgrades of assets

In order to reduce air pollution, the Kola site's metals and mining enterprise continued to implement a number of activities in 2024 as part of the project to upgrade the system for dust removal from gases generated by the local refining shop. The Company replaced electrostatic precipitators for treating off-gases from fluidised bed furnaces, installed advanced heat-exchange

equipment, and revamped the sulphuric acid section. The installation of state-of-the-art equipment will enhance the dust removal from off-gases generated by the refining shop's fluidised bed furnaces before the gases are directed to the sulphuric acid section. This will improve gas recovery and the quality of the resulting sulphuric acid, thereby reducing emissions of sulphur compounds.

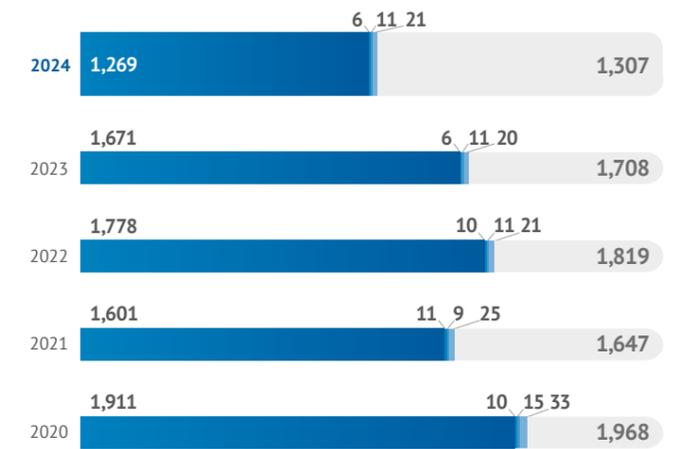
GRI 305-7 / SASB EM-MM-120a.1 / MED-19 GRI 14.3.2

### Air emissions by pollutant (kt)



- The Norilsk site's production enterprise (Talnakhskoye, Oktyabrskoye, Norilsk-1 deposits)
- The Kola site's metals and mining enterprise
- Other units and entities

### Air pollutant emissions (kt)



- Sulphur dioxide
- NOx
- Particulate matter
- Other pollutants

In 2024, the Group's total emissions amounted to 1.3 mln t, down 23.5% y-o-y.

This significant decline was driven by the launch of two process lines under the Sulphur Project for comprehensive testing, which boosted the sulphur dioxide recovery rate at Nadezhda Metallurgical Plant to 99.1%.

Importantly, the Company achieved this record reduction in emissions while maintaining output close to 2023 levels.



### Use of ozone-depleting substances

Nornickel neither produces nor uses ozone-depleting substances (ODS) in its products, except for extremely limited amounts with the following applications:

- A chemical agent for laboratory-based chemical analysis
- Filling and topping up compressors in air conditioning units, industrial air conditioners, and carbonated water machines, using refrigerant as a cooling agent for medium- and low-temperature refrigerating equipment

The Company reports on the use of such substances to the Russian Ministry of Natural Resources and Environment as required.

There were no ODS emissions in 2024.

**6** sources

at Nadezhda Metallurgical Plant

**1** source

at Copper Plant

**16**

**environmental monitoring stations**

were installed in the Norilsk Industrial District to set up the system

### Environmental monitoring programme: an automated emissions control system and compact atmospheric air quality monitoring stations

The programme targets two areas: mandatory government emissions control and voluntary urban air quality monitoring.

Compliance with legal requirements is ensured through the implementation of an automated emissions control systems at enterprises, which transmit data to regulatory authorities every 20 minutes on a continuous basis. An automated emissions control system is already used at Nadezhda Metallurgical Plant, with another system piloted at Copper Plant. In 2025, the Company plans to use these control systems to track the reduction in sulphur dioxide emissions as a result of the Sulphur Project at Nadezhda Metallurgical Plant.

In 2024, Nornickel launched the first integrated real-time air quality monitoring system for urban communities<sup>1</sup> in the Arctic Circle. The air quality index is calculated based on the extent to which permissible concentration limits are exceeded for four major pollutants. Current air quality indicators of the Norilsk Urban District are available on Norilsk's official website.

In addition to observations, the Company forecasts pollution levels, which is especially important during periods of adverse weather conditions, when the accumulation of pollutants in the atmosphere is particularly active. Specialised systems using artificial intelligence analyse air flow patterns and predict the trajectory of emission plumes in advance. To reduce the risk of air pollution, Nornickel may scale back production ahead of adverse weather conditions.



Nornickel consistently meets all commitments made by the Company under the Clean Air federal project, using the most advanced methods and best available technologies. This is a powerful example of how honouring our commitments can drive positive change. The launch of the air quality monitoring system in Norilsk became a symbol of the Company's responsibility not only to the government, but also to the region, the city's residents, and employees.

Norilsk residents are the primary beneficiaries of the system, which was originally designed with them in mind. Any Norilsk resident can access reliable information about the city's air quality at any time. In doing so, the Company – being a backbone enterprise for Norilsk – demonstrates its commitment to transparency.

**Alexander Popov,**  
Senior Vice President – Chief Operating Officer,  
Head of Polar Division

## Water

### Protection of water bodies

GRI 303-1, 303-2, 303-3, 303-4, 303-5 / UNCTAD B.1.1, B.1.2, B.1.3 / SASB EM-MM-140a.2

GRI 14.7.2, 14.7.3, 14.7.4, 14.7.5, 14.7.6

**81%**

of all water used by the Company in 2024 was recycled and reused

Under the [2031 Environmental and Climate Change Strategy](#) and the [Position Statement on Water Stewardship](#), the Company is committed to reduce its impact on water bodies. Nornickel is committed to the sustainable use of water resources, adhering to national laws and leading industry standards, while actively engaging with stakeholders on water management matters.

For a list of Nornickel's key water management principles, please see [Nornickel's 2023 Sustainability Report](#).



No major impact of Nornickel's operations on water bodies was identified; water withdrawal was within the pre-approved limits in 2024



Nornickel does not operate in areas with water stress<sup>2</sup>; accordingly, no water stress is reported across the Company's footprint<sup>3</sup>



Sufficient volumes of water were supplied to Group enterprises and local communities

representing the interests of the business community and the Public Council of the Russian Ministry of Natural Resources and Environment.

During 2024, the Company engaged with the Project Management Office of the Clean Air federal project, VNII Ecology, the Federal Service for Supervision of Natural Resources, and the Federal Service for Hydrometeorology and Environmental Monitoring.

The Company withdraws water for production needs and discharges wastewater strictly in line with the pre-approved limits. Nornickel uses water from surface and underground sources for utility, drinking, and production needs, and also recycles and reuses it<sup>4</sup>. To promote water stewardship and reduce fresh water withdrawal, Nornickel operates a closed-loop water system.

Nornickel routinely monitors the quality of its wastewater to ensure compliance with regulatory requirements. Wastewater quality is assessed in accredited laboratories at legally mandated intervals. Wastewater discharges have no major impact on biodiversity of water bodies and related habitats.

All of the Company's programmes include measures to ensure that concentrations of substances in wastewater meet regulatory requirements. Domestic sewage discharge points are equipped with biological or physicochemical treatment facilities bringing water released into water bodies in line with the applicable water quality standards.

Some production and mine wastewater is sent for reuse in industrial processes (to the concentrator as well as to sulphuric acid neutralisation under the Sulphur Project).

<sup>2</sup> According to the World Resources Institute (WRI)'s Aqueduct Water Risk Atlas.

<sup>3</sup> The methodology to identify water-scarce areas is based on the data of the Aqueduct project of the World Resources Institute and climate zoning of the Russian Federation.

<sup>4</sup> The Company does not withdraw water from protected areas or bodies included in the Ramsar Convention on Wetlands of International Importance.

<sup>1</sup> Norilsk, Kayerkan District, Talnakh.



A total of 82% of wastewater discharge points of the Group's branches and Business Units are equipped with full or partial treatment facilities. For all discharge points, measures are planned to upgrade treatment facilities, build new ones, or decommission existing discharge points.

The Company takes measures to ensure that the quality of mine and pit water meets established standards, guided by the best available technologies and cost-effectiveness considerations.

### Managing water management risks

The Company's risks related to water use include:

- pollution of water bodies resulting from tailings or petroleum product spills
- pollution of water bodies due to poor performance of wastewater treatment facilities
- depletion of water bodies caused by withdrawals exceeding permitted limits.

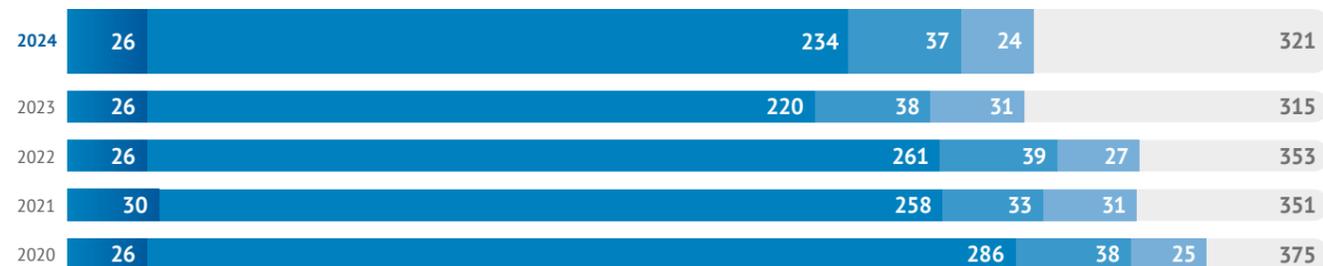
Nornickel continuously assesses its water impact through activities such as stock counting, monitoring of wastewater discharge volumes and quality, observation of surface water bodies at control points, monitoring of wastewater treatment processes, and implementation of relevant measures to improve treatment effectiveness.

Russian laws determine wastewater quality requirements, including process limits and maximum permissible concentrations of substances in water bodies used for fishery or cultural and household purposes. Nornickel's wastewater discharges into water bodies are predominantly in line with the pre-approved limits. In 2024, wastewater discharge increased by 52.1% y-o-y due to the discharge of standard-quality treated water used for cooling at CHPP-1.

In 2024, pollutants in effluents totalled 90 kt, down 43% y-o-y. The list of pollutants in wastewater is determined through studies that take into account the relevant technological processes.

GRI 303-3 GRI 14.7.4

### Total water withdrawal from external sources<sup>1</sup> (Mcm)



- The Norilsk site's production enterprise (Talnakhskoye, Oktyabrskoye, Norilsk-1 deposits)
- The Energy Division's energy enterprise

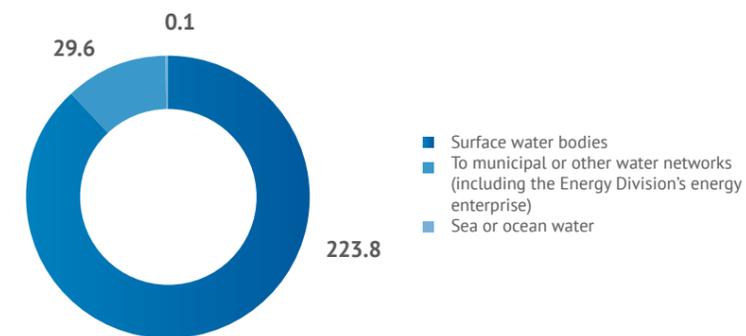
- The Kola site's metals and mining enterprise
- Other Group enterprises

In 2024, total water withdrawal from external sources grew 6 Mcm y-o-y due to fluctuations in the recycled water withdrawal for equipment cooling at the Energy Division's energy enterprise. Natural water inflow accounted for 15.5% of total

water withdrawal in 2024. The Company runs regular monitoring programmes for water bodies and water protection zones at all operational sites where water is used.

GRI 303-4 GRI 14.7.5

### Effluents by destination in 2024 (Mcm)



- Surface water bodies
- To municipal or other water networks (including the Energy Division's energy enterprise)
- Sea or ocean water

OPEX for wastewater collection, treatment, and disposal in 2024

**RUB 5.4 bn**

CAPEX for protection and sustainable use of water resources in 2024

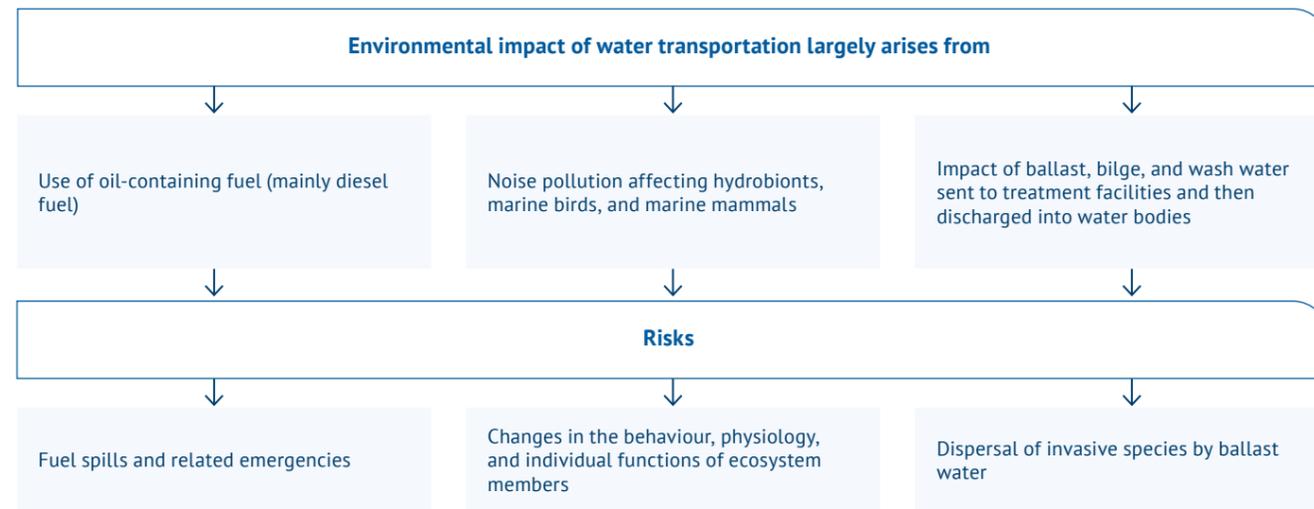
**RUB 2.5 bn**

<sup>1</sup> Excluding water withdrawal from the networks of the Energy Division's energy enterprise. Data includes the natural inflow of mine water.

## Impact of transport on water bodies

GRI 303-1 GRI 14.7.2

The Company's use of transport assets, including water transport, impacts the environment as evidenced by Big Scientific Expeditions.



Nornickel develops measures to mitigate risks associated with the negative impact of the Company's transport on water resources and implements environmental protection measures and programmes, including those aimed at reducing fuel consumption and preventing contamination of the Dudinka and Yenisei Rivers. In order to compensate for damage to aquatic biological resources and replenish the food resources of aquatic habitats, the Company regularly releases juvenile fish (for more details, please see the [Biodiversity](#) section).

The Company uses port infrastructure, including water transport, in line with applicable environmental laws on the prevention of water bodies pollution by vessels.

Thanks to the environmental fleet, the Yenisei River basin can be navigated without inflicting environmental damage.

Each year, the Company implements environmental protection measures to prevent damage to aquatic ecosystems from vessel operations. They include:

- laboratory measurements and analysis of surface water composition for compliance with sanitary and epidemiological rules and standards
- monitoring of surface water quality in navigable areas to ensure compliance with public health safety requirements
- maintenance and operation of environmental protection vessels
- upkeep of vessel systems to prevent pollution of water bodies, shoreline areas as well as fleet berthing, repair, and maintenance sites, including pollution caused by waste
- operational and environmental control over the condition of ambient air
- employee training in environmental safety programmes.

Each year during the navigation season, one of the Group's enterprises, a shipping company operating in the Yenisei River basin, deploys an environmental protection fleet, which includes:

- 5** waste collecting vessels
- 2** treatment plants
- 2** vessels for complex waste processing

## Waste and tailings storage facilities

### Sustainable waste management

GRI 3-3 / GRI 306-1, 306-2 / SASB EM-MM-150a.10, EM-MM-540a.2

GRI 14.5.2, 14.5.3

Nornickel's safe waste management is aligned with the key aspects of the public policy in this area. The [2031 Environmental and Climate Change Strategy](#) outlines the Company's waste management priorities, from regulatory compliance of waste disposal facilities in Russia to expanding the proportion of recycled waste across categories.

The Company's waste management complies with applicable Russian laws. Nornickel maintains records of waste generated, treated, recovered, neutralised, transferred to, or received from third parties, and disposed of; these records are aggregated on a quarterly and annual basis.

The Company monitors waste management throughout its entire life cycle, including the management of waste by third parties. Contracts for further waste management are made with third parties possessing all necessary permits, licences, state expert reviews, technical regulations, and specifications.

Contractors undertake to abide by environmental standards established both by the government and the Company. A relevant internal document provides for ongoing contractor monitoring and the imposition of sanctions for violations of environmental requirements and environmental damage.



Waste classification

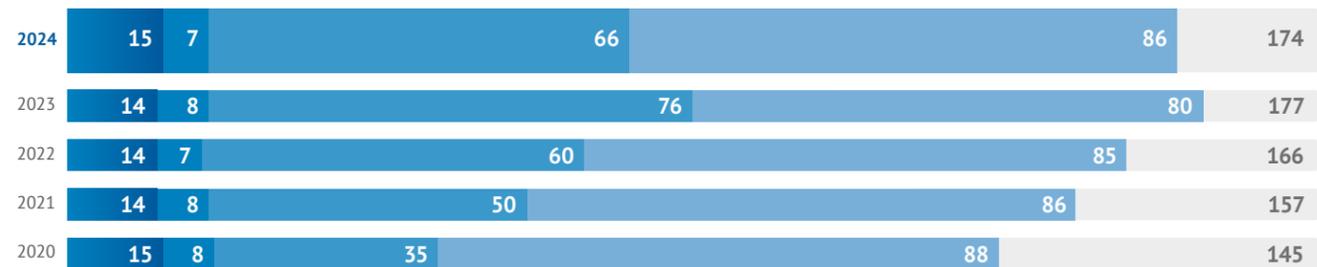
MED-17

Nornickel's operations generate hazard class 1–5 waste.

Hazard class	Waste generation, t		Share of total waste generation, %		Description
	2023	2024	2023	2024	
Hazard class 1	20.4	14.2	0.00001	0.00001	Hazard class 1–2 (highly hazardous) waste includes mercury lamps and thermometers, batteries, acids and alkalis used in batteries, uninterruptible power supplies, and oils. As required by Russian laws, Nornickel transfers highly hazardous waste to a federal operator by signing an agreement in the federal state information system
Hazard class 2	47.2	67.6	0.00003	0.00004	
Hazard class 3	8,018.6	6,941.2	0.0045	0.004	Waste associated with production or other economic activities, or coming from materials and products that have lost their consumer properties after having been used according to their intended purpose
Hazard class 4	1,595,458.0	1,154,176.8	0.9	0.7	Close to 97% of hazard class 4–5 waste is generated by mining and concentration operations (overburden, host rock, and tailings). In 2024, mining and concentration hazard class 4 waste stood at 687.8 kt (all of it tailings), while class 5 waste totalled 168.4 mln t (including 30.7 mln t of tailings and 137.7 mln t of overburden)
Hazard class 5	175,290,849.8	173,082,348.0	99.1	99.3	
<b>Total</b>	<b>176,894,394.1</b>	<b>174,243,547.8</b>	<b>100.0</b>	<b>100.0</b>	

Waste generation (mln t)

GRI 306-3



- The Norilsk site's production enterprise (Talnakhskoye, Oktyabrskoye, Norilsk-1 deposits)
- The Kola site's metals and mining enterprise
- Other Group enterprises
- The Trans-Baikal Division's mining and processing enterprise

No significant year-on-year changes in waste generation were recorded in 2024.

Contribution to combating contamination with waste

GRI 306-2, 306-4 GRI 14.5.3, 14.5.5

The Company fosters non-waste production by developing and implementing mineral waste recycling approaches while making efforts to clean up existing pollution.



Key projects and initiatives contributing to increased waste recycling and treatment

Initiatives	Expected effect	Results for 2024
Building a crushing unit for processing construction waste into certified crushed stone	15% of construction waste generated by the Company will be recovered	64.88 kt of construction waste was recovered
Constructing a ferrous scrap recycling shop	Ferrous scrap processing capacity will be 100 ktpa	The project was suspended due to reallocation of the Company's budget
Building a non-ferrous scrap recycling shop	Non-ferrous scrap recycling capacity will reach 2 ktpa	The project was suspended due to reallocation of the Company's budget
Organising temporary waste storage and management sites at the Kola site's metals and mining enterprise in line with applicable Russian laws	Share of non-mineral waste recycling (other than gypsum and cake waste) at the Kola site's metals and mining enterprise is expected to reach 60% by 2031	Share of non-mineral waste recycling (other than gypsum and cake waste) at the Kola site's metals and mining enterprise reached close to 75%.  The enterprise is exploring options for the recycling of ferrous cake
Processing large tyres and rubber products into crumb rubber / pyrolysis fuel	All of the Company's rubber products waste will be recycled	Preparation of design documents
A waste sorting project	-	Bins for plastic, glass, and paper waste were installed

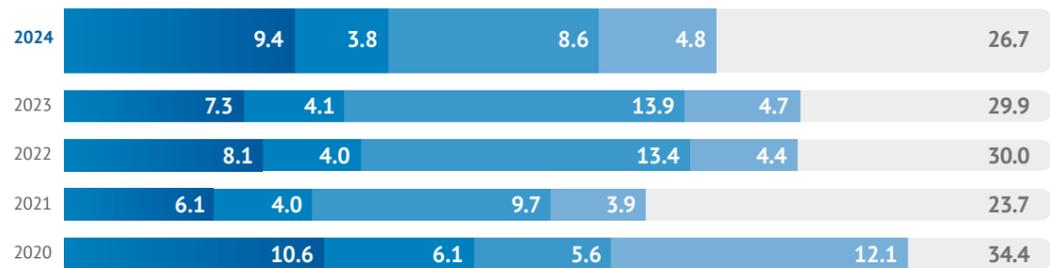
OPEX for waste management in 2024

RUB 37.3 bn

CAPEX for waste management in 2024

RUB 0.1 bn

Onsite waste disposal (mln t)<sup>1,2</sup>



- The Norilsk site's production enterprise (Talnakhskoye, Oktyabrskoye, Norilsk-1 deposits)
- The Kola site's metals and mining enterprise
- Other Group enterprises
- The Trans-Baikal Division's mining and processing enterprise

In 2024, onsite waste disposal decreased 10.7% y-o-y to 26.7 mln t.

Clean Norilsk programme

Clean Norilsk is Nornickel's large-scale programme aimed at removing industrial and construction waste, improving public amenities in the Norilsk Industrial District and the Arctic zone, and restoring previously and currently used land in accordance with environmental, sanitary, and epidemiological standards.

The Clean Norilsk programme was launched in 2021. The programme is scheduled to span ten years and will be implemented in multiple phases,

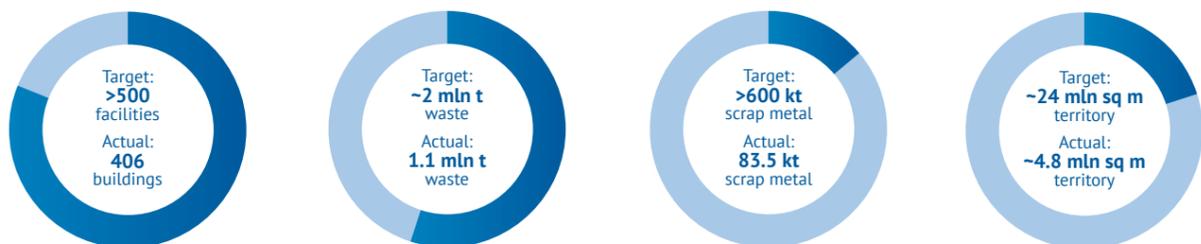
each involving a set of waste disposal activities. The Company plans to invest over RUB 40 billion in the programme, with RUB 15 billion spent on related activities in 2021–2024.

In 2024, technical and biological rehabilitation activities were completed on 4.1 ha of disturbed land as part of the programme.

OPEX for the Clean Norilsk programme in 2024

RUB 2.7 bn

Clean Norilsk targets through 2030 and 2021–2024 actuals



<sup>1</sup> With the Norilsk site's production enterprise (Norilsk-1 deposit) accounting for the largest share among all Group enterprises.  
<sup>2</sup> Figures may not fully add up due to rounding.

Waste disposal

GRI 3-3 / SASB EM-MM-540a.1, EM-MM-540a.2

Nornickel takes a responsible approach to tailings management, with a strong focus on ensuring their operational safety. To mitigate environmental and industrial safety risks, the Company regularly monitors the condition of hydraulic structures and inspects discharge sites as well as adjacent areas.

The Company has in place [PJSC MMC Norilsk Nickel's Tailings Management Policy](#). In 2024, the Company developed the Corporate Standard for Operation of Hydraulic Structures of Tailings Storage Facilities, which reflects its overall approach to tailings storage facility management. The standard is planned to be implemented before the end of 2025.

The Company's tailings storage facilities

Our tailings storage facilities comply with Russian laws and have all permits along with design and expert documentation in place for the commencement of construction and operation.

Operation of each tailings storage facility is subject to mandatory compliance with safety criteria, developed specifically for each facility and approved by regulators. Once every five years, an expert agency accredited by Rostekhnadzor conducts detailed inspections of hydraulic structures. The expert agency that issues an industrial safety declaration for the relevant facilities upon which Rostekhnadzor carries out a due diligence. At least once every five years, as part of the safety declaration process, the Company collaborates with Russia's EMERCOM to conduct comprehensive drills aimed at verifying preparedness for emergency containment and response at hydraulic structures, resulting in the issuance of a formal opinion.

Safety monitoring of tailings storage facilities

Every facility of the Company has a safety monitoring system for tailings storage facilities, which encompasses internal operational control and environmental monitoring.

The Company has in place a safety monitoring protocol for the hydraulic structures of each tailings storage facility, defining the scope (type) and timeframes of such monitoring. Daily visual monitoring over the technical condition of hydraulic structures is the responsibility of operators, while instrumental measurements (surveying, environmental, and hydrogeological control, etc.) are performed in line with the monitoring protocol timelines.

In 2024, the Company continued designing an automated monitoring solution for hydraulic structures at three tailings storage facilities in the Norilsk Industrial District. The design solutions are expected to be fully implemented by the end of 2025.

- As part of creating a security operations centre for the Kola site's metals and mining enterprise, a roadmap was developed in 2024 for the digitisation of the local tailings storage facility in 2024–2025. According to the roadmap, the following activities were carried out:
- Provision of equipment for monitoring meteorological conditions and automated water level measurements (two weather stations and a hydrological complex)
  - Testing of drones equipped with payloads for geodetic monitoring and visual inspection of the condition of hydraulic structures, including process pipelines
  - Testing of remote sensing technology for geodetic monitoring purposes

Based on the results of geotechnical surveys, an independent expert review of the stability of the containment dams is carried out by specialised organisations accredited by the Federal Environmental, Industrial, and Nuclear Supervision Service of Russia (Rostekhnadzor). This review is conducted when developing safety declarations for hydraulic structures, designing and overseeing monitoring systems, and performing other activities to ensure the safe operation of the storage facilities. All hydraulic structures of the Company are subject to ongoing comprehensive monitoring for industrial safety.

🔗 The Company currently has seven tailings and gypsum storage facilities in its portfolio. For more details, please see the [GRI Quantitative Indicators Disclosure](#) appendix.

### Assessment of tailings storage facility risks

There are two processes in place to assess the Company's tailing storage facility risks:

- Estimates of potential damage to life and health of individuals, and to property of individuals and legal entities as a result of an emergency at a hydraulic structure. The estimates of potential damage are prepared at least once every five years, when developing a safety declaration for the hydraulic structure
- Assessment of technical and production risks carried out in line with the Procedure for Managing Technical, Production, and Environmental Risks of MMC Norilsk Nickel and Russian business units of the Norinickel Group

The Company registers tailings storage facilities, determines the timeframes for their decommissioning, and estimates the future closure and land rehabilitation costs. The Company uses the resulting data to calculate the present (discounted) value of future costs, recognising its environmental provision with respect to the tailings storage facilities.

### Preparedness to respond to accidents and emergencies

SASB EM-MM-540a.3

All tailings storage facilities used by the Company are situated at a considerable distance from production sites and human settlements. Due to the fact that tailings storage facilities have an increased risk of negative environmental impact, local communities, and infrastructure facilities, the Company annually develops emergency response plans (ERPs) for hydraulic structures, separately for each tailings storage facility. Such plans include:

- operational section: a list of potential accidents at the hydraulic structure and a response system detailing the measures to be taken and the persons responsible for their implementation
- emergency communication protocols and diagrams for both operating personnel and relevant local authorities, as well as for informing the wider public about the nature, scale, and potential consequences of the accident
- material and financial reserves maintained by the Company to ensure a prompt response to any damage, accident, or emergency at the tailings storage facility's hydraulic structure
- allocation of responsibilities among all parties involved in accident response and containment, along with a defined course of action
- evacuation plans and maps for personnel and equipment in the event of an accident at the hydraulic structure
- a schedule of emergency drills covering the key elements of the emergency response plan's operational section, conducted with the involvement of operating personnel. Such drills are conducted at least once every two years, with corresponding reports prepared following each exercise.

For more details on the emergency preparedness system, please see the [Accident and Emergency Preparedness](#) section.

There have been no emergencies at tailings storage facilities of the Company or Russian business units over the past five years.



# Soil protection and responsible mining

## Land protection

To reduce the negative impact of its operations on soil, Norinickel carries out progressive reclamation of land affected by deposit development<sup>1</sup>, waste disposal, construction, and other activities.

Design documentation has been drawn up for the development, construction, and operation of deposits, including:

- an environmental impact assessment
- a list of measures to prevent and/or mitigate potential negative effects on the environment and ensure sustainable use of natural resources throughout the deposit life cycle.

Norinickel ensures full compliance with applicable Russian environmental legislation during deposit development and related activities. The Company also monitors environmental conditions throughout the entire life cycle of the deposit. Upon completion of deposit development, the Company commits to decommission mine workings and rehabilitate lands<sup>2</sup>.

## Disturbed and rehabilitated land area in 2024 (ha)

GRI 304-3 / TNFD C.O

Indicator	Total				Including: during other activities
		during mining	during construction	during disposal of industrial and municipal solid waste	
Total disturbed land area, beginning of period	17,164	14,312	1,262	874	716
Total rehabilitated area <sup>3</sup>	71	7	0	–	64
Total disturbed land area in the reporting period	199	49	23	127	–
Total disturbed land area, end of period <sup>4</sup>	17,292	14,354	1,286	1,001	652

<sup>1</sup> For the full list of deposits, please see the [Norilsk Nickel Group Profile](#) section.

<sup>2</sup> For a more detailed list of environmental protection measures taken during the deposit life cycle, please see [Norinickel's 2023 Sustainability Report](#).

<sup>3</sup> The table does not include data on disturbed and rehabilitated land near CHPP-3. In 2024, rehabilitation was limited to the Krasnoyarsk Territory.

<sup>4</sup> Figures may not fully add up due to rounding.

## Reforestation

In 2024, Norinickel continued its reforestation efforts, planting 87 ha of pine trees in the Sivyakovskoye Forestry of the Trans-Baikal Territory. This brought the total reforested area to 480 ha, including previous periods. All planted forest crops are maintained with silvicultural treatments for three years. A total of 112 ha of crops planted in the Verkhne-Chitinskoye Forestry in previous years underwent silvicultural treatments.

Given the forest fire risks identified in the area, the Company implements additional fire prevention measures, including ploughing two mineralised firebreaks around the perimeter of the planting area.



## Completion of rehabilitation at CHPP-3

In 2023, the Company completed the rehabilitation of land contaminated by the fuel spill at CHPP-3 and disturbed during clean-up activities. The Company undertook to remedy any identified defects during the warranty period and to conduct a re-inspection in the absence of snow cover.

A follow-up examination of rehabilitated land conducted by an independent entity in 2024 confirmed that the chemical and physical soil indicators met quality standards and requirements of Russian laws. Norinickel plans to monitor this area in the coming years and assess how land rehabilitation efforts contribute to improving vegetation and soil conditions.

## Exploration areas of the Norinickel Group in 2024

Area/Deposit	Location	Key types of minerals
Mikchangdinskaya area <sup>1</sup>	Taimyrsky Dolgano-Nenetsky Municipal District, Krasnoyarsk Territory	Copper-nickel sulphide ores
Arylakhskaya area <sup>1</sup>	Taimyrsky Dolgano-Nenetsky Municipal District, Krasnoyarsk Territory	Copper-nickel sulphide ores
Mezhdurechenskaya (Yuzhno-Norilskaya) <sup>2</sup>	Taimyrsky Dolgano-Nenetsky Municipal District, Krasnoyarsk Territory	Copper-nickel sulphide ores
Western flank of the Oktyabrskoye deposit <sup>1</sup>	Norilsk, Krasnoyarsk Territory	Copper-nickel sulphide ores
Southern flanks of the Talnakhskoye deposit	Norilsk, Krasnoyarsk Territory	Copper-nickel sulphide ores
Lake Baryernoje	Norilsk, Krasnoyarsk Territory	Metal-containing sediments
Kolmozerskoye deposit <sup>3</sup>	Lovozerky District, Murmansk Region	Beryllium, niobium, lithium, lithium-containing ore, tantalum
Bystrinsko-Shirinskoye deposit <sup>2</sup>	Trans-Baikal Territory, Gazimuro-Zavodsky Municipal District	Ore gold
Alenuyskaya area <sup>1</sup>	Alexandrovo-Zavodsky District, Trans-Baikal Territory	Gold-copper porphyry ores
Mostovskaya area <sup>1</sup>	Mogochinsky District, Trans-Baikal Territory	Gold-silver ores, copper ore, molybdenum ore
Shamyanskaya area <sup>1</sup>	Zabaikalsky District, Trans-Baikal Territory	Gold, copper-molybdenum ore
Dogyinskaya area <sup>1</sup>	Gazimuro-Zavodsky District, Trans-Baikal Territory	Gold-copper ores, gold-silver ores
Chuvanskaya area <sup>2</sup>	Anadyrsky District, Chukotka Autonomous District, Kamchatka Territory	Gold-copper porphyry ores

The Group's exploration activities are governed by Russian regulations covering subsoil use, environmental protection, industrial and fire safety, and occupational hygiene. During exploration, Norinickel also conducts an internal

assessment of its environmental protection obligations based on the requirements of applicable laws in various jurisdictions, terms of licence agreements, and internal engineering estimates, as interpreted by the Company's management.

## Responsible exploration

To replenish its resource base, Norinickel carries out a range of exploration activities, including geophysical and geochemical surveys, as well as drilling at prospective sites within the Company's existing footprint.

Norinickel sees a significant potential for the discovery of new deposits and therefore plans to continue exploration both within and beyond its footprint to unlock it.

**13 exploration projects were completed by the Company in 2024**

- Field exploration activities with environmental impact were carried out across three projects:
- **2 projects** in the Norilsk Industrial District
  - **1 project** in the Murmansk Region



To preserve ecosystems, the Company avoids exploration in protected areas and world heritage sites, ensuring that its activities do not negatively impact indigenous livelihoods, cultural heritage, interests, or traditional lifestyles.

<sup>1</sup> Field exploration under the project is completed, with only desktop studies of the obtained data carried out in 2024.

<sup>2</sup> Initial phase; exploration is scheduled for 2025.

<sup>3</sup> Licence to use subsoil for the exploration and production of mineral resources was received in 2023 by a joint venture of MMC Norilsk Nickel and a partner.

## Environmental monitoring

To evaluate, monitor, and predict the environmental conditions under each project, the Company assesses the environmental setting at both the start and completion of exploration activities. The purpose of the assessment is to obtain and record reliable indicators characterising the natural environmental setting prior to the commencement of exploration.

The scope of such environmental setting assessment includes:

- analysis of available geological, geochemical, hydrogeological, hydrometeorological, and environmental data

- identification of disturbed lands through the analysis of aerial and satellite images and ground surveys
- sampling of environmental media (soil, surface water, bottom sediments, vegetation, background radiation)
- establishment of monitoring sites for hazardous exogenous geological processes.

The results of these studies inform the assessment of the environmental impact of exploration activities. Exploration is accompanied by annual monitoring of environmental media, including surface waters and snow cover, along with observations of hazardous exogenous geological processes. Through such monitoring, Nor Nickel identifies and assesses the impact of exploration on ecosystems, supporting informed management decisions on environmental protection and ensuring the environmental safety of indigenous livelihoods.

Alongside the monitoring, the Company implements a set of measures to protect subsoil, soil, vegetation, and water bodies. Upon completion of drilling, disturbed land undergoes rehabilitation, including the decommissioning of drilling sites, neutralisation of soil contaminated with fuel and lubricants, land levelling and restoration to a condition suitable for its intended use.

The negative environmental impact of exploration activities related to development of deposits was found to be insignificant, demonstrating the effectiveness of our environmental protection measures. For more details on the environmental impact of exploration, including a list of sources, types, and affected components, as well as the Company's environmental protection measures, please see [Nor Nickel's 2023 Sustainability Report](#).



# Biodiversity

## Biodiversity impact management

SASB EM-MM-160a.1 / UNCTAD B.6.1

Under its [2031 Environmental and Climate Change Strategy](#), the Company aims to ensure that its operations cause zero biodiversity loss.

The Company has in place [PJSC MMC Norilsk Nickel's Position Statement on Biodiversity](#), which outlines the key principles and commitments

as well as allocates responsibilities within the Group's corporate organisation to effectively manage its impact on ecosystems. Our biodiversity impact management system covers all life cycle phases of the Company's projects.

### Nor Nickel's biodiversity principles



### Impact on biodiversity in terms of value chain and life cycle stages

GRI 3-3 / TNFD Sa, Sd, Ra

Nornickel's mining, processing, and energy facilities are organised into production clusters located in shared areas, exerting both individual and cumulative environmental impacts. Given their technological interconnections and geographical proximity, it is impractical

to categorise enterprises along the value chain for biodiversity monitoring purposes. Biodiversity impact management varies depending on the location of the Group's industrial sites.

Biodiversity conservation matters are also included in the relevant section of [PJSC MMC Norilsk Nickel's Supplier Code of Conduct](#), which is binding for the Company's contractors.

## Assessment of Nornickel's impact on biodiversity

GRI 304-1

### Big Scientific Expedition<sup>1</sup>

As part of developing a comprehensive biodiversity impact management system, Nornickel launched the Big Scientific Expedition – a large-scale project aimed at conducting baseline ecosystem surveys. The project's primary objective is to collect up-to-date data on biodiversity across the Company's footprint and to develop recommendations for mitigating environmental impact. The biodiversity survey became the most extensive ecosystem study since the Soviet era.

The key feature of the Big Scientific Expedition was collaboration between researchers and scientists from nature reserves who have the most complete statistical data on biodiversity within their respective areas over the past decades.

The expeditions involved a detailed study of the ecosystems near the Company's mining, production, and energy facilities across three regions: the Trans-Baikal Territory, the Murmansk Region, and the Taimyr Peninsula.

### Research highlights

The research studies updated the delineation of the impact areas of the Company's facilities and assessed biodiversity both in areas adjacent to production sites (within the impact areas) and in locations beyond the radius of negative impact, where plant and animal communities original/typical of the region are found

The biodiversity of plant, vertebrate, and invertebrate species was assessed. More than 1,370 species of key groups of organisms were recorded

Indicator species reflecting the condition of local ecosystems were identified

Key factors and extent of negative impact of the Company's facilities on the biodiversity of local ecosystems were identified

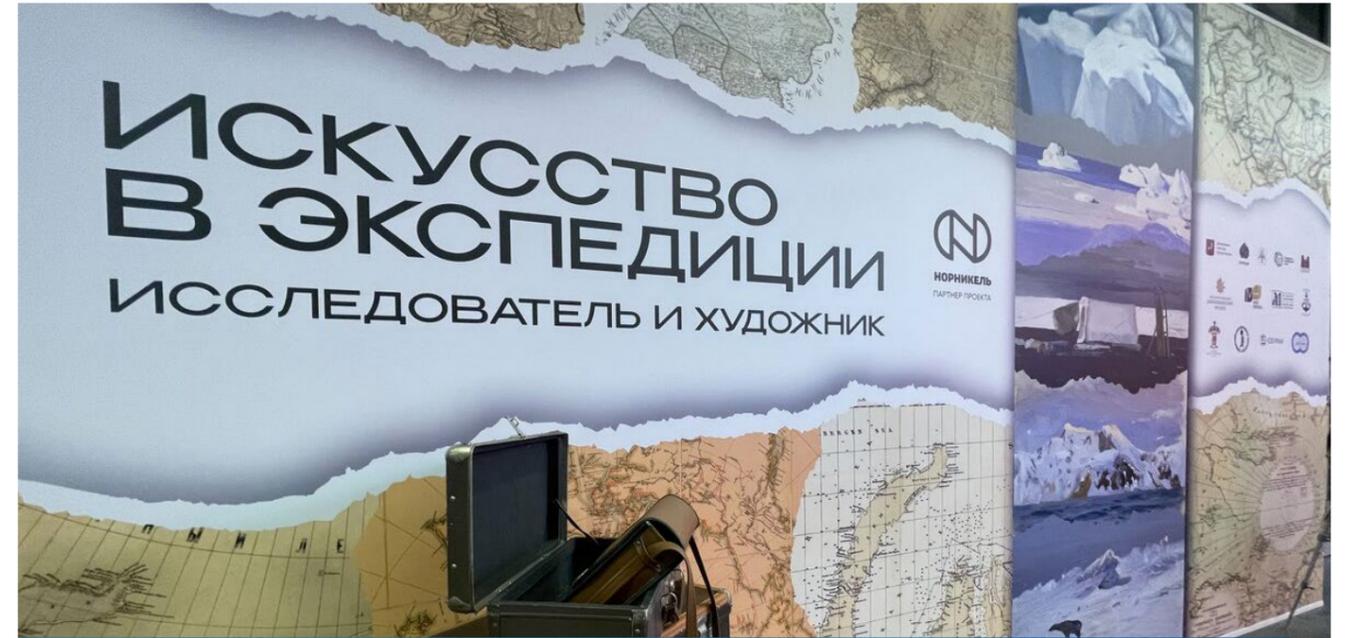
An Integrated Ecosystem Health Indicator (IEHI) was calculated, serving as a basis for the Company's target biodiversity KPI<sup>2</sup>

Nornickel continues refining the IEHI to ensure the most efficient assessment of the environmental impact of industrial enterprises.

Nornickel continues its track record of partnering with research institutions for biodiversity conservation.

<sup>1</sup> For more details on the Big Scientific Expedition, please see [Nornickel's website dedicated to biodiversity conservation](#), [Sustainability Reports for 2021–2023](#), and the [relevant report of the Siberian Branch of the Russian Academy of Sciences](#).

<sup>2</sup> A description of the IEHI is available in [Nornickel's 2023 Sustainability Report](#).



### Artistic Perspectives of Exploration: The Explorer and the Artist project

In 2024, the Company supported an artistic and educational initiative titled "Artistic Perspectives of Exploration: The Explorer and the Artist", celebrating the completion of the Big Scientific Expedition's second year. The project included several exhibitions, alongside a broad educational programme.

As part of the project, Russia's leading specialist museums and private collectors presented exhibits from their collections dedicated to the cultural understanding of the North and expeditions in the Russian Arctic in the last 400 years.

### Ecosystem services

TNFD Sb, Ra

In 2024, Nornickel conducted an assessment of ecosystem services – the tangible and intangible benefits people derive from nature, including those arising from ecosystem use.

As part of this assessment, stakeholders were surveyed to evaluate the importance of listed ecosystem services, determine their frequency and purpose of use, identify specific natural resources used

by respondents, assess the availability of alternative resource sources, and more. According to the survey, a total of 24 relevant ecosystem services were identified at the Norilsk site and within the Energy Division, with five of them prioritised. A total of 28 ecosystem services, including five priority ones, are relevant for the Kola site.

The assessment provided an updated view of the Company's impact on ecosystems across its regions of operation and validated the effectiveness of the selected environmental protection measures.

## Biodiversity conservation efforts

**TNFD Sb**

Nornickel is developing initiatives to reduce the pressure on ecosystems based on the “avoid–reduce–restore–compensate” principle. This approach helps mitigate the indirect impact of the Company’s operations on biodiversity.

Nornickel goes beyond reducing its indirect impact on biodiversity, implementing additional corrective measures.

Facility	Biodiversity-related initiatives in 2024
The Trans-Baikal Division's mining and processing enterprise	<ul style="list-style-type: none"> <li>Reforestation followed by silvicultural treatments In 2024, the Company planted over 174 thousand pine saplings in the Trans-Baikal Territory across an area of 87 ha</li> <li>Nearly 150 thousand common carp fry were released into Lake Shaksha in the regional Ivano-Arakhleisky Nature Park</li> <li>Participation of volunteers in improving the territory of the Adon-Chelon environmental awareness complex and the Daursky State Nature Biosphere Reserve's cordon, as well as in constructing an enclosure for the semi-free maintenance of Altai argali (Altai Mountain sheep) for subsequent reintroduction under the Biodiversity Conservation and Ecotourism Development national project</li> </ul>
Norilsk Industrial District facilities	<ul style="list-style-type: none"> <li>3 million fingerlings of Siberian sturgeon and nelma were released into water bodies of the Krasnoyarsk Territory</li> <li>Allocation of grants for implementing projects related to environmental activities, including: establishing an arts and crafts studio to promote applied creativity among children using natural materials; creating a learning lab space for organising research and entrepreneurial activities for school students; developing environmental awareness initiatives; and organising environmental clean-up campaigns in coastal and tundra areas</li> <li>Organisation of an environmental initiative involving volunteers from among the Company's employees, their families, and local community members, featuring activities such as creating eco-trails, cleaning and landscaping, workshops, and children's games</li> </ul>
The Kola site's metals and mining enterprise	<ul style="list-style-type: none"> <li>Monitoring of the state of biodiversity in the Kandalaksha, Pasvik, and Lapland Nature Reserves. A comprehensive survey of the north-western part of the Murmansk Tundra Reserve was held for the first time</li> <li>Monitoring of the wild reindeer population listed in Russia's Red Data Book</li> <li>A total of 5 kg of pine seeds (about 710 thousand seeds) were sown across an area of 2.2 ha About 216 thousand pine seedlings were grown</li> <li>Organisation of a rescue operation for a Red Data Book humpback whale with the support of Nornickel</li> <li>Establishment of a Freshwater Pearl Mussel Reintroduction Centre (for a threatened species of Unionoida bivalves)</li> <li>Organisation of a first regional environmental forum jointly with the Ministry of Natural Resources, Ecology, and Fisheries of the Murmansk Region</li> <li>Implementation of a project to enhance salmon stocks on the Kola Peninsula through egg planting. This technology is 90% more effective than releasing fingerlings for restocking purposes</li> <li>Installation of special hatchery nests containing brown trout eggs in the Moncha River, Tikhanka River, and Kumuzhy Creek</li> <li>Over 10 thousand pine saplings were planted as part of the Save the Forest nationwide campaign</li> </ul>

### Implementation of an unmanned aircraft system for environmental monitoring

In 2024, an unmanned aircraft system (UAS), unprecedented for Russia, was deployed at the Kola site's metals and mining enterprise. The UAS is designed for online air monitoring while airborne, surface water sampling with delivery to the operator, visual monitoring of site conditions, detection of thermal anomalies, identification of damage,

and detection of violations of operating rules and standards (a proprietary solution of the Company). The device can be used not only at industrial facilities but also in protected areas to monitor animal populations.

## Collaboration with protected areas

**TNFD Sb**

In line with its long-term strategy to maintain biodiversity in its regions of operation and preserve the unique Arctic nature, Nornickel also organises regular volunteer campaigns, fosters scientific volunteering, supports nature reserves, and finances studies on Red Data Book animals.

As part of collaboration with the Joint Directorate of Taimyr Nature Reserves, a joint programme was developed to study the rare Putorana subspecies of snow sheep with an isolated habitat area, listed in Russia's Red Data Book and the IUCN Red List. In 2024, comprehensive research continued to study this inhabitant of the protected areas on the Putorana Plateau, a UNESCO World Natural Heritage Site.

On the Kola Peninsula, Nornickel has traditionally collaborated with the Lapland and Pasvik Nature Reserves.

These efforts include monitoring the population of wild reindeer in the Lapland Nature Reserve, with observations and environmental assessment both in the reserve and in the facilities' impact areas, forecasting changes, and substantiating an optimal number of species listed in the Red Data

Book to further regulate population size. In 2024, there were no indications of the Company's impact on the ecosystems of the Lapland Nature Reserve.

Specialists from the Pasvik Nature Reserve also conduct regular environmental monitoring within the reserve's boundaries and in areas affected by the Company's operations. The research aims to determine the content of pollutants in ecosystems and their accumulation in plants and animals. Along with monitoring, the movement of mobile forms of heavy metals between ecosystem components is analysed, and the condition of biological organisms is assessed. In the research areas, changes in animal species distribution due to climatic shifts have also been observed. Encounters with bird species typically found further south and the wintering of previously unrecorded species have become increasingly common.

In 2024, Nornickel began its collaboration with the Kandalaksha Nature Reserve, a protected area of great importance to the Murmansk Region. The collaboration is aimed at studying the biodiversity of the Murmansk Tundra Reserve, with a comprehensive survey of its western part conducted for the first time in the reporting year. The survey identified 124 species of vascular plants and lichens (including two protected and one alien species), one species of amphibians, one species of reptiles, 47 species of birds (including four protected species), and 10 species of mammals.



Red Data Book species found in the Pasvik, Lapland, and Putoransky Nature Reserves<sup>1</sup> (number of fish)

GRI 304-4

Indicator	Pasvik Nature Reserve	Lapland Nature Reserve	Putoransky Nature Reserve
<b>On the IUCN Red List, including</b>	5	110	328
• Critically Endangered (CR)	0	0	3
• Endangered (EN)	1	1	1
• Vulnerable (VU)	2	12	12
• Near Threatened (NT)	2	8	11
• Least Concern (LC)	0	89	301
<b>On Russia's Red Data Book, including</b>	23	33	20 <sup>2</sup>
• Critically Endangered (CR)	0	1	1
• Critically Endangered (CR)	2	14	0
• Vulnerable (VU)	8	15	3
• Near Threatened (NT)	10	2	1
• Least Concern (LC)	3	1	8
<b>On the Murmansk Region's and Krasnoyarsk Territory's Red Data Books</b>	118	163	70

In 2024, the Company continued its efforts to preserve the gyrfalcon population under an agreement with the Russian Ministry of Natural Resources and Environment.

Nornickel collaborates with the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO) to monitor the condition of aquatic communities and develop science-based recommendations for replenishing biological resources in aquatic ecosystems. These recommendations include identifying sites and determining the maximum feasible volumes for releasing juvenile fish of valuable species in the Norilsk District. Similar studies will be conducted on a regular basis until 2051.

Nornickel's Head Office supports species diversity conservation efforts by its Divisions across the Company's footprint and incorporates global best practices aligned with the goals of the Kunming-Montreal Global Biodiversity Framework into its annual biodiversity conservation and monitoring activities.

A dedicated website at [life.nornickel.com](http://life.nornickel.com) was launched to showcase the Company's efforts in conserving biodiversity and natural ecosystems. In 2024, the website won the Best ESG Projects in Russia award in the Biodiversity Conservation category.



The Company's conservation measures have become more targeted and effective in practice.

Biodiversity conservation is one of the most fascinating fields of work in the Arctic, despite its harsh climate. The return of Red Data Book species to the region, and even more so the discovery of new species like the Putoranchik beetle, bring great joy.

Key environmental indicators are imposed by laws and government policies, whereas biodiversity conservation remains a voluntary commitment by the Company.

**Stanislav Seleznev,**  
Vice President for Ecology and Industrial Safety

<sup>1</sup> These nature reserves are located in a relative proximity to the operations of the Kola site's metals and mining enterprise.  
<sup>2</sup> Seven species are not on the IUCN Red List of Threatened Species, but are included in Russia's Red Data Book.