

RISK MANAGEMENT

The existing corporate risk management system is integrated into the Company's business processes and enables effective risk-based decisions at various organisational levels to achieve strategic and operational goals.

Nornickel set the following key risk management objectives:

- Increase the likelihood of achieving the Company's goals
- Improve resource allocation
- Boost Nornickel's investment case and shareholder value

The risk management system is based on the principles and requirements set forth in Russian and international laws, as well as professional standards, including the Corporate Governance Code recommended by the Bank of Russia, GOST R ISO 31000-2019 Risk Management. Principles and Guidelines, COSO ERM Enterprise Risk Management – Integrating with Strategy and Performance, and Recommendations for Public Joint Stock Companies to Organise Risk Management, Internal Controls, Internal Auditing, and the Work of Auditing Committees Under Boards of Directors (Supervisory Boards) (Appendix to the Bank of Russia's Letter No. IN-06-28/143 dated 1 October 2020).

To manage production and infrastructure risks, Nornickel develops, approves and updates business continuity plans which define the following sequence of steps in case of emergency:

- Procedure for interaction between business units in rescuing people, minimising property damage, and ensuring process stability
- Current operations support or recovery plan
- Recovery or restoration plan for affected assets

Risk management system

BOARD OF DIRECTORS

Audit Committee of the Board of Directors

Key functions

- ⇒ Approve the Corporate Risk Management Policy
 - ⇒ Supervise the building of the risk management system
 - ⇒ Prepare the Corporate Risk Appetite Statement (annually)
 - ⇒ Manage strategic risks on an ongoing basis
 - ⇒ Review and approve the risk management development roadmap and assess its implementation status (annually)
 - ⇒ Review reports on strategic and key risks (annually/quarterly)
- Assess risk management performance at Nornickel (annually)

MANAGEMENT BOARD

Risk Management Committee of the Management Board

Key functions

- ⇒ Review strategic risks and reports on key risks
- ⇒ Review materialised risks and lessons learned
- ⇒ Review risk appetite metrics
- ⇒ Make decisions related to key risk management
- ⇒ Review business continuity plans
- ⇒ Review the strategy and development plans for the Corporate Risk Management System (CRMS) and Internal Control System (ICS)
- ⇒ Review the performance of dedicated risk management committees within business verticals

RISK MANAGEMENT SERVICE

Key functions

- ⇒ Develops and updates the risk management methodology
- ⇒ Prepares reports on Nornickel's Top 20 risks (annually)
- ⇒ Prepares reports on strategic risks (annually)
- ⇒ Enhances quantitative risk assessment using simulation modelling tools
- ⇒ Improves the business continuity management system
- ⇒ Ensures employee development and training in practical approaches to risk management

RISK OWNERS / HEADS OF BUSINESS UNITS

Key functions

- ⇒ Day-to-day risk management within the integrated risk management model, including risk identification, analysis, assessment and/or prioritisation, as well as development and execution of response plans and mitigation measures
- ⇒ Risk-based decision making

INTERNAL AUDIT

Key functions

- ⇒ Makes independent assessments of the effectiveness of risk management, internal controls and corporate governance (annually)

INTERNAL CONTROL

Key functions

- ⇒ Methodological support and participation in risk assessment of business processes

2021

In 2021, the Company completed the following projects to develop its risk management system:

- Commencement of pilot operation of a GRC-class system developed as part of a project to automate risk management processes
- Internal follow-up review of key asset risks, with updates and verification
- Establishment of new or continued consistent operation of existing dedicated risk management committees
- Completion of a project to improve risk management integration with budgeting processes
- Quantitative assessment of the cumulative impact of key risks on the Company's 2022 budget, with an analysis of the budget sensitivity to key risks
- Development, testing, and implementation planning of key performance indicators for the risk management process

- Development of an improved approach to risk appetite definition and decomposition with due consideration of ESG metrics
- Development of a target quantitative model to assess equipment failure risks in test environment, and an improved assessment approach for risks that may prevent use of buildings in permafrost environments of the Norilsk Industrial District
- Update of the corporate online course Fundamentals of Risk Management, which is now mandatory for new employees
- Regular quantitative assessment of investment project risks
- Commencement of a project to assess long-term climate-related risks in accordance with the TCFD requirements for a number of critical assets within the Norilsk Division

New emerging risks

New emerging risk management is supported by an existing team of internal risk champions who analyse and assess risks related to all activities of the Company.

New emerging risk management focuses on preventing risk occurrence as well as its potential negative consequences. Controls used by the Company include the implementation of business continuity plans to manage external risks that can have a disastrous impact on the Company's operations and business processes. These

controls increase Nor nickel's resilience to external shocks.

The Company's strategic risks were updated in 2021. Nor nickel sees the following groups of risks as its key risks: aggressive expansion of the Company's investment programme, aging of its production assets, and the mismatch between skills supply on the labour market and the Company's needs in the context of advances in new technology and digitalisation.

2022

In line with risk management system improvement plans for 2022 and beyond, the following areas have been prioritised:



External review of the Company's key technical and production risks



Improvement of the risk management system elements in strategic and operational planning



Rollout of simulation modelling for investment project risk assessment to the PMO level



Enhancement of the methodology to analyse, assess and manage various categories and types of risks



Role-based upskilling of Company employees involved in risk management



Development of a methodology to consider climate-related factors; continued implementation of a project to assess long-term climate-related risks in accordance with the TCFD methodology

The Audit Committee of the Board of Directors regularly reviewed reports of the Risk Management Service; on 28 October 2021, the Board of Directors heard a report on the Company's key and strategic risks and gave a number of recommendations to the management team.

1 The Task Force on Climate-related Financial Disclosures

Insurance

Insurance is an essential tool used to manage risks while protecting the property interests of Nornickel and its shareholders against any unforeseen losses related to operations, including due to external effects.

Nornickel has centralised its insurance function to ensure the consistent implementation of its uniform insurance policy and standards. Nornickel annually approves a comprehensive programme that

defines key parameters by insurance type, key business area, and project. Nornickel has implemented a corporate insurance programme that covers assets, equipment failures, and business interruptions across the Group. Nornickel maintains corporate insurance policies with major Russian insurers under the corporate insurance programme, involving an international broker to ensure that Nornickel's risks are underwritten by highly reputable international re-insurers.

Nornickel's freight, construction and installation, aircraft and watercraft insurance programmes are also based on the principle of centralisation. The Group companies, directors and officers carry relevant liability insurance. Nornickel applies industry best practice and leverages insurance market trends to negotiate the best insurance and insured risk management terms.

Climate risks

The Company recognises the need to remain resilient to climate-related risks, including through climate adaptation, target-based CHG emission management, and innovation sourcing to better gear up the business to meet current challenges.

Two categories of climate-related risks have been identified in line with the TCFD recommendations.



1. Physical. These risks can manifest themselves as abnormal weather or lasting changes in weather patterns. Physical consequences of climate change for the Company can include permafrost thawing, changes in water levels in water bodies, precipitation amounts, wind loads and other climate risk factors with potentially material adverse impact on operations.



2. Transition risks Transition risks (arising from the transition to a low-carbon economy). The Company includes in this category relevant political, regulatory, technology, market and reputational risks.



The corporate risk management system covers climate-related risks. Nornickel's governance bodies review key risk information on a quarterly basis, including on key climate-related risks.

In 2021, the Company's Board of Directors approved a Climate Change Policy, setting forth key commitments and operating principles, including those concerning climate-related risk management.

The management team developed and approved a roadmap for ensuring compliance with the TCFD Guidance, covering 2022 and the first quarter of 2023. The roadmap implementation will enable the integration of climate-related risk management and potential financial impact analysis into the Company's business processes. In 2023, the Company intends to release a public climate report disclosing all material information on the Company's performance and progress on climate change.

As part of physical risk management, the Norilsk Division is establishing a building and structure monitoring system for continuous automated monitoring of permafrost foundation soil temperature and foundation deformations. Also in 2021, climate change in the Norilsk Industrial District was simulated until 2050 for three global climate scenarios put forward by the Intergovernmental Panel on Climate Change. The simulation results will inform further mitigation and adaptation efforts for physical risks.

As part of its greenhouse gas (GHG) management activities in 2021, the Company developed a methodology to calculate the carbon footprint of its six key metals. Also in the reporting year, the Company launched the production of carbon-neutral nickel. This initiative was enabled by efforts to reduce GHG emissions across all stages of production from ore mining to beneficiation and refining to

finished products. Carbon footprint was primarily offset through the upgrade of a hydropower plant powering Nornickel's production facilities in the Norilsk Industrial District.

Climate-related risks may offer additional economic benefits to Nornickel due to the changing structure of demand for metals required in a future low-carbon economy. Based on Nornickel's assessment of climate change risks under the International Energy Agency's Sustainable Development Scenario envisaging the temperature rise in 2100 limited to 1.5 °C, the Company expects a positive impact on its product portfolio under this scenario, driven by the development of the electric vehicle sector as well as wider adoption of renewables and hydrogen: a neutral impact on PGMs and a positive impact on non-ferrous metals.

Decarbonisation of the global economy – risk assessment for Nornickel metals

	Ni	PGMs	Cu
Growth of market share of BEVs			
Growth of hybrids			
Fuel cell electric vehicles			
Growth of renewables / low carbon fuel in power generation			
Storage and grid expansion to support the growth of xEVs			
Net impact			

Lack of water resources

Water shortages in storage reservoirs of Nornickel's hydropower facilities may result in failure to achieve required water pressures at HPP turbines, leading to lower power output and to drinking water shortages in Norilsk.



Impact on goals:
medium



Source of risk:
external



Year-on-year change in risk:
stable

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
Extreme weather events (droughts) caused by climate change	<p>Efficient delivery of finished products (metals) in line with the production programme.</p> <p>Timely supply of products to consumers.</p> <p>Social responsibility: comfort and safety of people living in Nornickel's regions of operation.</p>	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> implements a closed water circuit to reduce water withdrawal from external sources carries out regular hydrological observations to forecast water levels in rivers and other water bodies cooperates with the Federal Service for Hydrometeorology and Environmental Monitoring (Rosgidromet) on setting up permanent hydrological and meteorological monitoring stations in order to improve the accuracy of water level forecasts for major rivers across Nornickel's regions of operation dredges the Norilskaya River and prepares its production facilities for reducing their energy consumption in case of risk occurrence refurbished one of its two hydropower plants to increase power output through improving the hydroelectric units' performance.

Permafrost thawing

Loss of bearing capacity by pile foundation beds may lead to deformation and collapse of buildings and structures.



Impact on goals:
medium



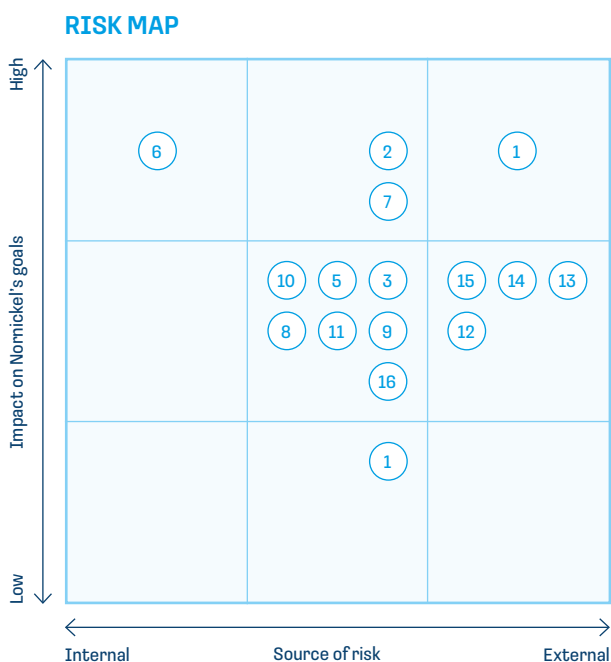
Source of risk:
external



Year-on-year change in risk:
stable

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
<p>Climate change, average annual temperature increases over the last 15 to 20 years.</p> <p>Increased depth of seasonal permafrost thawing.</p>	<p>Efficient delivery of finished products (metals) in line with the production programme.</p> <p>Social responsibility: comfort and safety of people living in Nornickel's regions of operation.</p>	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> performs regular monitoring of soil condition under the foundations of buildings and structures built on permafrost performs geodetic monitoring of the movement of buildings uses satellite technology to monitor Nornickel's assets and further analyse the data regularly monitors the condition of Nornickel's buildings and structures via an information system for conducting geotechnical surveys monitors soil temperature in buildings' foundations monitors the compliance of its facilities with operational requirements for crawl spaces takes corrective actions to ensure safe operating conditions for buildings and structures.

Map of Nornickel's material risks with year-on-year changes in 2021



RISK

- ➔ Price risk (decline in market prices for Nornickel metals)
- ➔ Market risk (lower competitiveness of Nornickel products)
- ➔ Tighter environmental regulations
- ➔ FX risk
- ➔ Investment risk
- ➔ Work-related injury risk
- ➔ Information security risks
- ➔ Technical and production risk
- ➔ Power outages at production and social facilities in the Norilsk Industrial District
- ➔ Compliance risk
- ➔ Social risk
- ➔ Changes in legislation and law enforcement
- ➔ Lack of water resources
- ➔ Permafrost thawing
- ➔ Risk of epidemics
- ⚠ Risk of supply chain disruptions

Risk: an impact of uncertainty on the goals (ISO/COST R 31000).

Source of risk: an element which, alone or in combination with other elements, may cause a risk (ISO/COST R 31000).

- ➔ Risk increased year-on-year
- ↘ Risk decreased year-on-year
- ➔ Risk has not changed year-on-year
- ⚠ New emerging risk

A high-level map of Nornickel's material risks leverages global best practices in risk management. The risk map ranks material risks by impact on the Group's goals and by source.

In 2021, the following previously identified risks materialised:

- An ore rehandling building and the adjoining walkway of the Norilsk Concentrator collapsed during repair
- The Oktyabrsky and Taimyrsky mine operations were suspended due to flooding by natural groundwater

The Norilsk Concentrator implemented a range of initiatives to reinforce the main

load-bearing structures of its buildings. It resumed operation using a new crushing arrangement, with two legacy crushing buildings now fully decommissioned.

The concentrator is implementing a project to set up a building and structure monitoring system at its facilities. Another ongoing project is the construction of a new Norilsk Concentrator, implementing a vision for a modern, cost-effective concentrator to process ores and ensuring a reliable production chain.

The Taimyrsky and Oktyabrsky Mines fully completed dewatering and recovery measures. The Company is conducting

additional hydrogeological surveys across all of its mines, with underground excavation suspended in the immediate vicinity of potentially water-bearing seams at two enterprises. The hydrogeological model update is expected to be completed in early 2022, with follow-up changes to mining plans. Projects are also advancing to boost drainage capacity.



For more details on additional activities carried out at Norilsk Concentrator to prevent similar events in the future, please see the [Health and Safety](#) section of this Annual Report.