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RISK MANAGEMENT

Nornickel continuously manages risks that can affect its strategic and operational goals. This process comprises the following stages:

- Identification of risks that have external and (or) internal sources
- Risk assessment based on their impact on key financial and non-financial metrics
- Development and implementation of measures to prevent risks and (or) minimise their implications.

Nornickel pursues the following key risk management objectives:

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

The risk management framework is based on the principles and requirements set out in Russian and international laws, as well as professional standards, including the Corporate Governance Code recommended by the Bank of Russia, GOST R ISO 31000–2010 (Risk Management), and COSO ERM (Enterprise Risk Management: Integrating with Strategy and Performance).

To manage production and infrastructure risks, Nornickel develops, approves and updates business continuity plans which in case of emergency consecutively set out:

- 1/ a procedure for interaction between business units in rescuing people, minimising property damage, and ensuring process sustainability
- 2/ a current operations support or resumption plan
- 3/ a rehabilitation or retrofit plan for affected assets.

RISK MANAGEMENT FRAMEWORK



In 2017–2019, Nornickel improved its risk management framework as follows.

- 1/ Relevant risk management documents were developed and approved (risk management policies, regulations and procedures by function, guidelines for development of business continuity plans).
- 2/ Nornickel's key risks were identified and are presented to the Audit and Sustainable Development Committee on a regular basis as a strategic risk map and Top 20 risks. Based on risk assessment, mitigation measures are adopted, in particular, risk management action plans are developed and approved.
- 3/ The corporate risk management framework was extended to the Group's key subsidiaries. Subsidiaries' risk reports are now regularly reviewed at all levels and consolidated at the Head Office level.
- 4/ A risk appetite statement was developed, approved and updated annually by the Board of Directors.
- 5/ Business continuity plans covering the most critical production and infrastructure risks were developed and approved.
- 6/ A decision was taken to replicate quantitative risk assessments for investment projects and regularly review them at Nornickel's investment committees to enable risk-based decision making.
- 7/ In-person risk trainings for employees of the Head Office, Polar Division, Kola MMC and GiproNornickel are offered on a regular basis.
- 8/ An interactive online training course in operational risk management was developed for Nornickel employees.
- 9/ A set of documents was developed to design an automated risk management system (ARMS) based on a GRC system.
- 10/ Audits of the risk management framework's performance are conducted annually, and the risk management development roadmap is updated. In addition, performance self-assessment of the corporate risk management framework (CRMF) is conducted on an annual basis.

Qualitative indicators of the Risk Management Service's performance in 2019 cover the following activities:

- Rollout of quantitative risk assessment methods for investment projects
- Implementation of measures to improve the business continuity management system
- Corporate risk management trainings for Nornickel employees
- Automation of internal control and risk management processes based on a GRC system
- Technical and production risk management system improvement, including risk register updates and quantitative assessment / scoring methods testing.

2020+ Development Roadmap envisages the following activities to improve the risk management framework:

- Launch of activities to automate the risk management process
- Refinement of algorithms for prompt communication of all emerging risks using a GRC system
- Regular CRMF self-diagnostic and assessment for compliance with global best practices
- Launch of activities to define key risk indicators as part of the project to implement a GRC system
- Improvement of risk management practices in strategic and operational planning
- Rollout of the approach implying the use of simulation modelling for investment project risk assessment
- Enhancement of the methodology to analyse and manage various categories of technical and production risks
- Extending the business continuity management perimeter to cover non-production processes: information technology, security, staffing, etc.

NEW EMERGING RISKS

Nornickel's new emerging risks typically have external sources. These risks are often hard to analyse and prevent due to the lack of information. Effective management of new emerging risks is critical to fostering Nornickel's long-term sustainability, managing change and maintaining Nornickel's competitive edge in the metals market. Nornickel assesses and manages new emerging risks based on their potential implications and on how fast they can materialise, as well as considering its actual capabilities to prevent and/or curb their impact.

New emerging risks are identified and tracked early on by relevant internal experts. For example, a team of risk champions is involved in reviewing new emerging risks, identifying and assessing risks

related to all activities of Nornickel. Once the severity of a new emerging risk is assessed and mitigation measures are identified, risk owners become responsible for managing the risk.

New emerging risk management focuses on preventing risk occurrence and mitigating their potential negative implications. Nornickel's approach includes controls such as business continuity plans to manage external risks that can have a disastrous effect on Nornickel's operations and business processes. These controls increase Nornickel's resilience to external shocks. New emerging risks are assessed on a regular basis, including their reassessment and evaluation of their criticality to Nornickel.

CLIMATE CHANGE

Global warming and other repercussions of climate change may affect Nornickel's operations in the longer run. Their impact may include abnormal weather or lasting changes in weather patterns. The physical implications of climate change can include drought and permafrost thawing, which can have a material adverse effect on Nornickel's operations. As part of its risk management strategy, Nornickel implements a range of measures

to monitor and control these risks. A significant share of renewables in Nornickel's energy consumption, the high share of recycled water, and one of the industry's lowest CO₂ emission levels suggest that the risk remains within tolerance limits. Climate-related risks may also unlock additional opportunities for Nornickel driven by the strong demand for metals required in a future low-carbon economy.

INSURANCE

Insurance is an essential tool used by Nornickel to manage its risks and finances, as well as to protect its property interests and shareholders against any unforeseen losses related to operations, including due to external effects.

Nornickel has centralised its insurance function to consistently implement uniform policies and standards supporting a comprehensive approach to managing insurance policies and fully covering every risk at all times. Nornickel annually approves a comprehensive insurance programme that defines key parameters by insurance type and key 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.

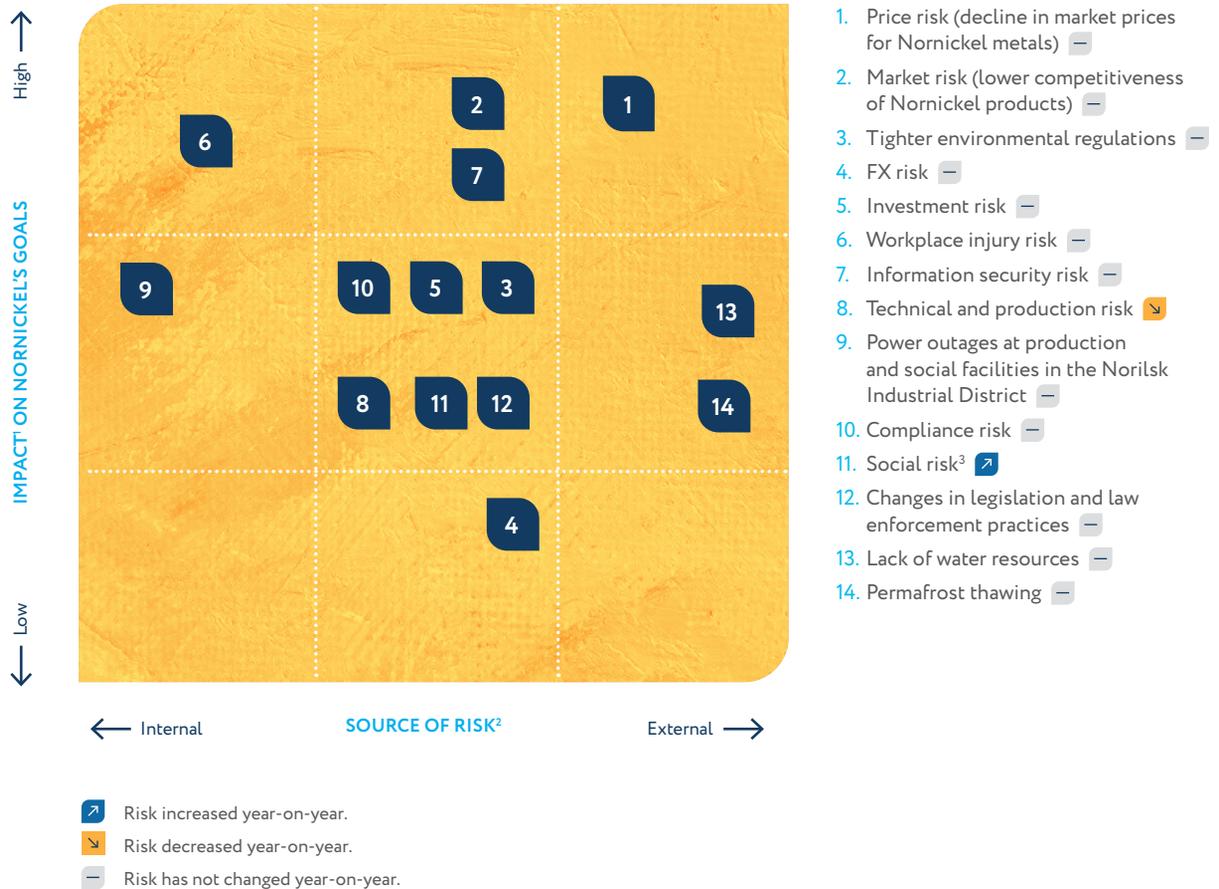
The same principles of centralisation apply to Nornickel's freight, construction and installation, aircraft and watercraft insurance programmes. The Group's entities, directors and officers carry relevant liability insurance. Nornickel applies the industry's best practices to negotiate the best insurance and insured risk management terms.

MAP OF NORNICHEL'S MATERIAL RISKS WITH YEAR-ON-YEAR CHANGE IN 2019

Below is a high-level map of Nornickel's material risks reflecting global best practices in risk management.

The risk map ranks material risks by their impact on the Group's goals and by source.

RISK MAP – NORNICHEL'S 2019 ANNUAL REPORT



1/ Risk: an impact of uncertainty on the goals (ISO/GOST R 31000).
 2/ Source of risk: an element which, alone or in combination with other elements, may cause a risk (ISO/GOST R 31000).
 3/ Nornickel implements a range of additional measures to mitigate the risk (see risk description).

KEY RISKS

Nornickel’s risks are all inherent to its strategic and operational development and business continuity goals. Key risks have a varying degree of impact on Nornickel’s ability to achieve its goals. Some risks also affect several goals at a time. An

overview of goals affected by key risks is provided in the description of these risks below.

STRATEGIC RISKS



Impact on goals: high



Source of risk: external



Year-on-year change in risk: stable

PRICE RISK

(decline in the market prices for Nornickel metals due to the global market situation)

Potential decrease in sales revenues due to lower prices for Nornickel metals subject to actual or potential changes in demand and supply in certain metals markets, global macroeconomic

trends, and the financial community’s appetite for speculative/investment transactions in the commodity markets.

Key risk factors	Impact on Nornickel’s development goal and strategy	Mitigation
Lower demand for metals produced by Nornickel. A slowdown in the global economy in general and in the economies consuming Nornickel metals in particular. Supply and demand imbalance in metals markets	Enhancing and monetising Nornickel’s leadership in the nickel and palladium markets	<p>Nornickel is consciously accepting the existing price risk for now. To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> continuously monitors and forecasts supply and demand dynamics for key metals secures feedstock supplies for key consumers through long-term contracts to supply metals in fixed volumes as a member of the global Nickel Institute and the International Platinum Group Metals Association, works with other nickel and PGM producers to maintain and expand the demand for these metals. <p>Should the price risk materialise, Nornickel will consider cutting capital expenditures (revising the investment programme for projects that do not have a material impact on Nornickel’s development strategy)</p>

Impact on goals:
highSource of risk:
mixedYear-on-year change in risk:
stable**MARKET RISK****(lower competitiveness of Nornickel products)**

Lower competitiveness of Nornickel products in the market may result in discounts to the market price and a decrease in Nornickel's income.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
<p>Stricter market requirements on product quality. Competition from producers of cheaper nickel.</p> <p>Car makers switching from palladium to platinum as the preferred catalyst in petrol engines.</p> <p>Sanctions</p>	<p>Enhancing and monetising Nornickel's leadership in the nickel and palladium markets</p>	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> • cooperates with other market participants to monitor changes in market requirements on product quality • diversifies its metal product sales across industries and geographies • improves and diversifies its product range • seeks partnership opportunities with key producers of batteries for electric vehicles • maintains strategic partnerships with car makers based on guarantees of long-term palladium supplies • reviews market requirements on product quality • seeks partnerships with key producers of batteries for electric vehicles

Impact on goals:
mediumSource of risk:
mixedYear-on-year change in risk:
stable

TIGHTER ENVIRONMENTAL REGULATIONS

Environmental regulations are tightening, including environmental permitting process and stricter governmental control over environmental compliance.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
<p>Domestic and international focus on environmental protection and sustainability. Extensive changes in environmental laws and regulations. For example, the environmental permitting framework was amended on 1 January 2019, introducing a single environmental permit and a new system of standards setting out technological limits. Technological restrictions related to mine water and industrial wastewater treatment</p>	<p>Compliance by Nornickel and Norilsk Nickel Group entities with the applicable laws, regulatory requirements, corporate standards, and business codes</p>	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> • carries out an environmental action plan to reduce emissions and discharges, as well as to ensure timely waste management • involves its employees in working groups of dedicated committees, regional ministries, and government agencies • takes part in joint projects with nature reserves located within Nornickel's regions of operation

Impact on goals:
lowSource of risk:
mixedYear-on-year change in risk:
stable

FX RISK

US dollar depreciation against the rouble, including due to changes in the Russian economy and the policy of the Bank of Russia, may adversely affect

Nornickel's financial performance, as most of its revenues are denominated in US dollars, while most of its expenses are denominated in roubles.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
Increase in Russia's balance of payments, higher oil exchange prices, and lower imports. Country-specific macroeconomic changes. Change in ratings. Lower volatility in financial markets of Russia and other emerging markets	Maintaining investment-grade credit ratings. A debt portfolio with a well-balanced profile in terms of maturity, currency composition, and sources of financing	To manage this risk, Nornickel: <ul style="list-style-type: none"> • maintains a balanced debt portfolio with USD-denominated borrowings prevailing to ensure a natural hedge • implements regulations that limit pricing for expenditure contracts with prices fixed in foreign currencies • uses derivatives to mitigate its exposure by balancing USD-denominated cash flows from revenues and cash flows from liabilities denominated in other currencies

Impact on goals:
mediumSource of risk:
mixedYear-on-year change in risk:
stable

INVESTMENT RISK

Risk related to time and budget overruns, and performance targets of Nornickel's major investment projects.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
Changes in forecasts of ore volumes, grades and properties resulting from follow-up exploration. Delays in implementing investment projects. Further changes to budgets of investment projects. Project performance targets revised in the course of project implementation	Strategic goal: growth driven by Tier 1 assets. Developing the mining, concentration and metallurgical assets. Developing the mineral resource base and upgrading core production processes at Nornickel's Tier 1 assets	To manage this risk, Nornickel: <ul style="list-style-type: none"> • carries out proactive exploration and updates the mining plan (a long-term production plan) based on the progress of its major investment projects developing the mineral resource base • holds external expert audits of geological data • develops an in-house mining and geological information system • as part of the project assurance process, conducts internal (cross-functional) audits of major investment projects at each stage in their life cycle • enhances incentives for project delivery • implements an integrated system for managing capital projects • ensures that short-term, mid-term and long-term planning processes for capital projects are in sync

OPERATIONAL RISKS



Impact on goals:
high



Source of risk:
internal



Year-on-year change in risk:
stable

WORKPLACE INJURY RISK

Failure to comply with Nornickel's health and safety (H&S) rules may result in threats to employee health

and life or temporary suspension of operations, or cause property damage.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
<p>Suboptimal methods of work organisation. Disruptions in technological processes. Exposure to hazardous factors. Non-compliance with H&S laws regarding obtaining licenses to operate hazardous equipment in a timely manner</p>	<p>Occupational health and safety</p>	<p>Pursuant to the Occupational Health and Safety Policy approved by the Board of Directors, Nornickel:</p> <ul style="list-style-type: none"> • continuously monitors compliance with H&S requirements • improves the working conditions for its employees and contractors deployed at Nornickel's production facilities, including by implementing new technologies and labour-saving solutions, and enhancing industrial safety at production facilities • provides employees with certified state-of-the-art personal protective equipment • carries out preventive and therapeutic interventions to reduce the potential impact of harmful and hazardous production factors • regularly trains and briefs employees on health and safety, assesses their health and safety performance and conducts corporate workshops, including by deploying special simulator units • enhances methodological support for H&S functions, including through the development and implementation of corporate H&S standards • improves the risk assessment and management framework at the Group's production facilities as part of the Risk Control project • reviews the competencies of line managers at Nornickel's production facilities, develops H&S training programmes and arranges relevant training sessions • provides training for managers under the programme to determine root causes of accidents using global best practices (Root Cause and Threat Tree, Five Whys, etc.) • communicates the circumstances and causes of accidents to all Nornickel employees, conducts ad hoc safety briefings • introduces frameworks to manage technical, technological, organisational and HR changes

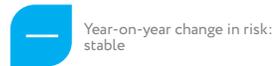
Impact on goals:
highSource of risk:
mixedYear-on-year change in risk:
stable

INFORMATION SECURITY RISK

Potential cybercrimes may result in an unauthorised transfer, modification or destruction of information assets, disruption or reduced efficiency of Nornickel's

IT services, business, technological and production processes.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
Growing external threats. Unfair competition. Rapid development of Nornickel's IT infrastructure and automation of technological and business processes. Unlawful acts by employees and/or third parties	Mitigation of the information security risk and risk of cyberattacks on Nornickel's process control systems	To manage this risk, Nornickel: <ul style="list-style-type: none"> ensures compliance with Russian laws and regulations with respect to personal data and trade secret protection, insider information, and critical information infrastructure implements MMC Norilsk Nickel's Information Security Policy categorises information assets and makes information security risk assessments raises information security awareness among employees uses technical means to ensure information security of assets and manage access to information assets ensures information security of process control systems monitors threats to information security and the use of technical protection means, including vulnerability analysis, penetration testing, cryptographic protection of communication channels, controlled access to removable media, protection from confidential data leaks, and mobile device management develops an information security framework sets up and certifies the information security management system



TECHNICAL AND PRODUCTION RISK

Technical, production, or natural phenomena which, once materialised, could have a negative impact on the implementation of the production programme and cause equipment breakdown or reimbursable damage to third parties and the environment.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
<p>Harsh natural and climatic conditions, including low temperatures, storm winds, and snow load.</p> <p>Unscheduled stoppages of core equipment caused by fixed assets' wear and tear.</p> <p>Release of explosive gases and flooding of mines.</p> <p>Collapse of buildings and structures.</p> <p>Infrastructure breakdowns</p>	<p>Efficient delivery of finished goods (metals) in line with the production programme. Timely supply of products to consumers</p>	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> ensures proper and safe operation of its assets in line with the requirements of technical documentation, as well as technical rules and regulations as prescribed by local laws across Nornickel's geographic footprint develops ranking criteria and criticality assessment for the Norilsk Nickel Group's key industrial assets timely replaces its fixed assets to achieve production safety targets implements automated systems to control equipment process flows, uses state-of-the art engineering controls improves the maintenance and repair system trains and educates its employees both locally, on site, and centrally, through its corporate training centres systematically identifies and assesses technical and production risks, implements a programme of organisational and technical measures to mitigate relevant risks improves the system of stationary gas analysers, provides employees with portable gas analysers develops the technical and production risk management system, including by engaging independent experts to assess the system's performance and completeness of data develops and tests business continuity plans which set out a sequence of actions to be taken by Nornickel's personnel and internal contractors in case of technical and production risk causing maximum damage. These plans are aimed at the earliest resumption of Nornickel's production operations engages, on an annual basis, independent surveyors to analyse Nornickel's exposure to disruptions in the production and logistics chain and make assessments of related risks. <p>In 2019, insurance was taken out against key technical and production risks as part of the property and business interruption (downtime) insurance programme, with emphasis on best risk management practices in the mining and metals industry</p>



Impact on goals:
medium



Source of risk:
internal



Year-on-year change in risk:
stable

POWER OUTAGES AT PRODUCTION AND SOCIAL FACILITIES IN THE NORILSK INDUSTRIAL DISTRICT

Failure of core equipment at generating facilities and transmission grid facilities may result in power, heat and water shortages at key production facilities

of Nornickel's Polar Division and social facilities in the Norilsk Industrial District.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
Isolation of the Norilsk Industrial District's power grid from the national grid (Unified Energy System of Russia). Harsh natural and climatic conditions, including low temperatures, storm winds, and snow load. Length of power, heat and gas transmission lines. Wear and tear of core production equipment and grid infrastructures	Efficient delivery of finished goods (metals) in line with the production programme. Timely supply of products to consumers. Social responsibility: comfort and safety of people living in Nornickel's regions of operation	To manage this risk, Nornickel: <ul style="list-style-type: none"> operates and maintains generating and mining assets as required by the technical documentation, industry rules and standards, and applicable laws timely constructs and launches transformer facilities, timely replaces transmission towers timely executes retrofits (replaces equipment) of TPP and HPP power units timely upgrades and repairs trunk gas and condensate pipelines and gas distribution networks



Impact on goals: medium



Source of risk: mixed



Year-on-year change in risk: stable

COMPLIANCE RISK

The risk of legal liability and/or legal sanctions, significant financial losses, suspension of production, revocation/suspension of a licence, loss of reputation,

or other adverse effects arising from Nornickel’s non-compliance with the applicable laws, regulations, instructions, rules, standards or codes of conduct.

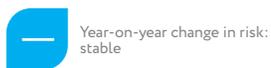
Key risk factors	Impact on Nornickel’s development goal and strategy	Mitigation
<p>Discrepancies in rules and regulations. Considerable powers and a high degree of discretion exercised by supervision agencies.</p>	<p>Compliance by Nornickel and Norilsk Nickel Group entities with the applicable laws, regulatory requirements, corporate standards, and business codes</p>	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> • ensures its compliance with the applicable laws • defends its interests during regulatory inspections and administrative proceedings • uses pre-trial and trial remedies to defend its interests • ensures that agreements signed by Nornickel contain clauses safeguarding its interests • implements anti-corruption, anti-money laundering, counter-terrorist financing, and counter-proliferation financing initiatives • takes actions to prevent unlawful use of insider information and market manipulation • ensures timely and reliable information disclosures as required by the applicable Russian and international laws • has its employees attend insider information management and anti-corruption training courses • ensures that all employees receive anti-corruption induction briefing. <p>In addition, the following internal documents have been developed and approved:</p> <ul style="list-style-type: none"> • Regulations on Antitrust Compliance with Respect to Economic Concentration in the Russian Federation • Procedure for Interaction between MMC Norilsk Nickel Units and Norilsk Nickel Group Entities in Preparing Securities Market Disclosures. <p>Procedure for Maintaining and Accessing MMC Norilsk Nickel’s Permit Document Register</p>

Impact on goals:
mediumSource of risk:
mixedYear-on-year change in risk:
increased

SOCIAL RISK

Tensions may escalate among the workforce due to the deterioration of social and economic conditions in Nornickel's regions of operation.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
<p>Headcount/staff composition optimisation projects. Rejection of Nornickel's values by individual employees and/or third parties. Limited ability to perform annual wage indexation. Dissemination of false and inaccurate information about Nornickel's plans and operations among the Group's employees. Reallocation of funds originally intended for social programmes and charity</p>	<p>Social responsibility:</p> <ul style="list-style-type: none"> partnering with regional and local authorities to develop a social infrastructure that supports a safe and comfortable living environment for local communities facilitating the employees' professional and cultural development and building up talent pools across Nornickel's regions of operation implementing long-term charity programmes and projects 	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> strictly adheres to the terms and conditions of collective bargaining agreements between the Group entities and their employees. In 2018, MMC Norilsk Nickel signed a new collective bargaining agreement for 2018–2021 actively interacts with regional authorities, municipalities and civil society institutions fulfils its social obligations under public private partnership agreements implements the World of New Opportunities charity programme aimed at supporting and promoting regional civil initiatives implements the Norilsk Upgrade project to introduce innovative solutions for sustainable social and economic development of the region implements regular sociological monitoring across its operations surveys Norilsk residents on living standards, employment, migration trends, and general social sentiment to identify major issues implements social projects and programmes aimed at supporting employees and their families, as well as Nornickel's former employees maintains dialogues with stakeholders and conducts questionnaire surveys while preparing the Group's public sustainability reports provides adequate social support to redundant staff under Kola MMC's social programmes and develops the Social and Economic Development Strategy of the Pechengsky District



CHANGES IN LEGISLATION AND LAW ENFORCEMENT PRACTICES

Changes in legislation may cause financial damages (extra costs to ensure compliance with stricter requirements, a heavier tax and levy burden, etc.). Changes in law enforcement and judicial practices,

uncertain legal treatment of certain matters may hamper Nornickel’s business, entail extra expenses and delay or raise the cost of its investment projects.

Key risk factors	Impact on Nornickel’s development goal and strategy	Mitigation
<p>Unstable legal environment (including lack of codified/uniform regulations in various areas). Frequent changes to legislation. Complicated geopolitical situation. Lack of treasury funds (the government needs to boost its tax and other proceeds)</p>	<p>Compliance by Nornickel and Norilsk Nickel Group entities with the applicable laws, regulations, corporate standards, and business codes</p>	<p>To manage this risk, Nornickel:</p> <ul style="list-style-type: none"> continuously monitors changes in legislation and law enforcement practices across all of its business areas conducts legal review of draft laws and regulations as well as relevant amendments participates in discussions of draft laws and regulations, both publicly and as part of expert groups engages its employees in relevant professional and specialist training programmes, corporate workshops, and conferences cooperates with government agencies to ensure that new laws and regulations take into account Nornickel’s interests

CLIMATE CHANGE RISKS



Impact on goals:
medium



Source of risk:
external



Year-on-year change in risk:
stable

LACK OF WATER RESOURCES

Water shortages in storage reservoirs of Nornickel's hydropower facilities may result in failure to achieve required water pressure at HPP turbines leading to limited power production and in drinking water shortages in Norilsk.

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
Abnormal natural phenomena (drought) caused by climate change	Efficient delivery of finished goods (metals) in line with the production programme. Timely supply of products to consumers. Social responsibility: comfort and safety of people living in Nornickel's regions of operation	To manage this risk, Nornickel: <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 electricity consumption in an emergency case refurbishes its hydropower plants to increase power output through improving the hydroelectric units' performance (implementation period: 2012–2021)



Impact on goals:
medium



Source of risk:
external



Year-on-year change in risk:
stable

PERMAFROST THAWING

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

Key risk factors	Impact on Nornickel's development goal and strategy	Mitigation
Climate change, average annual temperature increase over the last 15 to 20 years. Increased depth of seasonal permafrost thawing	Efficient delivery of finished goods (metals) in line with the production programme. Timely supply of products to consumers. Social responsibility: comfort and safety of people living in Nornickel's regions of operation	To manage this risk, Nornickel: <ul style="list-style-type: none"> regularly monitors the condition of foundation beds underneath buildings and structures built on permafrost performs geodetic monitoring of the movement of buildings monitors soil temperature in buildings' foundations monitors the compliance of its facilities with operational requirements for crawl spaces develops recommendations and corrective action plans to ensure safe operating conditions for buildings and structures