

ENVIRONMENTAL PROTECTION

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Zinc-aluminum-magnesium coating with micro-additive

Scale 1 : 10,000

Climate change



Climate change is one of the greatest threats facing the world today, impacting society, the economy, and security globally. The main drivers of climate change are greenhouse gas emissions.

Key highlights

- Climate change
- Air emissions

Key events in 2021

- NLMK Group developed a Climate Programme providing for a reduction in specific emissions to 1.69 t CO₂/t Fe by 2030 (–10% vs. 2023) and a scenario for achieving carbon neutrality by 2050.
- The company filled out the CDP Climate Change questionnaire for the first time and received a B- rating, which is above the industry average.
- NLMK implemented a number of investment projects aimed at reducing the carbon intensity of its operations (achieving higher iron content in raw materials, reducing coke consumption, and improving energy efficiency). The full effect of the above projects will manifest itself in 2022.
- Deloitte verified CO₂ emission benchmarks for NLMK Lipetsk blast furnaces calculated according to the EU Emissions Trading System methodology, and confirmed that NLMK is among the 10–15% companies with the best performance in the EU.
- An in-depth assessment of the most significant climate risks and opportunities for the company was carried out.
- Memorandums were signed with Gazpromneft and NOVATEK, including memorandums on the development of CO₂ capture, utilization and storage projects.
- An agreement was signed with Rosenergoatom on cooperation in the field of low-carbon electricity supply. In 2021, Rosenergoatom provided nuclear energy to Group companies.
- NLMK Group took part in the 26th UN Climate Change Conference (COP26) in Glasgow.

United Nations Global Compact principles

Principle 7. Businesses should support a precautionary approach to environmental challenges.

Principle 8. Businesses should undertake initiatives to promote greater environmental responsibility.

Principle 9. Businesses should encourage the development and diffusion of environmentally friendly technologies.

Global Sustainable Development Goals



Key 2021 figures

1.84 t

CO₂-equivalent per tonne of Fe¹
(Scope 1 + Scope 2) (–1% yoy)

1.89 t

of CO₂-equivalent per tonne of steel
(Scope 1 + Scope 2) (–1% yoy)

–0.4 m t

of CO₂ through projects implemented in 2021
(Scope 1 + Scope 2)

–1.55 m t

of CO₂ through purchasing low-carbon power

According to various estimates, the iron and steel industry accounts for 7–9% of global greenhouse gas emissions. Therefore, the decarbonization of iron- and steelmaking is a major challenge for all industrial countries. The industry is currently engaged in active discussions of the ways to reduce its climate impact, supporting measures, and the financing sources for potential initiatives.

NLMK Group is fully committed to climate change action and takes meaningful steps towards decreasing greenhouse gas emissions, progressively reducing the carbon footprint of its

products. Moreover, the company's products (such as steel for wind energy and energy-efficient electrical steels) enable a broad range of consumer industries to reduce their climate impact substantially (emission volumes avoided due to NLMK's products are comparable to emission volumes from the Group's steel production) and attain their decarbonization goals.

On average steel produced by NLMK Group consists of 35% of recycled resources such as ferrous scrap and other materials that are climate neutral and can significantly reduce

the company's carbon footprint. Specific CO₂ emissions from scrap steelmaking are approximately four times lower than from primary raw materials.

This year NLMK Group published its second report in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)¹.

Climate strategy priorities

The company's leadership devotes continued attention to climate-related issues, which are embedded into the corporate governance system. The Board of Directors, the Board's committees, CEO (Chairman of the Management Board), and the Management Board determine strategic growth priorities and ensure overall sustainability management. The company's climate change initiatives are deeply intertwined with sustainable development and risk management matters.

In the reporting period, a working group on climate change issues was created under the Board of Directors, which included six of its independent members. Meetings of the working group are held several times a year. In 2021, three meetings took place. The agenda of the meetings includes such issues

as the decarbonization strategy, climate projects, climate risks, methodology and benchmarking, and progress towards achieving the goals set. [GRI 102-31](#)

NLMK Group's management devotes particular attention to climate aspects when considering the company's strategy, risk management, annual budget, and business plans, as well as when setting the company's business goals and monitoring the implementation and efficiency of major investments.

Our climate impact reduction targets are determined by the Strategic Planning Committee of the Board of Directors ([see Committees of the Board of Directors section for more details](#)). This issue is considered by the committee annually. Goals related to climate impact minimization are assigned by the CEO

(Chairman of the Management Board) to the functional managers of the Group, as well as the heads of production divisions at NLMK Group companies. The company evaluates progress towards achieving the goals annually. [GRI 102-19](#) [GRI 102-20](#)

The Board of Directors working group on climate change and the Management Board monitor the progress in achieving the goals and addressing the Committee's instructions, and consider proposals for new tasks and projects. Such tasks and projects are further developed and presented to the Committee for approval.

Targets to reduce greenhouse gas emissions are cascaded to the company's executives that have an impact on these indicators, including the heads of the Group's key operations.

¹ The Task Force on Climate-related Financial Disclosures (TCFD) was established in December 2015 by the Financial Stability Board (FSB), an international body established by the G20 states. In June 2017 the TCFD published its recommendations, which set out the basic principles of climate-related disclosures for companies and organizations.

PATHWAY TO CARBON NEUTRALITY

2030 2050

Medium-term targets of specific CO₂ emission reduction

In 2021, NLMK Group approved the Climate Programme to reduce specific emissions to 1.69 t CO₂/t Fe or 1.72 t CO₂/t of steel by 2030. The key project of the Programme is the new metals and mining facility at Stoilensky, Green Horizon. The project provides a foundation for major company transformation and paves the way for transition to an electric arc method of steel production based on DRI/HBI (coke-free iron ore with a high iron content) as feedstock. Even with the current energy consumption structure, the above route allows for a twofold reduction of CO₂ emissions compared to the BF-BOF route. Going forward, when sufficient volumes of “green” hydrogen and technologies of industrial recovery with this gas become available, the decarbonization potential of the process would be over 90% (vs. the current levels).

Moreover, the next stage of the company’s strategic development includes a number of other projects aimed at reducing the current chain’s carbon footprint (consuming less carbon feedstock and fuels).

NLMK Group’s business model has a number of advantages that support a successful transition to a new, less carbon-intensive production chain. The first one is the availability of a world-class resource base, which enables the Group to produce pellets with a high iron content (an essential prerequisite for DRI/HBI production, including within the framework of the Green Horizon project). The second one is NLMK Group’s access to natural gas and low-carbon nuclear electric energy. Finally, since the Group has no coal assets, it is motivated to reduce coal and coke consumption.



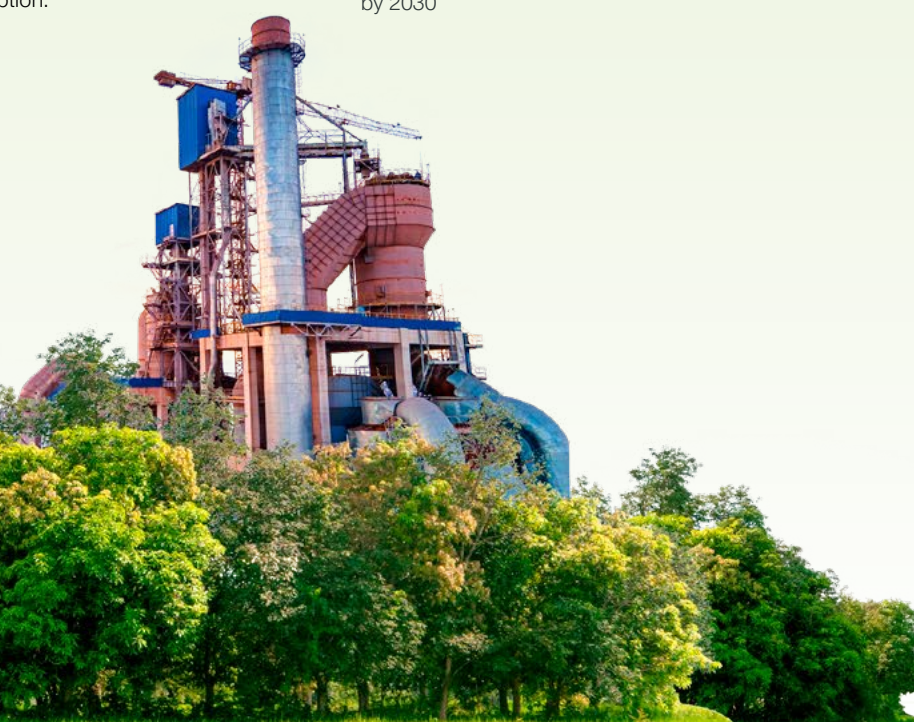
Reducing of specific emissions to

1.69

t CO₂ /t Fe
or

1.72

t CO₂ / t of steel
by 2030



Long-term CO₂ reduction goals

On top of Strategy 2030, NLMK Group has set long-term goals to reduce specific emissions by 2050 to at least 1.2 t of CO₂/t of steel (40% reduction vs. the current level) with a full transition to an HBI+EAF chain using the Group’s existing iron ore, as well as natural gas and electricity from the grid at its current level of carbon intensity.

When the industrialized hydrogen-based iron reduction technologies (where hydrogen is used instead of natural gas) and a sufficient amount of low-carbon electricity become available, the HBI+EAF process chain will reduce the Group’s carbon intensity to 0.2 t of CO₂/t of steel (90% reduction vs. the current base). The remaining emissions can be reduced through CO₂ capture projects or offset by absorption projects. Thus, when the necessary external conditions are met, NLMK Group aims to achieve carbon neutrality.

NLMK Group’s long-term decarbonization strategy implies a complete replacement of the BF-BOF steel production chain by 2050. The step-by step process transition will depend on the blast furnace capital repairs schedule and other technological constraints. Decisions to close blast furnaces will be made so as to prevent over-investment in capacity maintenance and steel production decline.

NLMK GROUP AND ROSENERGOATOM AGREE ON STRATEGIC PARTNERSHIP IN ENERGY

In 2021, NLMK Group and Rosenergoatom (part of the Electric Power Division of Rosatom State Corporation), a leading Russian generation company, signed a partnership agreement on low carbon power energy supplies.

The agreement covers the possibility of supplying low-carbon energy from Rosenergoatom power stations to Stoilensky’s new metals and mining facility.

Increasing the share of low-carbon energy sources is one of NLMK Group’s priority initiatives aimed at reducing the carbon intensity of production and greenhouse gas emissions. Nuclear energy is one of the main decarbonization tools, currently accounting for a third of global low-carbon electricity production.

In 2021 NPPs supplied over 3 billion kWh to NLMK Group sites allowing to cut 1.55 million tonnes of CO₂ Scope 2 emissions.

NLMK GROUP JOINS FORCES TO REDUCE CLIMATE FOOTPRINT

NLMK Group and one of Russia’s largest oil companies have signed a memorandum of cooperation to attain climate impact reduction goals.

The companies plan to jointly develop projects aimed at reducing greenhouse gas emissions, including the development of technologies for the production, transportation, storage, and use of hydrogen in steelmaking. As part of the agreement, the companies will also jointly research and test carbon capture, utilization, and storage technologies.

¹ Carbon Capture, Utilization and Storage technology. Though CO₂ capturing technologies are available, none of them is commercially viable for large volumes of greenhouse gases. Such projects require significant CAPEX and OPEX.

Performance and targets

Global climate change challenges society to reduce greenhouse gas emissions. To that end, NLMK Group introduces new technologies, increases production efficiency, and monitors and controls its emissions.

NLMK Group is constantly enhancing the level and quality of greenhouse gas emission disclosures.

In 2021, the Group began to use the market-based method for quantifying Scope 2 emissions in its internal calculations in addition to the location-based method. The location-based method takes into account the average specific greenhouse gas emissions per power system arising from electricity generation. The market-based method takes into account the emissions from electricity generation that the company received from a specific source, such as a specific power plant or a group of power plants. In such cases the emission factors take into account the concluded energy purchasing contracts¹.

The company also works with suppliers to obtain information about the carbon footprint associated with the purchased products. In 2021, the company took part in the CDP Climate Change² survey for the first time, immediately receiving a high B- rating, which is higher than the industry average (level C).

NLMK Group employs recognized international and industry standards and methodologies for GHG emission reporting and calculation, including the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. WRI and WBCSD, 2004 (revised); 2006 IPCC Guidelines for National Greenhouse Gas Inventories /2019 Refinement;

INDEPENDENT AUDITOR VERIFIES NLMK'S GHG REPORT

International audit firm Deloitte has verified 2020 CO₂ emissions data associated with NLMK's key transformation products (coke, sinter, pig iron, lime, and calcined dolomite) in line with the methodology used in the EU to set CO₂ emissions quotes for Europe. Verification of the indicators provides NLMK with a reliable benchmarking with the EU emissions trading system.

NLMK's CO₂ emissions per tonne of pig iron totaled 1.39 t of CO₂/t. By way of comparison, 10% of steelmaking companies with the lowest emissions in the EU emit 1.36 t of CO₂/t. NLMK's performance is significantly better than the European steelmakers' average emissions of 1.49 t of CO₂/t.

This was the first time that NLMK's greenhouse gas emission volume was verified in line with the EU ETS methodology. In future, NLMK plans to confirm the data annually.

WSA CO₂ Data Collection User Guide; Methodological guidelines on calculation of greenhouse gas emissions by organizations engaged in economic or other activities in the Russian Federation approved by order No. 300 of the Russian Ministry of Natural Resources and the Environment dd. 30 June 2015; EU Emission Trading System: The Monitoring and Reporting Regulation – General guidance for installations, and others.

In 2020, the company introduced a centralized system to collect input data from all Group sites. It is based on leveraging regular reporting information on the use of energy and other resources.

Since early 2020, the carbon content of each incoming batch of coal, coke, and other carbon-containing resources is continuously measured at NLMK Lipetsk and Altai-Koks via laboratory tests. This has enabled higher precision of CO₂ emission calculations using the carbon balance method. NLMK is the first Russian

steel company to conduct such a detailed analysis of incoming raw materials in order to determine their carbon footprint.

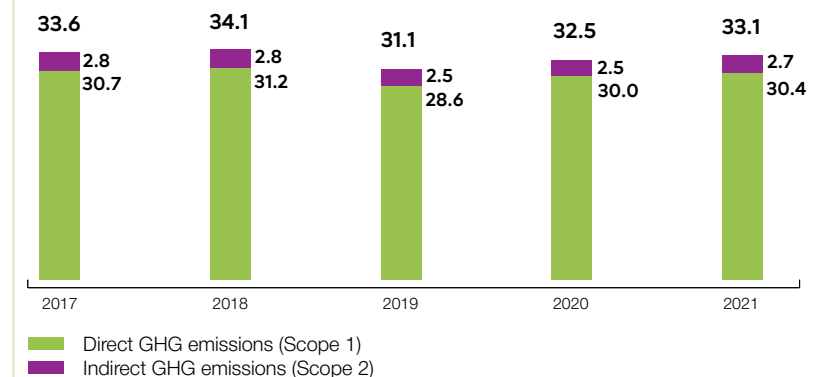
In addition to the fact that Scope 2 emissions are now determined based on two methods, the approach to selecting average CO₂ emission factors for electricity purchased from the grid for the Group's Russian sites was changed. In 2021, the website of the wholesale electricity market Trade System Administrator was chosen as the source of information³. The Trade System Administrator has been publishing data on the average CO₂ emission factor for the First Synchronous Zone of the United Energy System of Russia for two years. All the Russian sites of the Group operate in the First Synchronous Zone. To enable proper comparison of 2021 emissions against previous years, emission data for 2016–2020 were recalculated applying the average 2020 annual coefficient taken from the Trade System Administrator website.

In 2022, the reductions generated from this low-carbon energy will be used to offset CO₂ emissions from some of the company's steel products.

The overall contribution of additionally calculated emissions from mobile units and CH₄, N₂O emissions to NLMK Group's total direct GHG emissions is less than 1% in CO₂ equivalent.

NLMK Group also evaluated CO₂ emissions from biomass combustion (wood chips and charcoal), which is used at the Lipetsk site for ferroalloy production. These emissions are climate-neutral, provided for reference only, and are not included in the overall sum of reported emissions. The company is currently considering the prospects of using sustainable biomass in its key steelmaking processes. The charcoal supplied to the company is FSC certified¹.

GHG emissions trends (Scope 1 + Scope 2, location-based), m t of CO₂-equivalent



Direct and indirect energy emissions, '000 t of CO₂-equivalent GRI 305-1 GRI 305-2

Indicator	2017	2018	2019	2020	2021
Direct GHG emissions (Scope 1)	30,740	31,232	28,601	30,036	30,436
CO ₂	30,665	31,158	28,531	29,964	30,365
Including from stationary sources	30,459	30,956	28,311	29,753	30,151
CH ₄	47	46	42	44	44
N ₂ O	28	28	28	28	28
Indirect energy emissions (Scope 2)², location-based	2,839	2,832	2,546	2,458	2,698
Indirect energy emissions (Scope 2)³, market-based	2,869	2,871	2,586	2,502	1,711
Total (Scope 1 + Scope 2), location-based method	33,579	34,064	31,147	32,494	33,134
including CO ₂ for stationary sources (location-based)	33,295	33,785	30,854	32,210	32,847
Total (Scope 1 + Scope 2) market-based	33,609	34,103	31,187	32,537	32,147
including CO ₂ for stationary sources (market-based)	33,325	33,824	30,893	32,253	31,860
CO ₂ emission from biomass combustion (for reference)	16	17	25	25	26

By type of activity, blast furnace operations (50%) and energy production (15%) are the largest contributors to direct greenhouse gas emissions (Scope 1).

¹ Forest Stewardship Council.

² Emissions from fuel combustion in the production of electricity received from the external grid for the needs of the Group's sites. The calculation was made using the location-based method: by the average weighted rates of greenhouse gas emissions produced at a certain territory (country, region, state).

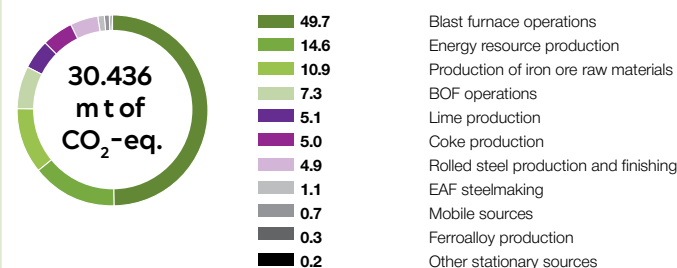
³ Emissions related to supplies of external electricity (in case of Rosenergoatom, based on free contracts of electricity sales and purchase).

¹ Scope 2 emissions according to the market-based method was calculated using residual mix coefficients for electric energy purchased from the grid and 0 coefficient for electric energy purchased under free bilateral contracts with Rosenergoatom. However it should be noted that only EU countries regularly define residual mix data. For other countries of NLMK presence regional coefficient was used as residual mix (in line with Scope 2 GHG Protocol Guidance).

² A non-profit charitable organization that operates a global disclosure system for investors, companies, cities, states and regions to manage their environmental impact, including climate impact. CDP ratings through disclosure drive companies towards sustainable transformation and are one of the global rating systems.

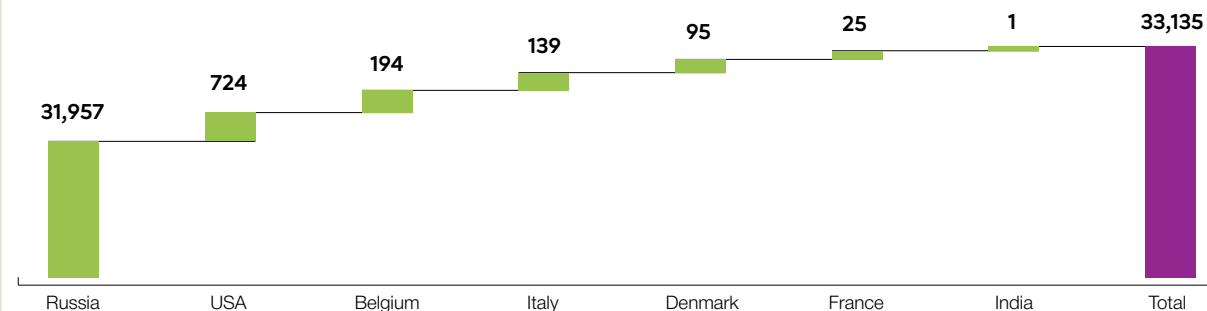
³ See <https://www.atsenergo.ru/results/co2> for more details.

Direct GHG emissions by type of activity (Scope 1) in 2021¹, %



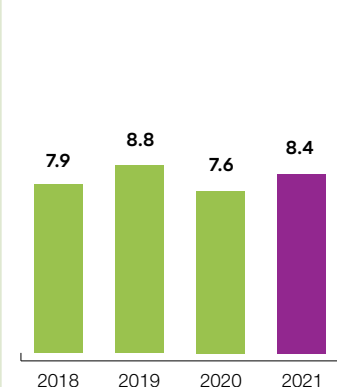
The company continues to assess other indirect greenhouse gas emissions associated with the production of the main types of external resources used by NLMK Group companies (upstream emissions) and their delivery to the companies' gates, as well as the transportation of raw materials and semi-finished products between Group companies². Estimated coverage is at least 95%. For the purchased electricity, Scope 3 included emissions related to fuel production, processing, and delivery, as well as losses in networks during electricity transmission.

NLMK Group total direct and indirect energy emissions of GHG (Scope 1 + Scope 2, location-based) in 2021 by country, '000 t of CO₂-equivalent

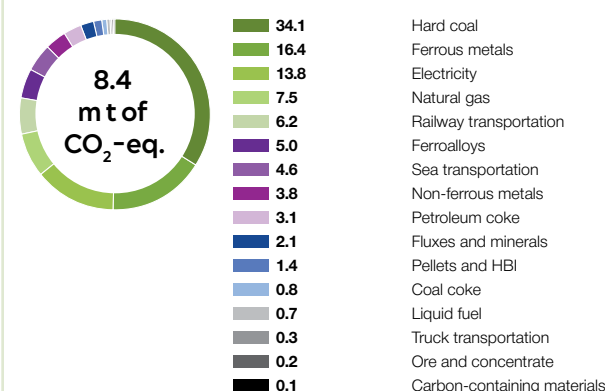


Upstream GHG emissions (Scope 3), m t of CO₂ equivalent

GRI 305-3



Other indirect GHG emissions (Scope 3) upstream along the value chain by major category, %



The largest part of other indirect GHG emissions is linked to coal — 34% of the total volume. The category is mostly made up by methane emissions

in coal mining. Emissions under "Ferrous metals" include sourcing of metals for production of steel from third parties.

¹ The CO₂ emissions from process gas combustion (blast furnace and coke oven gases) outside the gas sources but within the Group's facilities, are considered equal to emissions from the combustion of an energy-equivalent amount of natural gas adjusted for combustion efficiency. The corresponding CO₂ deduction is made for process gas sources. The "Energy resources production" category includes emissions generated by production of heat, electricity, and technical gases.

² Emissions associated with the semi-finished products manufactured within the Group are not included in this category, as they are already taken into account in Scopes 1 and 2. Upstream emissions do not include emissions associated with the delivery of products to customers.

Specific CO₂ emissions, stationary sources¹, t of CO₂ eq./t

GRI 305-4

Indicator	2017	2018	2019	2020	2021
Specific direct emissions (Scope 1):					
per tonne of Fe	1.75	1.72	1.77	1.74	1.69
per tonne of steel	1.78	1.77	1.80	1.88	1.73
Specific indirect energy emissions (Scope 2, location-based):					
per tonne of Fe	0.16	0.16	0.16	0.14	0.15
per tonne of steel	0.17	0.16	0.16	0.16	0.15
Specific indirect energy emissions (Scope 2, market-based):					
per tonne of Fe	0.16	0.16	0.16	0.15	0.10
per tonne of steel	0.17	0.16	0.16	0.16	0.10
Specific total emissions (Scope 1 + Scope 2, location-based):					
per tonne of Fe	1.91	1.87	1.92 (1.87) ²	1.89 (1.86) ²	1.84
per tonne of steel	1.95	1.93	1.97 (1.93) ²	2.03 (1.91) ²	1.89
Specific total emissions (Scope 1 + Scope 2, market-based):					
per tonne of Fe	1.91	1.88	1.93 (1.88) ²	1.89 (1.86) ²	1.78
per tonne of steel	1.95	1.93	1.97 (1.93) ²	2.04 (1.91) ²	1.83

In addition to the commonly applied industry indicator – specific emissions per tonne of steel – calculations were carried out per tonne of end-product iron output (Fe), which is generally taken as the sum total of iron contained in the output of steel, commercial pig iron³ and commercial HBI. A significant share of the Group's total output is delivered in the form of commercial pig iron. The newly introduced metric enables better visibility into specific emission trends and will take into account the improvements planned for the coming decade and further ahead.

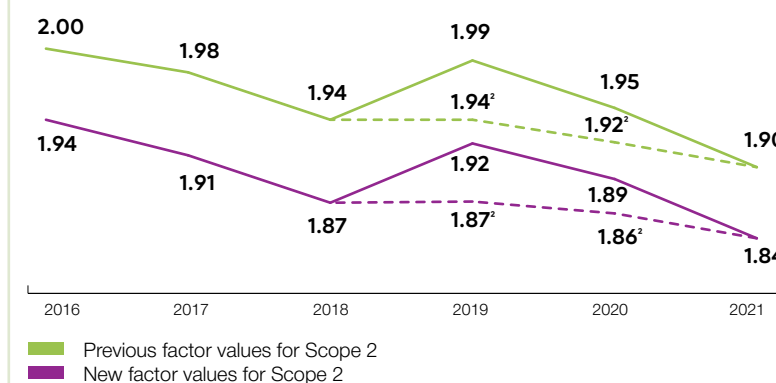
The increase in specific CO₂ emissions per tonne of steel in 2019 and 2020 vs. past periods was caused by a temporary decline in production output at Lipetsk during the implementation of the programme to upgrade blast furnace and steelmaking operations. The emission value in 2020 was additionally impacted by lower output in Europe and the US amid COVID-19. With normalized output volumes, NLMK Group's specific emissions have been decreasing over 2016–2020. In the market-based calculation, Scope 2

specific emissions went down by 4% from 2020 to 2021, and down by 5% from the 2018 baseline.

Last year's Annual Report specified CO₂ emissions per tonne of steel and per tonne of commercial pig iron. It was decided in 2021 to replace this approach in favour of a more comprehensive indicator. Specific emissions of past periods have been recalculated also per tonne of end-product iron output. Specific CO₂ emissions from stationary sources (Scope 1 + Scope 2, location-based) calculated per tonne of steel and commodity pig iron with the previous emissions factors for Scope 2 (the approach used last year), totalled 1.88 t of CO₂/t of steel and commercial pig iron in 2021 vs. 1.92 (1.90³) in 2020, which delivers a reduction of 2% (1%).

GRI 305-4

Specific CO₂ emissions (Scope 1 + Scope 2, location-based) from stationary sources, t/t of Fe



¹ In line with the corporate approach to setting targets on CO₂ emission indicators.

² Specific emissions excluding the transient impacts due to decreased production.

³ Specific emission per tonne of steel is still included into the report.

NLMK GROUP REDUCES CLIMATE FOOTPRINT THROUGH USE OF HYDROGEN-CONTAINING SECONDARY RESOURCES

NLMK Group utilizes secondary resources – steelmaking by-product gases – to reduce its fossil fuel consumption, thus cutting its annual greenhouse gas emissions by 3.5 million tonnes of CO₂.

NLMK uses blast furnace and coke off-gases to generate energy to support production, and as a direct energy carrier for the main process equipment. At NLMK Lipetsk, NLMK Group's flagship site, such electric energy covers 65% of the site's needs (the goal is to ensure 100% coverage by 2023). Among other factors, the energy value of off-gases is determined by their pure hydrogen content, from 7% in blast furnace gas to 60% in coke gas.

Annual consumption of blast-furnace and coke-oven gas across NLMK Group is 23 billion m³ per year. This volume of recyclable gas contains 3 billion m³ of hydrogen, which can be leveraged to further reduce reliance on carbon fossil fuels.

Consistent efforts are undertaken to reduce the company's environmental footprint. From 2010 to 2021, emissions of CO₂ per tonne of end-product iron output went down by 15% across the Group, and by 9% at the main production site in Lipetsk. This reduction has mostly been driven by improvements in operational efficiency of production (specific consumption of coal at Lipetsk was reduced by 185 kg/t of pig iron during the period), as well as by the growing use of electric-arc furnaces in steelmaking.

The 2023 target for specific CO₂ emission per tonne of steel (Scope 1 + Scope 2) is 1.91 t/t, down from 2.00 t/t in 2019

(a 5% decrease), the target per tonne of Fe is 1.87 t/t vs. 1.94 t/t in 2019 (a 4% decrease), the target per tonne of steel and marketable pig iron is 1.84 t/t vs. 1.92 t/t last year. The targets are informed by location-based calculations of Scope 2 emissions¹.

NLMK Group continues to develop and implement projects aimed at GHG emission reduction. These rely on well-known continued actions to improve energy efficiency and reduce fuel consumption, as well as on some innovative solutions. The latter include recycling of carbon

resources and biofuels in blast furnace operations and innovative CCUS technologies.

A series of projects to reduce CO₂ emissions was implemented in 2019–2020. The impact of each project was assessed based on the technical effects within the project timeframe: reductions in consumption of natural gas, coke and coke breeze, electrical power, oxygen, lime, dolomite, etc.

Reduction of CO₂ emissions by projects contributing to NLMK Group strategic target through 2023

GRI 305-5

Project (completed)	Go-live date	Reduction of CO ₂ emissions (Scope 1 + Scope 2), '000 t	Reduction of CO ₂ emissions (Scope 1 + Scope 2), kg / t of steel
Construction of co-gen boiler houses at NLMK Ural in the towns of Nizhnie Sergi and Beryozovsky	November 2019	31	1.8
Construction of a water-heating boiler house at NLMK Ural in the town of Revda	November 2019	8	0.4
Turbine-driven blower at Blast Furnace No. 7	November 2019	76	4.3
Implementation of a dynamic stacking model at the homogenization ore pile and of an APCS for dosing of fluxes at the charge preparation sections	December 2019	14	0.8
Stopping of BOF blowing at a certain carbon setpoint (applied to some products)	August 2020	3	0.2

¹ The emission factors for grid power remain unchanged to correct for exogenous factors in assessment of progress towards the targets.

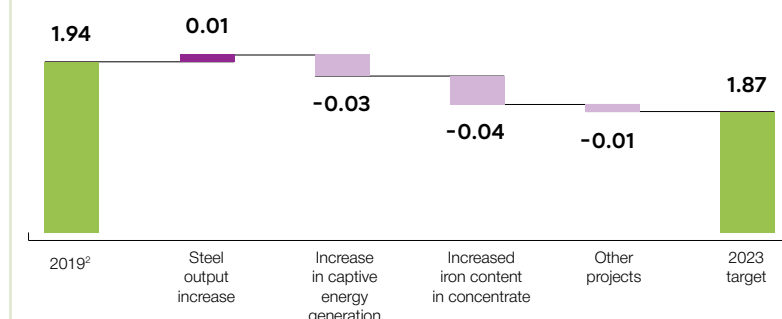
Project (completed)	Go-live date	Reduction of CO ₂ emissions (Scope 1 + Scope 2), '000 t	Reduction of CO ₂ emissions (Scope 1 + Scope 2), kg / t of steel
Replacement of manganese limestone with manganese ore	May 2021	82	4.7
Construction of an additional beneficiation section at Stoilensky ¹	July 2020	125	7.2
A set of measures to reduce lime consumption	2020	51	3.0
Other projects	2019–2020	19	1.1
Total		409	23.5

A new recovery power plant is to be launched in 2023 at NLMK Lipetsk fuelled with by-product gases from steelmaking and blast furnace operations. It will reduce CO₂ emissions by 650,000 t per year (35 kg per tonne of steel). Phased implementation of advanced beneficiation processes at Stoilensky from 2020 to 2023 will increase the Fe content in the charge and reduce BF fuel consumption at Lipetsk, thereby cutting CO₂ emissions by an additional 790,000 t per year (42,000 t per tonne of steel). Moreover, NLMK Group is pursuing a portfolio of research projects to start using hydrogen in production, i.e., recovery and utilization of CO₂, and other means of decarbonization.

The newly elaborated Climate Programme targets a specific emission reduction by 10% by 2030 vs. the 2023 base – down to 1.69 t CO₂/t of Fe or to 1.72 t CO₂/t of steel. To pursue the target the Group considers the following projects:

- Construction of an HBI module with a capacity of 2.5 million tonnes at Stoilensky

NLMK Group target for reduction of specific CO₂ emissions from stationary sources (Scope 1 + Scope 2) within the current strategic cycle through to 2023, w/o change of external emission factor, t of CO₂ / t of Fe

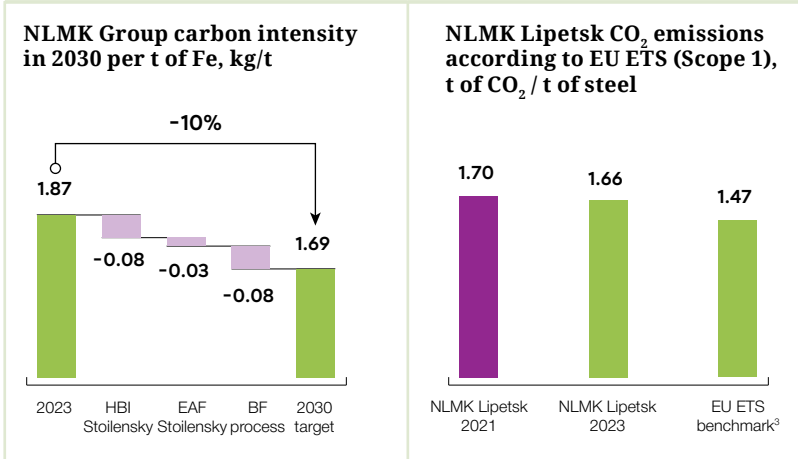


- Construction of an EAF based on the HBI module
- Implementation of effective projects to decarbonize the existing production chain, run CCUS pilots, and further enhance operational efficiency due to reduction of carbon fuel consumption and increased use of low-carbon power, as well as other actions.

¹ Includes operational efficiency improvements related to the project.

² Specific emission without the impact of temporary factors associated with reduced production output.

Specific direct emissions of CO₂ per tonne of steel at NLMK Lipetsk in 2021, calculated in line with the guidance¹ for European Union Emissions Trading System (EU ETS), was 1.70 t CO₂ / t of steel. The gap with the EU ETS benchmark² — as stricter requirements were imposed in 2021 for the period of 2021–2025 — currently stands at 16%. Within the current strategic cycle, NLMK Group aspires to reduce the gap down to 13%.



Climate-related cooperation

The company engages actively in cooperation with Russian and international partners to pursue reduction of environmental and climate impacts.

NLMK GROUP PARTICIPATES OF COP26

NLMK Group took part in the 26th Conference of the Parties to the UN Framework Convention on Climate Change (COP26).

As part of the Russian delegation, Nikita Vorobyev, NLMK Group Director of Environmental and Climate Affairs, presented the company's key efforts in decarbonization.

NLMK GROUP CONTRIBUTES TO GLOBAL DECARBONIZATION INITIATIVES

In 2020, NLMK Group joined the dialogue under the Mission Possible Partnership — a World Economic Forum coalition that seeks to accelerate decarbonization of the global industries that account for 30% of GHG emissions. In particular, NLMK Group participates in discussions of an initiative to reduce the climate impacts of ferrous metallurgy.

The dialogue parties address the matters of mitigation targets, the required legislation, market conditions, and decarbonization technologies for the steel industry.

NLMK GROUP PARTICIPATES IN THE GLOBAL WORLDSTEEL PROGRAMME TO REDUCE CLIMATE IMPACTS

Since 2020, together with Worldsteel experts, in line with Step Up decarbonization initiative NLMK Group has been developing actions to enhance equipment productivity, reduce resource consumption, improve feedstock quality, and better the reliability of production processes. These actions aim to implement best international practices in reduction of GHG emissions.

NLMK GROUP PARTICIPATES IN THE NET ZERO STEEL PATHWAY METHODOLOGY PROJECT

Launched in 2020, the project aims to develop a practical approach for ferrous metallurgy to set decarbonization targets, based on the climate science evidence and goals of the Paris Agreement. The project takes account of the actual situation in the ferrous industry and its ties to other sectors.

The Technical Working Group consisted of around 20 organizations that are related to ferrous metallurgy, including NLMK Group, as well as World Steel Association and ResponsibleSteel.

The need for a specialized methodology emerged since the Science Based Target initiative's Sectorial Decarbonization Approach (SBTI's SDA) does not properly account for or discards such factors as the different steelmaking routes (opportunities to decarbonize integrated and electric steelmaking operations are significantly different), replacement of virgin feedstocks in other industries with ferrous metallurgy by-products (which reduces the carbon footprint significantly), emission reduction due to offsetting projects, etc.

In July 2021, the final project report was published with important recommendations, but a detailed implementation guidance for target setting is yet to be developed.



¹ COMMISSION DELEGATED REGULATION (EU) 2019/331 dd. 19 December 2018 determining transitional Union-wide rules for harmonized free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council.

² EU ETS does not regulate BOF steel, but there are established benchmarks for coke, sinter, pig iron, lime and dolomite. The data given for 1 tonne of steel are calculated at the specified consumption coefficients.

³ Assuming the same consumption factors for coke and ore materials in 2021.

REDUCTION OF CO₂ EMISSIONS

ON THE CONSUMER SIDE DUE TO NLMK GROUP PRODUCTS



NLMK Group products advance low-carbon economy

Forests are the largest carbon sink globally — they absorb more CO₂ than they release into the atmosphere. Some industries drive the reduction of GHG emissions, too. For example, solar and wind power generation are replacing fossil fuels.

Calculation of CO₂ emissions averted due to consumption of certain goods is now a common practice, also applied in steelmaking and other industries.

NLMK Group produces steel plates that are used in construction of wind power installations, as well as premium electrical

steels that enable consumers to reduce specific magnetic losses in transformers and electrical motors. NLMK also produces high-strength and wear-resistant steels. This delivers metal structures of lower weight, which, in turn, leads to lower fuel and steel consumption and, ultimately, drives the transition to the low-carbon economy.

The list of products that help reduce CO₂ emissions by consumers was revised in 2021, and the corresponding reduction impacts were refined. NLMK Group estimates show that, if the planned volume of such products is successfully

sold in 2023, the volume of averted consumer-side CO₂ emissions will total about 29 million tonnes per year (on par with the Group's total annual emissions), and about 650 million tonnes throughout the entire product lifecycle (20–50 years).

The energy outputs (heat and electrical energy) supplied by Altai-Koks Coke and Chemical Plant are also driving lower CO₂ emissions from fossil fuels (coal) in the town of Zarinsk. Our analysis puts the reduction at 0.7 million tonnes of CO₂ per year.

Plans for 2022 and the medium term

In 2022, NLMK Group plans to continue elaborating projects that help reduce CO₂ emissions from existing processes, creating opportunities for supplying “green” steel to the market, developing in collaboration with partners the avenues to implement carbon

capture, utilization, and storage projects (CCUS), and conducting operational activities to reduce CO₂ emissions. The Group intends to engage with suppliers and clients to share information on carbon footprint reduction and setting decarbonization

targets, to develop a system for carbon footprint assessment for different types of products, to participate in the CDP programme, and to evaluate the prospects of obtaining a Responsible Steel certification.

Assessment of climate risks and their impact on strategy

GRI 201-2

Climate change implies a number of risks and opportunities for the iron and steel sector, which need to be identified in order to manage them and minimize their impact. Strategy 2030 was developed with existing and potential climate risks and opportunities in mind.

The steelmaking industry is highly sensitive to physical climate risks, as well as low-carbon economy transition risks.

The geographical location of the company's production sites determines the various levels of vulnerability to physical risks. Even through the industry overall is sensitive to the consequences of climate change, the location of Group companies

make them relatively less vulnerable to the materialization of physical risks. In addition, NLMK's control over supply routes of raw materials and finished products further reduces the risks of disruptions in supply chains.

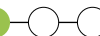
In the reporting period NLMK Group partnered up with Carbon Trust (United Kingdom), an independent sustainability consultant, to analyse risks and opportunities related to climate change. The project included an assessment of the potential impact of risks and opportunities on the company's activities. 136 individual risks and opportunities were identified, and a more detailed assessment was conducted for 82 of them (66 risks and 16 opportunities). This was followed by an in-depth

assessments of the six risks recognized as priority areas for NLMK Group. In addition, an in-depth assessment of physical risks was initiated for the Green Horizon project.

Risks and opportunities were grouped by root causes and then classified by TCFD categories. The table below indicates the main risks and opportunities identified by the analysis, their drivers aligned with TCFD categories that are relevant for NLMK, and an assessment of potential financial consequences.



TCFD category	Reasons (drivers) of the risk/ opportunity	Potential financial consequences	Description	
Low-carbon economy transition risks	Risks			
	Political and legal risks	<ul style="list-style-type: none">Payment for carbon emissionsOther paymentsProduct quotasSubsidiesProduct and manufacturing standardsPhase-out of products or raw materialsPotential court trialsRequirements to reports of investors, staff, suppliers, and buyers	<ul style="list-style-type: none">Increase in operating expensesWrite-off and devaluation of assets, as well as premature decommissioning of existing assets due to policy changesIncreased costs and/or lower demand for products due to fines and court decisionsLower demand for products	Various climate scenarios imply different uses of regulatory mechanisms, such as CBAM, apparent and hidden taxes on CO ₂ emissions, and restrictions on greenhouse gas quota trading. The potential increase in the number of court cases due to the development of requirements to CO ₂ emission reduction might affect NLMK's activities
	Process risks	<ul style="list-style-type: none">Commercialization of low-carbon productsCommercialization of low-carbon production technologiesCircular economy	<ul style="list-style-type: none">Costs of research and development (R&D) in new and alternative technologiesCapital investment in technology development	Development of green steel production technologies may lead to the devaluation of capital investment in upgrades of the BF-BOF production route
	Market risks	<ul style="list-style-type: none">Commercial market trendsEnergy carrier pricesChanges in consumer demandChanges in demand at existing markets	<ul style="list-style-type: none">Lower demand for productsHigher operational costs, lower product profitabilityAbrupt and unexpected changes in electricity costsChanges in profit structure	The global shift away from coal, and the increase in costs of natural gas and oil may lead to an increase in operational costs, while initiatives to increase the efficiency of resource utilization and transition to alternative materials or less carbon-intensive products might decrease steel demand in various industries
	Reputation risks	<ul style="list-style-type: none">Expectations of investors, personnel, suppliers, and buyers	<ul style="list-style-type: none">Lower capital availability or increase in the cost of capitalLower profits due to decreased demand or as a result of negative impact on management and availability of labour resources (for example, difficulties with hiring and employee retention)	Reputation is an important factor of business success, both in terms of talent attraction and retention and in terms of compliance with broader requirements to information disclosure and responsible business practices from investors, suppliers, and clients
Physical risks	Extreme risks	<ul style="list-style-type: none">Extreme weather events	<ul style="list-style-type: none">Lower profits as a result of production capacity decrease (e.g., difficulties with logistics, disruptions in supply chains)Increase in operational costsIncrease in capital expenditures (e.g., to recover assets)	It is believed that the frequency and scale of extreme weather events, such as floods, hurricanes, forest fires, droughts, and heat waves will increase in scenarios that imply temperature growth
	Chronic risks	<ul style="list-style-type: none">Temperature changesWater availabilitySea level rise	<ul style="list-style-type: none">Increased insurance premiums and potentially lower availability of asset insurance in "high-risk" zones	One of the most evident consequences of climate change is the increase in average temperatures. Additionally, if certain climate scenarios materialize, the risks of changes in the nature of precipitation and lower water availability will emerge. Likewise, increased atmospheric temperatures might lead to global sea level rise and flooding of coastal territories



TCFD category	Reasons (drivers) of the risk/opportunity	Potential financial consequences	Description
Opportunities			
Energy sources	<ul style="list-style-type: none"> Subsidies/support measures for low carbon energy production Energy carrier prices 	<ul style="list-style-type: none"> Decrease in the Group's greenhouse gas emissions and, consequently, less sensitivity to changes in payment for CO₂ emissions Additional profits in case of captive low-carbon electricity generation 	The possibility of using various energy sources depends on whether the cost of wind and sun energy will decrease and if support for projects of captive low-carbon electricity generation will be available
Products and services	<ul style="list-style-type: none"> Changes in demand at existing markets 	<ul style="list-style-type: none"> Increased profits due to more demand for "greener" products 	The transition to a low-carbon economy may lead to changes in demand at markets of renewable energy, transport, electricity, and construction
Markets	<ul style="list-style-type: none"> Carbon markets Emergence of new markets of goods and services Commercialization of manufacturing technologies for low-carbon products Subsidies and other support measures 	<ul style="list-style-type: none"> Increased profits due to entering new markets of goods and services Due to demand for "green" products (increase in sales of current products that decrease carbon footprint on the customers' side and development of new products) 	Opportunities related to the production of "green" steel, such as loan financing of "green" projects, monetization of gains from measures to reduce CO ₂ emissions or utilization
Sustainability	<ul style="list-style-type: none"> Payment for carbon emissions Water availability Temperature changes 	<ul style="list-style-type: none"> The Group companies' more convenient location and lower carbon intensity of products vs. competitors will ensure more profitability. 	In case different climate scenarios materialize, the Company may benefit because of higher availability of water vs. its competitors. CBAM can potentially lead to an increase in product profitability due to lower carbon footprint vs. competitors

Risk management

Climate risk management is an integral part of NLMK Group's overarching risk management system (see the [Operational Control and Risk Management section for more details](#)). Climate risks are identified and assessed by qualitative and quantitative methods, including a scenario analysis and modelling of risk materiality, probability, and velocity. Aggregate information about the climate risk profile and related changes is disclosed in the NLMK Group Risk Radar.

For every external driver, the time horizon of potential materialization was assessed. Three time horizons were identified: short-term (up to 2025),

mid-term (2025–2030) and long-term (after 2030). It is expected that transition risks will be relevant at all time horizons, and most risks will materialize in the long term, since process transitions in steelmaking will become more prominent by the late 2020s. In addition, chronic and acute physical risks will materialize in the long term. The same can be said for the most significant opportunities materializing in the future, since by that time a more significant increase in low-carbon steel production will occur.

The criterion of risk probability or possibility is related to the considered scenarios (see their description below).

The more similarity in the assessments of risk parameters for various scenarios, the higher the probability of risk materialization. Probability varies from low to very high.

According to the company, preliminary assessments indicate that the Group is highly resistant to climate change. The Climate Programme significantly decreases the company's climate-related transition risks in the mid- and long-term perspective.

Scenario analysis overview

In order to conduct a scenario analysis of climate-related risks and opportunities, data were collected from various sources, including the International Energy Agency (IEA), the International Institute for Applied Systems Analysis (IIASA), Shared Socioeconomic Pathways (SSP), the Global Economic Forum, the World Resources Institute (WRI),

and the Climate Impact Atlas of the Royal Netherlands Meteorological Institute (jointly with the CMIP5 project). These sources consider various climate scenarios which, for the purpose of in-depth analysis, were divided into two groups: Business-as-usual and the Paris Agreement scenario

(limiting global warming to well below 2°C). For physical risks, the worst-case scenario was also analysed.



SCENARIO ANALYSIS

PARIS AGREEMENT SCENARIO

IPCC climate scenario

Representative Concentration Pathway
Average global temperature increase by 2050¹

RCP 2.6 **1.6 ± 0.3 °C**

Social and economic development scenario

Shared Socioeconomic Pathway
Average global temperature increase by 2100¹

SSP 1: Sustainability **1.6 ± 0.4 °C**

25,000

(–50% vs. 2015)

Global GHG emissions in 2050, m t of CO₂ equivalent

DESCRIPTION

The scenario implies quick decarbonization in line with the Paris Agreement, which implies limiting global warming to well below 2 °C vs. the pre-industrial age, with a probability of 66%. It is believed that this scenario will ensure the transition to a low-carbon economy with zero emissions in the second half of the 20th century. Like with most low-carbon economy transition scenarios, this option requires significant emission cuts by 2100 in order to limit global warming to 2 °C.

BUSINESS-AS-USUAL SCENARIO

IPCC climate scenario

Representative Concentration Pathway
Average global temperature increase by 2050¹

RCP 4.5 **2.0 ± 0.3 °C**

Social and economic development scenario

Shared Socioeconomic Pathway
Average global temperature increase by 2100¹

SSP 2: Middle of the road **2.4 ± 0.5 °C**

56,000

(+13% vs. 2015)

Global GHG emissions in 2050, m t of CO₂ equivalent

DESCRIPTION

An interim scenario, which implies more probability of temperatures exceeding 2 °C, leading to significant consequences for global climate systems. In this scenario, the current climate and energy policies get reconsidered, including obligations assumed as part of national plans to reduce emissions and adapt to climate change (Nationally Determined Contributions, NDCs). This scenario implies significant decarbonization in the second half of the 20th century.

WORST-CASE SCENARIO

IPCC climate scenario

Representative Concentration Pathway
Average global temperature increase by 2050¹

RCP 8.5 **2.6 ± 0.4 °C**

Social and economic development scenario

Shared Socioeconomic Pathway
Average global temperature increase by 2100¹

SSP 5: Fossil-fuelled development **4.3 ± 0.7 °C**

103,000

(+109% vs. 2015)

Global GHG emissions in 2050, m t of CO₂ equivalent

DESCRIPTION

In this scenario, the existing climate and energy policy will not succeed. This option will lead to a significant increase in global greenhouse gas emissions. Physical risks are expected to grow significantly in this scenario.

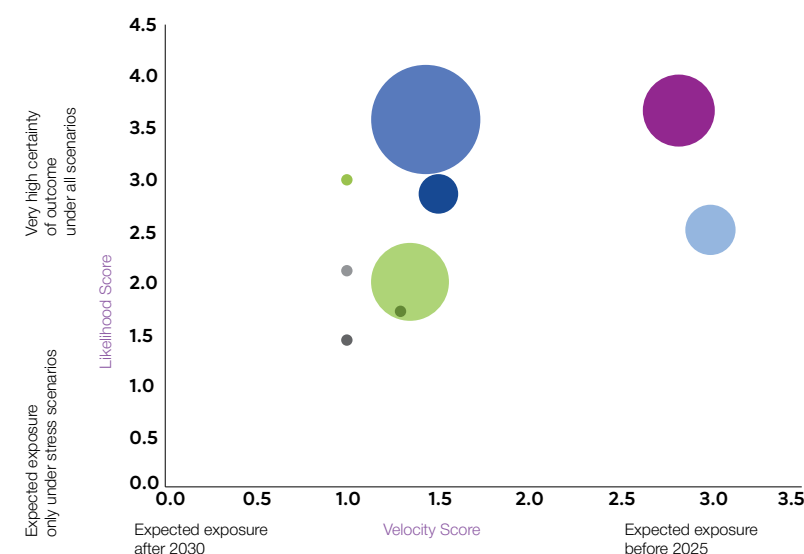
For the first two scenarios, an in-depth analysis was made for the following transition risks on the 2022–2030 horizon:

- Introduction of a carbon tariff on product exports into the EU
- Introduction of a carbon tariff on product exports into the USA
- Introduction of a tax on greenhouse gas emissions in Russia
- Global decrease in steel demand
- Increased EAF competitiveness vs. the BF-BOF route
- Stricter “green” legislation in the EU

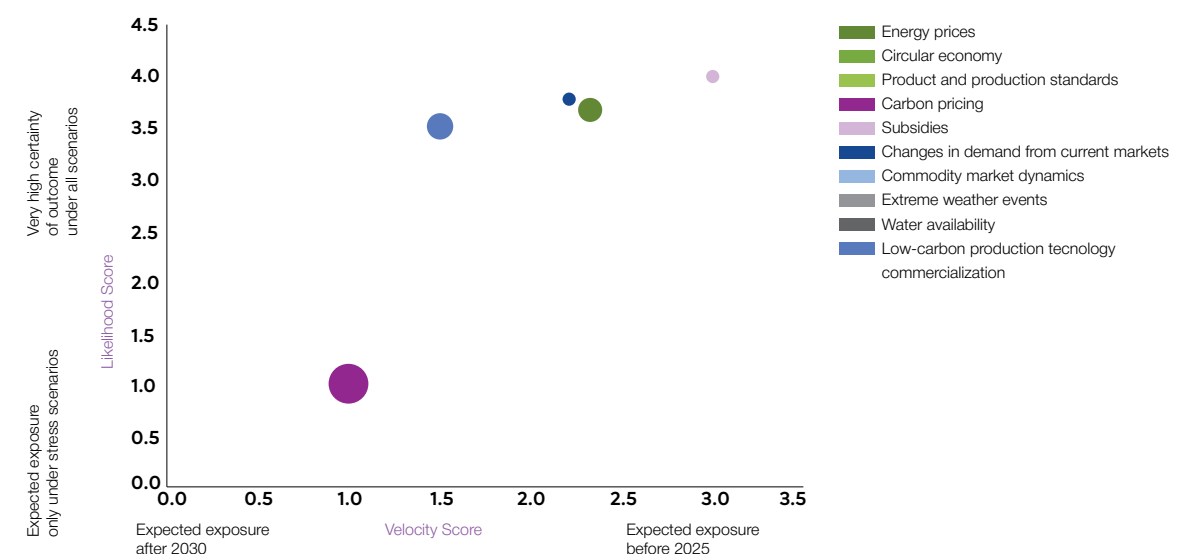
As a result of the analysis, the following materiality matrix of climate risks and opportunities was formed.

¹ Temperature anomalies vs. the pre-industrial period of the 1850–1900s.

Risk prioritization by parent root cause



Opportunity prioritization by root causes with materiality evaluation



Energy efficiency



Major themes

- Energy

Key events in 2021

- The Lipetsk site's captive generating facilities, which are fueled by secondary fuel gases, reached an all-time high in electricity generation (508.5 MW per day).
- The overhaul of BF-4 was completed with the construction of a new gas cleaning facility, which will increase the reliability of blast-furnace gas supply.
- Reconstruction of BF-4 air heaters started. The goal is to improve fuel efficiency in hot iron production and reduce carbon monoxide emissions from air heaters by 98%. The upgrade will be carried out gradually in 2022–2024 without the blast furnace shut downs.
- A set of measures to increase the production of liquid oxygen were implemented. In October 2021, the Lipetsk site achieved a record high production of liquid oxygen at 4,900 tonnes per month, of which 3,650 tonnes is liquid medical oxygen for healthcare facilities in nearby regions.
- The construction of production buildings' metal structures and the installation of the main process equipment of the new recovery power plant began.

United Nations Global Compact principles

Principle 7. Businesses should support a precautionary approach to environmental challenges.

Principle 8. Businesses should undertake initiatives to promote greater environmental responsibility.

Principle 9. Businesses should encourage the development and diffusion of environmentally friendly technologies.

Global Sustainable Development Goals



Awards

A team of employees of NLMK's energy services came second at the CASE-IN International Engineering Championship (League of Young Professionals, REN Cup), which was held as part of the #TogetherBrighter Youth Day of the Russian Energy Week.

NLMK employees, as part of the Best Steel team, won the national final of the Metal Cup. Sustainable Development case championship on technology strategy.

Key 2021 figures

403.6
PJ (+1.8% yoy)

NLMK Group's total energy consumption in 2021

-0.144
Gcal/t (-2.6% yoy)

reduction in specific energy intensity of steel production at NLMK Lipetsk

Our approach to managing energy efficiency

Steelmaking is an energy-intensive industry. NLMK Group systematically pursues energy efficiency improvements in its operations. This includes identifying and applying integrated solutions to ensure a reliable supply of energy resources, as well as using energy sparingly in order to reduce costs and minimize the environmental impact.

The company has adopted an **Integrated Management System Policy in Quality, Environmental Protection, Energy Efficiency, and Occupational Health and Safety (IMS Policy)**. This policy sets forth the vision, goals, principles, and management commitments related to the improvement of energy efficiency.

NLMK Group's goals are to be the leader in using the best global practices to improve production energy efficiency and to achieve the lowest technically and economically feasible level of specific energy intensity and steel cash cost. The main principles of the IMS Policy are to reduce the resource intensity of production through:

- Reducing specific consumption of natural raw materials, water, and fuel and energy resources

- Improving operational efficiency
- Introducing recycling and close-loop systems and applying best available technologies (BATs)

The Group's commitments under the IMS Policy go beyond introducing advanced energy-efficient technologies and solutions that reduce the consumption of natural and secondary energy resources and energy. The Group is additionally committed to developing power generation capabilities that utilize metallurgical gases and other secondary energy resources, and to supporting the use of renewable energy sources where applicable and reasonable. The purchased equipment and services are evaluated in terms of compliance with corporate energy efficiency requirements.

The Unified Technical Policy on Energy Complex Management has been in effect at NLMK Group's Russian companies since 2014. The objective of this policy is to introduce the most advanced technical solutions, machinery, and technologies that bolster the reliability, efficiency,

and safety of the Group's energy complex. The policy sets out priorities and rules for applying technical solutions related to the utilization of energy facilities, the implementation of investment programmes for new construction, the re-tooling of core equipment, overhauls of energy assets belonging to NLMK Group companies, and the innovative and promising development of these companies. The company annually updates its portfolio of projects aimed at achieving the target indicators of energy resource use.

A key performance indicator for improving energy efficiency is the specific energy intensity of production (Gcal/t of output). The targets for these key performance indicators are determined based on earlier maximum results, taking into account the potential of optimizing the process to the best technologically achievable level, as well as the results of benchmarking similar machinery against global best practices.

Certification

The company's energy management system is in compliance with the international ISO 50001 standard, as confirmed by its ENMS 598731 certificate.

The system encompasses nine core production sites:

- NLMK Lipetsk
- VIZ-Steel
- Altai-Koks

- Dolomit
- NLMK Kaluga
- NLMK Metalware
- NLMK Ural
- Stagdok
- Stoilensky

The NLMK DanSteel site has also been certified to ISO 50001. ISO 50001 certified companies account for 95% of the Group's energy consumption.

In 2021, all management systems operating at the facility level were consolidated into the integrated management system (IMS). In 2022, it is planned to complete the project at the company level.

Membership and participation in organizations

NLMK Group is a member of the Russian Association of Energy Consumers, a non-profit partnership that aims to protect the interests of member companies in the energy sector.

The company is also a member of the NP Market Council association, which ensures the operation of the enterprise in the wholesale electricity market,

and since November 2010 – a member of the Union of Independent Energy Audit and Energy Expert Organizations non-commercial partnership.

Energy resource consumption in 2021

In 2021, total energy consumption within the company stood at 403.6 PJ, which is 7.3 PJ higher year-on-year. The increase is due to the completion of the BF-4 overhaul, the ramp-up of BOF-3 in BOF Shop No. 2, and the increase in steel output.

NLMK Group uses a variety of non-renewable energy resources in its production activities: 27.2% of all

energy consumed comes from natural gas, and 58.6% comes from coal and coke products; it also uses renewable energy sources like electric energy from renewable sources, wood chips and charcoal for the production of ferroalloys.

In 2021, the share of electricity from renewable sources totalled 5.1% of all purchased electric energy, flat year-on-

year¹. The share of renewable energy in all NLMK Group energy consumption was 0.4%.

401.9 PJ

Non-renewable energy consumption

Renewable electric energy consumption across NLMK Group GRI 302-1

Indicator	2017	2018	2019	2020	2021
Share of renewable electric energy in purchased electric energy, %	4.81	4.86	5.10	5.14	5.14
Total share of renewable energy in total energy consumed, %	0.37	0.37	0.37	0.41	0.43
Total renewable energy consumed, PJ	1.50	1.51	1.43	1.62	1.72

Note: conversion coefficient from MWh to GJ = 3.6. Reverse coefficient: 1/3.6 = 0.278 (GOST R 51750-2001).

The share of renewable energy is shown in the total volume of electricity consumption without transit flows. NLMK Group sites made no direct purchases from renewable energy suppliers.

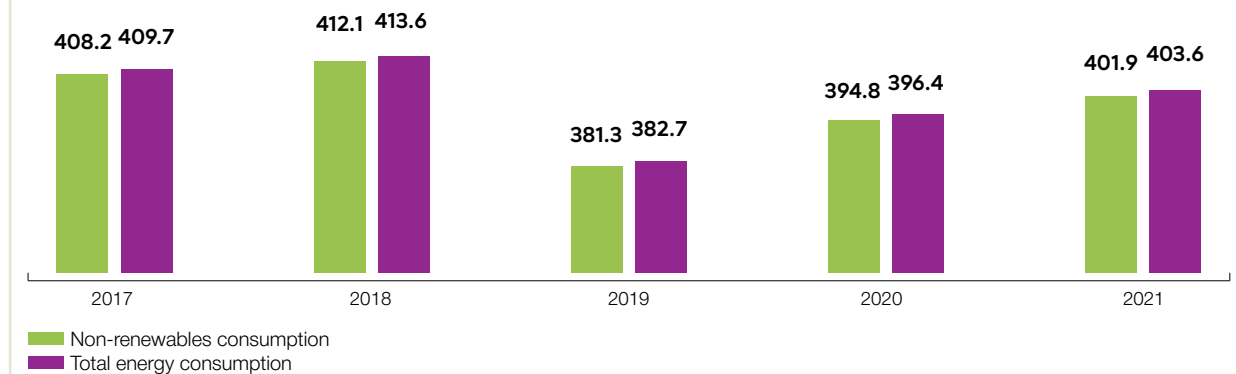
In 2021, the volume of electricity supplied from NPPs under direct contracts between NLMK Group and Rosenergoatom amounted to close to 3 billion kWh (10.8 PJ).

Share of renewable electric energy in total purchased electricity by region, without transit flows, %

Region	Share of renewable energy	Source energy	Companies
Russia, Central Unified Energy System zone (Central and Northwestern Federal Districts)	1.5	Hydro	NLMK Lipetsk Stoilensky Stagdok Dolomit NLMK Kaluga
Russia, Ural Unified Energy System zone (Ural and Volga Federal Districts)	2.0	Hydro, wind, solar	NLMK Ural NLMK Metalware VIZ-Steel
USA	19.5	Hydro, wind, solar, biofuel	NLMK Indiana NLMK Pennsylvania Sharon Coating
Belgium	25.0	Wind, solar, biofuel	NLMK La Louvière NLMK Clabecq
France	21.4	Hydro, wind, solar, biofuel	NLMK Strasbourg
Italy	40.8	Hydro, wind, solar, biofuel	NLMK Verona
Denmark	87.1	Wind, solar, biofuel	NLMK DanSteel

¹ The share of generation from renewables is shown as assumed for Russia as of the end of 2021 according to the annual report on the functioning of the UES of Russia in 2021, for Europe – according to The European Power Sector in 2020 report, p. 8, and for the US – according to the Monthly Energy Review US report by the Energy Information Administration, p.129.

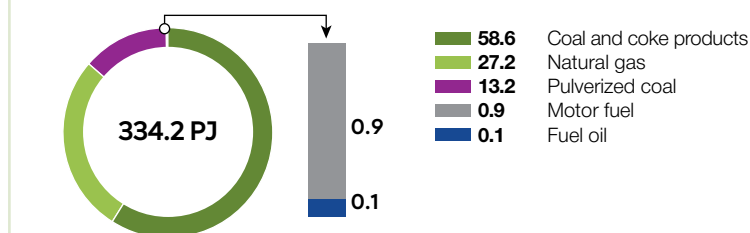
Total energy consumption by NLMK Group¹, PJ GRI 302-1



NLMK Group consumption of non-renewable fuels², PJ GRI 302-1

Fuel type	2017	2018	2019	2020	2021
Coal and coke products	217.22	208.64	185.24	197.64	195.7
Natural gas	91.65	87.75	91.26	85.86	91.01
Pulverized coal	28.40	43.30	36.15	43.36	44.13
Motor fuel (petrol, diesel, liquefied gas)	2.76	2.79	2.91	2.90	3.10
Fuel oil	0.04	0.04	0.21	0.29	0.25
Total	340.07	342.53	315.77	330.05	334.19

Breakdown of non-renewable fuel consumption by NLMK Group in 2021², % GRI 302-1



¹ The methodology for calculating the company's energy consumption: purchased energy minus sold energy (sales, shipment, transfer) at every production site; total across all sites. The calculation of the company's energy consumption in 2017–2019 has been brought to a unified methodological basis in terms of the use of coke breeze, the purchase, generation and distribution of electrical and thermal energy between companies. Since 2021, oxygen and nitrogen have been included in the company's energy balance in connection with the conclusion of outsourcing agreements for a part of the volume consumed. Methodology for calculating non-renewable types of energy: total energy consumption minus renewable energy.

² Starting from 2020, the consumption of coke products and motor fuels has been supplemented with the consumption of NLMK Ural and mining companies. Consumption of non-renewable fuels is shown minus the volume of shipment/sale of fuel in the form of products.

Consumption, generation, and sale of electrical and thermal energy by NLMK Group, PJ, GRI 302-1

Indicator	2017	2018	2019	2020	2021
Electrical energy and thermal energy obtained for consumption					
Electrical energy obtained	87.32	87.30	78.47	77.72	83.45
Thermal energy obtained as steam	0.51	0.50	0.48	0.48	0.51
Thermal energy obtained as hot water	1.52	1.59	1.33	1.03	1.09
Total	89.35	89.39	80.29	79.24	85.05
Captive electrical and thermal energy generation					
Electrical energy generation	46.34	49.36	50.01	49.93	51.34
Thermal energy as steam	23.78	21.90	21.75	22.26	22.00
Thermal energy as hot water	7.93	9.78	7.41	7.68	7.95
Total	78.04	81.03	79.17	79.87	81.29
Electricity and thermal energy sold to external consumers					
Electricity sold and transmitted	11.78	10.70	8.99	8.63	9.26
Heat energy sold and transmitted as steam	0.36	0.35	0.37	0.40	0.44
Heat energy sold and transmitted as hot water	2.56	2.76	2.35	1.92	1.96
Total	14.7	13.81	11.71	10.94	11.7

Note: conversion coefficient from MWh to GJ = 10.0945, calculated on the basis of conversion coefficient from MWh to a tonne of conventional fuel = 0.3445 (Rosstat), conversion coefficient from a tonne of conventional fuel to Gcal = 7, conversion coefficient from Gcal to GJ = 4.186.

Specific energy intensity¹ at NLMK Lipetsk, Gcal/t GRI 302-3

Indicator	2017	2018	2019	2020	2021
Specific energy intensity	5.491	5.469	5.641	5.546	5.402

Note: 1 Gcal = 4.186 GJ

Captive electricity generation

The company has managed to reduce energy costs by implementing investment projects and optimization initiatives aimed at increasing captive generation of electricity and thermal energy.

Electricity is generated at the company's captive power plants, which are chiefly powered by recycled fuel gases from steel production. Approximately 80%

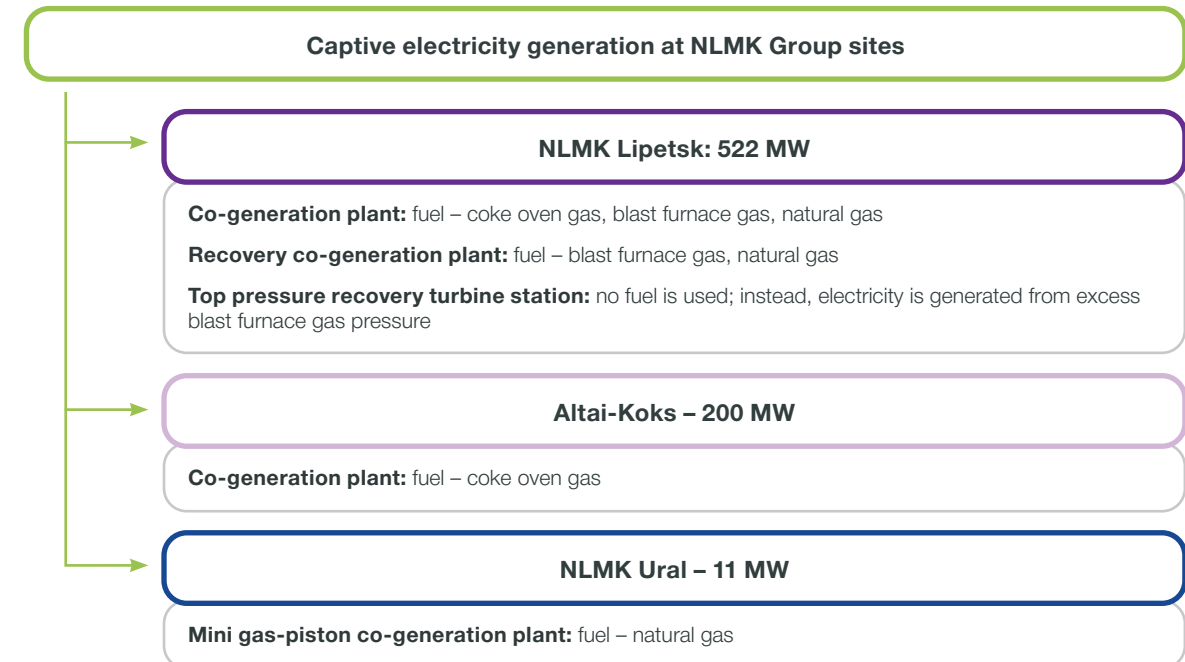
of the electricity generated at the Lipetsk site (and used for its production needs only) and 100% of the electricity generated at Altai-Koks is produced using NLMK Group's captive recyclable resources (steelmaking gases).

Maximizing the utilization of available recyclable energy is one of the main challenges faced by NLMK Group. Overcoming this challenge will make

it possible to not only minimize costs, but to also reduce our environmental impact by slashing emissions of harmful substances and greenhouse gases.

In the reporting period, the total installed in-house generation capacity was 733 MW: 522 MW at the Lipetsk site and 200 MW at Altai-Koks; the installed capacity of gas-piston units at NLMK Ural was 11 MW.

Captive electricity generation at NLMK Group sites



CONSTRUCTION WORKS ARE ONGOING AT A NEW RECOVERY CO-GENERATION PLANT (RCGP-2) UTILIZING SECONDARY ENERGY RESOURCES, WHICH WILL BRING NLMK LIPETSK'S SELF-SUFFICIENCY IN ELECTRICITY TO 94%

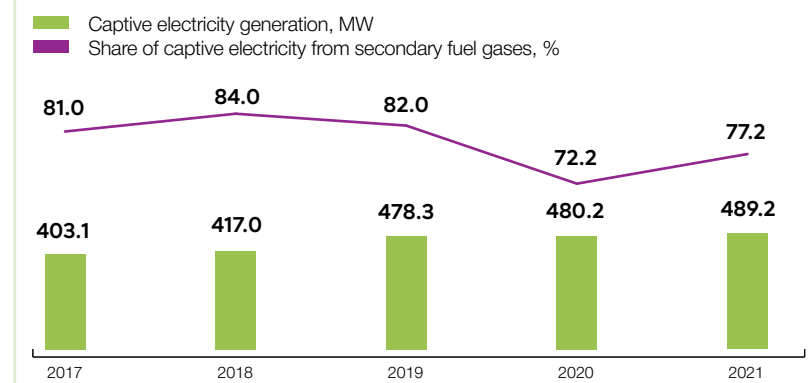
In 2019, NLMK Group launched a project to construct a new recovery co-generation plant at NLMK Lipetsk. The new plant will be utilizing recyclable gases (BOF and BF) from steel production. The installed capacity of the new recovery co-generation plant will be 300 MW. The total investment in the project is estimated at RUB 35 billion.

In 2023, the launch of this new power plant running on by-product gases of blast furnace and steelmaking operations will cut CO₂ emissions by 650,000 t (36 kg per tonne of steel) annually.

Share of captive electricity in total electricity consumption at NLMK Lipetsk¹, %



Captive electricity generated at NLMK Lipetsk²



In 2021, NLMK Lipetsk generating capacities reached an all-time high level of average daily electricity generation: (CGP – 346.7 MW, RCGP – 161.8 MW, total – 508.5 MW).

¹ The share of captive electricity generation in 2021 is lower than in 2020 due to an increase in total electricity consumption (ramp-up of BOF-3 in BOF Shop No. 2 at the Lipetsk site).

² The share of captive electricity generation utilizing secondary fuel gases increased in 2021 due to an increase in the volume of blast-furnace gas utilization after the completion of the overhauls of BF-6 and BF-7 in 2019 and BF-4 in 2020.

Implementing energy efficiency projects

During the reporting period, NLMK Group implemented a number of energy efficiency projects at its sites to address the following items:

- Increasing the efficiency of fuel gas utilization in electricity generation
- Improving the efficiency of compressor, pumping, and cooling equipment

- Optimizing process charts for the production of energy resources
- Optimizing the load and configuration of energy transportation networks, optimizing the operation modes of energy equipment

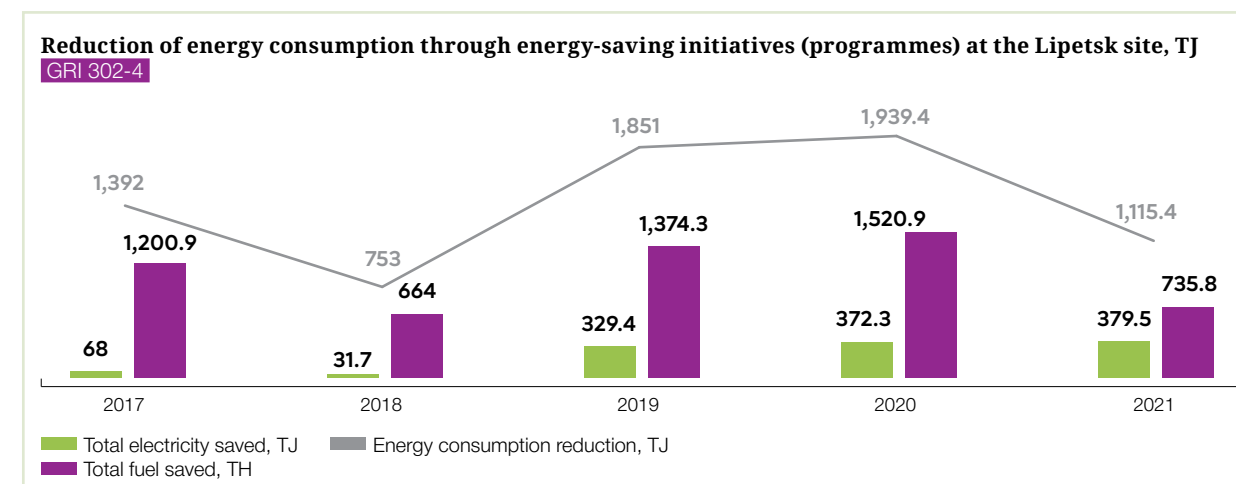
As part of the target-oriented programmes, lighting fixtures at NLMK Group sites were replaced with more advanced and efficient solutions; pumping equipment upgrades are also underway.

Optimization initiatives undertaken by NLMK Group in 2021

In 2021, energy-efficient optimization projects at the generating capacities of the CGP and RCGP at the Lipetsk site and CGP at Altai-Koks were aimed

at changing the operating modes and control algorithms for boilers and turbines, using new combustion air preheating technology, increasing

the area of economizers, and using systems for improved heat transfer and cleaning at turbine generator capacitors.



NLMK IMPLEMENTED THE FIRST WIRELESS AUTOMATED ENERGY ACCOUNTING SYSTEM

NLMK's sinter shop launched an automated energy accounting system based on wireless data transmission technology. Every 30 minutes, 214 readers send information about the consumption of electricity and water to the plant's unified management system. Data analysis prevents emergencies and optimizes energy costs.

This technology is based on LoRaWAN (Long Range Wide Area Network) wireless data transmission, an alternative to the classical method of transmitting information over wires with lower implementation and maintenance costs. The solution enables wide coverage (up to 1.5 km) with high noise immunity, while lowering power consumption (up to 10 years without changing the battery).

Rostelecom and NLMK IT employees ensured the integration of the companies' systems running on different platforms, established an integration service for the simultaneous exchange of meter readings, debugged and tested the solution.

Motor fuel consumption

NLMK Group has determined technically feasible levels of specific fuel consumption for all categories of transport (motor fuel is covered by the company's energy management system). The Logistics Development Strategy until 2022 sets fuel consumption targets, which the company strives to achieve.

In 2021, activities to reduce motor fuel consumption were aimed at:

- Equipping diesel locomotives with an electronic fuel injection system. This measure makes fuel consumption 10–16% more efficient, depending on the type of locomotive. In 2022 it is planned to expand this system to NLMK's entire fleet of locomotives, which will reduce diesel fuel consumption by 2,445,000 litres
- Revising and selecting optimal routes for motor transport, cutting empty runs and downtime (thus saving close to 500,000 litres of diesel fuel)
- Switching to alternative fuel (diesel fuel consumption reduced by almost 30,000 litres)

Efforts to reduce diesel fuel consumption will continue in 2022. In preparation for the new strategic cycle, the company will focus on the use of vehicles using alternative energy sources, which will reduce or eliminate harmful emissions into the environment.

STOILENSKY TO START USING HYBRID MINING DUMP TRUCKS BY 2025

By 2025, Stoilensky will be the first in Russia to start using trolley trucks – giant mining dump trucks with a hybrid engine.

In the normal driving mode, the internal combustion engine will generate electricity for the operation of the motor-wheels, and while driving along the main road in the mine, over which the trolley line will be stretched, the dump truck will receive energy from the high-voltage line.

The average speed of the dump truck will increase by 40%. Today, loaded dump trucks in the mine are moving uphill at a speed of 16–18 km/h, trolley trucks under the same conditions will run at 25 km/h. This means that diesel fuel will be saved, and as a result, emissions of nitrogen oxides will decrease.

Plans for 2021 and the medium term

Improving the energy efficiency of production is a key goal of Strategy 2022. The main lines of action to boost energy efficiency in 2021 and the medium term include:

- Reducing specific energy consumption at production units; in the medium term – reaching the minimum technically feasible level of consumption
- Improving the efficiency of power-generating equipment
- Optimizing process charts for the production of energy resources
- Improving the efficiency of compressor equipment
- Replacing pumping equipment with more energy-efficient units
- Lighting system upgrades
- Reducing the amount of purchased thermal energy
- Developing and introducing innovative digital energy solutions
- Increasing the cost-efficiency of energy facilities by outsourcing processes
- Implementing investment projects for infrastructure development, technical upgrades/construction of facilities with improved energy efficiency performance

The company is working on a portfolio of technological development projects in the energy sector. The focus areas in 2022 will be the development of renewable energy generation projects (including at sites in Europe), the assessment of opportunities for the application of industrial energy storage technologies and the analysis of alternative hydrogen production technologies.

Environmental protection



Major themes

- Atmospheric emissions
- Water
- Waste
- Biodiversity
- Supplier environmental assessment
- Environmental compliance

Key events in 2021

- Two large-scale overhauls of NLMK's dedusting systems completed. The project will reduce dust emissions by more than 300 tonnes per year
- The HSM effluent tank was upgraded at NLMK Lipetsk eliminating 400 m² dam and land contamination with petroleum products
- A large-scale environmental upgrade of the beneficiation plant air purification system started at Stoilensky
- NLMK Kaluga eliminated industrial runoff in 2021 with a closed-loop water system
- A number of projects on secondary raw materials recycling were implemented
- At Stoilensky, the first stage of irrigation system construction started at the tailings dam, thus eliminating dusting
- At Stoilensky, the elaboration of environmental solutions for the Green Horizon project started. The project aims to expand existing and set up new production facilities. The solutions include among other initiatives to reduce nitrogen oxides and sulfur dioxide emissions and create a closed water-loop system

United Nations Global Compact principles

Principle 7. Businesses should support a precautionary approach to environmental challenges.

Principle 8. Businesses should undertake initiatives to promote greater environmental responsibility.

Principle 9. Businesses should encourage the development and diffusion of environmentally friendly technologies.

Global Sustainable Development Goals



Key 2021 figures

Pollutants discharge into water bodies reduced

by **33%**

compared to 2018 baseline

97%

of water in production is recycled and reused

100%

of secondary iron waste recycled

Over **\$2 bn**

allocated to investment projects with an environmental impact since 2000

\$339 m

allocated to operational and investment projects with an environmental impact in 2021

Awards

Worldsteel has recognized NLMK Group as Sustainability Champion.

NLMK Group ranked second in the Environmental Transparency Rating of Mining and Metals Companies according to the World Wildlife Fund (WWF) Russia and National Rating Agency.

NLMK Group received the ComNews Awards 2021 for the best digital ESG solution.

NLMK Group was awarded the gold medal of the 27th international industrial exhibition Metal-Expo 2021 for its upgrade of NLMK's steelmaking production, which allowed to increase the productivity of one of the BOF shops by 15% while reducing the environmental impact (reducing dust and CO emissions by 2,000 tonnes).

NLMK won the Leaders of Russian Business competition, held by the Russian Union of Industrialists and Entrepreneurs, in the Environmental Responsibility category.

NLMK won the III national competition **Reliable Partner – Environment** with The best project in the field of environmental digitalization.

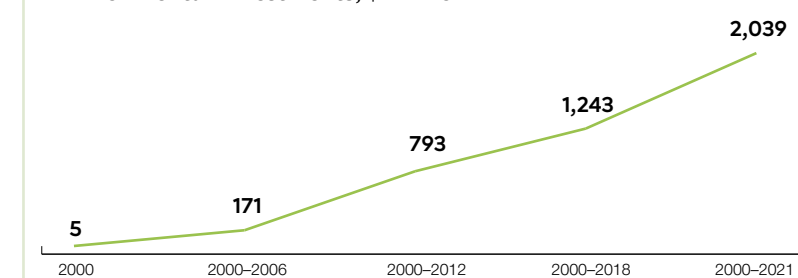
The results of two-decade efforts to reduce environmental impact

The company consistently reduces its environmental impact by efficiently using natural resources, introducing innovative technologies to improve environmental performance, and annually investing heavily in environmental projects.

Since 2000, the company has invested more than \$2 billion in environmental projects, or about 30% of all investments in maintaining production facilities.

Thanks to large-scale environmental investments, since 2000, all the main process stages that have a major impact on the environment have been upgraded: coke oven batteries, blast furnaces, BOFs, over 200 dedusting systems have been upgraded or built

Environmental investments, \$ million



(half of all the systems in operation today) in the sintering, blast furnace, BOF and refractory shops. The company also switched to anhydrous slag cooling technology and stopped flaring of exhaust gases – now they

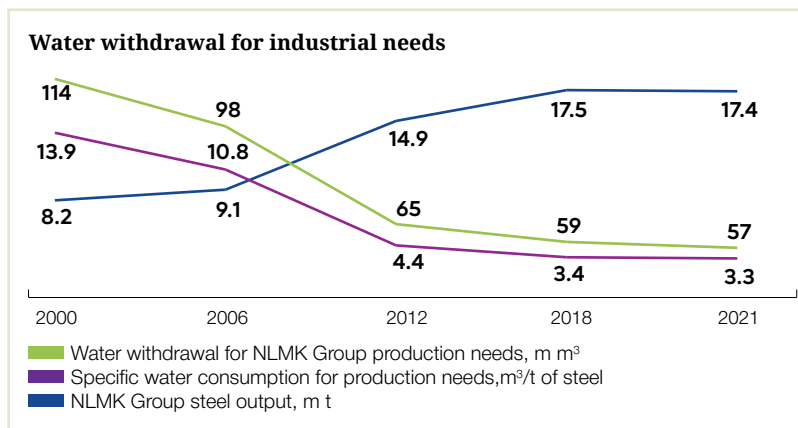
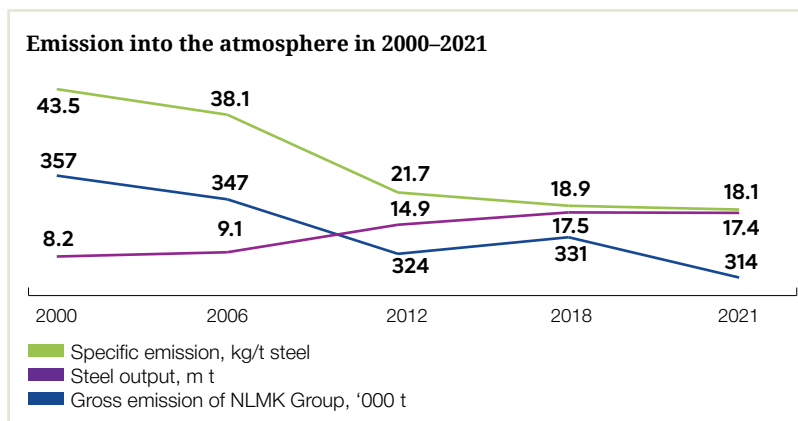
are used for efficient power generation. With the completion of the project for the construction of a second recovery co-generation plant in 2023, the Lipetsk site will achieve 100% utilization of off-gases from the core steelmaking units.

Specific emissions into the atmosphere per tonne of steel have decreased by 2.4 times since 2000. Despite the expansion of the Group and more than a two-fold increase in steel output, the Group's gross emissions decreased by 12%.

In terms of water impacts, a project to build a closed-loop water supply system at the Lipetsk site was implemented, which enabled complete elimination of industrial and storm effluents into the river and return this water for reuse in the production cycle. As a result, water withdrawal from the Voronezh River reduced by 5 times. Thanks to the construction of closed-loop water supply systems at all the Group facilities, since 2000, specific water consumption per tonne of steel has decreased by 4.5 times, and specific wastewater discharge – by almost 3 times, while steel output has doubled.

In its activities, the company strives to adhere to circular production and re-use not only off gases and water, but also solid secondary resources. Since 2015, the Group is implementing its Raw Materials Recycling Programme, which includes several dozen projects aimed at increasing the internal processing of recyclable materials and their re-use in production.

In 2019, the processing of a 25 ha slag dump that existed since 1934 was completed, on which 6 million tonnes of materials were accumulated during the Soviet period. All these materials were used either as raw materials for the production of iron and steel, or as process raw materials for construction in the Lipetsk Region. As much as 350,000 tonnes of iron were extracted, which not only reduced the consumption of fossil fuels, but also reduced greenhouse gas emissions by 100,000 tonnes.



NLMK achieved 100% utilization of secondary iron-containing raw materials. To this end, in 2019, a unique facility was launched – the Briquetting Plant for the processing of generated and previously accumulated dust and sludge (dust and other fine solid particles mixed with water). Recycled briquettes are re-used in blast furnaces as material for the production of iron and steel. This innovative facility, in which RUB 4.5 billion was invested, allows saving up to 500,000 tonnes of fossil iron ore annually. In addition, all the dust collected in the de-dusting units was returned into production.

In general, over the last 20 years the recycling rate of the main production site in Lipetsk reached all-time highs.

↑ **100%**
Recycling of secondary iron-containing raw materials

↑ **99%**
Recycling of secondary raw materials

Environmental management priorities

Our approach to managing environmental protection

A responsible attitude towards the environment and the efficient use of natural resources – are key principles of **Sustainable Development Policy of NLMK Group**. The Group objectively assesses environmental risks and is committed to minimizing them. It allocates significant resources to various environmental programmes and the implementation of innovative technologies. Environmental protection is a top priority of NLMK Group's activities – both on the part of the Board of Directors and the CEO (Chairman of the Management Board) of the company.

NLMK takes a comprehensive approach to environmental management by focusing on improving energy efficiency, reducing air emissions by upgrading equipment, reusing and processing waste, conserving water resources, and rehabilitating contaminated land.

The fundamental document in the field of environmental protection is the **Integrated Management System (IMS) Policy of NLMK Group**. The policy reflects the company's responsible and rational approach to environmental protection management.

Organizational structure

GRI 102-19 | GRI 102-20

NLMK recognizes the importance of effective environmental management. NLMK's management team is actively involved in the environmental management process. The Group's CEO and Board of Directors review environmental performance on an annual basis. **GRI 102-31** The Strategic

Planning Committee under the Board of Directors studies risks related to sustainable development, including those related to environment, atmospheric air, water resources, soil, biodiversity, and climate change (including greenhouse gas emissions), and approves the Environmental Programme and investments in environmental protection projects.

The Management Board reviews key components of the Environmental Programme, approves its key performance indicators, and signs off on its execution at all the Group divisions. The Management Board's Investment Committee is directly involved in reviewing NLMK's Environmental Programme. The Investment Committee devotes special attention to the results of the annual environmental assessment, approves the investment budget for projects aimed at reducing environmental impacts, and oversees the investment budget for the Environmental Programme and its execution.

NLMK Group Vice President for Energy and Environment is responsible for ensuring the efficiency of environmental and energy management, overseeing the execution of the approved portfolio of projects, achieving environmental targets, and resolving key issues in the field of environmental protection.

The Environmental Department coordinates environmental management, including managing environmental risks and implementing advanced eco-friendly technologies, and organizes activities, which aim to reduce the company's impact on climate.

Each of the Group's companies has an environmental protection service, which is responsible for, among other things, daily monitoring of compliance

with environmental requirements, supporting production units, assessing environmental risks, supporting the implementation of environmental projects, and implementing systems that assess the maturity of environmental indicators and improve environmental management.

Laboratories of production and environmental control, which are part of NLMK Group's Environment function, monitor and measure the amount and/or composition of the emission, state of the air at the border of sanitary protection zones, the water quality in surface water, groundwater, industrial and household wastewater, drinking water quality, soil condition at the NLMK Group production sites and sanitary protection zones, providing reliable data for the environment analysis, performed by the environmental protection services.

Investment in environmental protection

Each year NLMK Group commits significant resources to ensuring the accident-free operation of equipment and the implementation of investment projects that have an environmental impact. Spending on environmental management over the last five years increased by 77% totalling \$339 million in 2021.

In 2021, the funding of the Group's environmental investment projects remained flat year-on-year. Due to these capital investments, the Lipetsk site completed large-scale reconstructions of the de-dusting system in the BF-3 caphouse and de-dusting system for capturing fugitive emissions at one of the two mixers in BOF Shop No. 1

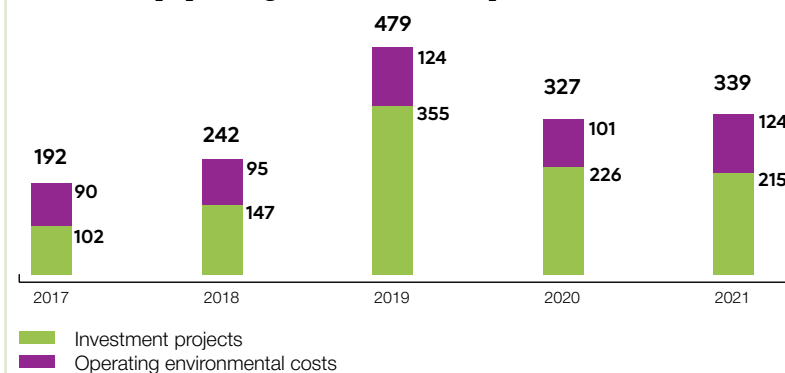
with the total dust emissions reduction of more than 300 tonnes. The company has started installation of the main process equipment for the new recovery co-generation power plant, utilizing BOF gas. Total investment in environmental projects since 2000 has exceeded \$2 billion. NLMK Group's specific air emissions reached its all-time low at 18.1 kg/t of steel.

Targets and key performance indicators

NLMK recognizes the importance of efficient environmental management. As part of its current Environmental Programme the following targets has been established:

- Minimizing the impact that the Group's Russian and international companies have on the environment, and complying with all applicable

NLMK Group spending on environmental protection¹, \$ m GRI 103-2



environmental standards and environmental risk management commitments

- Increasing recycling rates
- Reducing specific air emissions
- Reducing the impact on water resources

NLMK Group's strategic environmental goals until 2023

Target	KPI	Units	2018 (base year)	2020	2021	2023 target
Compliance of environmental indicators of NLMK Group with best practices	Specific emissions	kg/ t of steel	18.9	18.6 ² (19.8)	18.1	18.0
	Waste recycling share	%	89	95	95	92
Reducing specific air emissions	CO (NLMK Lipetsk)	kg/ t of steel	16.3	16.0 ² (16.8)	15.7	14.8
	NO _x (NLMK Lipetsk)	kg/ t of steel	1.2	1.2 ² (1.3)	1.2	1.1
	SO _x (NLMK Lipetsk)	kg/ t of steel	1.7	1.7 ² (1.7)	1.5	1.6
	Dust	kg/ t of steel	1.4	1.2 ² (1.4)	1.2	1.2
	1st Class substances (Russian companies)	g/ t of steel	0.08	0.07 ² (0.08)	0.07	0.07
Reducing the impact on water resources	Specific water discharge (NLMK Lipetsk) ³	m³/t of steel	0.8	0.7 ² (0.7)	0.6	0.6
	Pollutants discharge into water bodies	'000 t	17.6	13.9 ² (12.5)	11.8	13.2
Increasing utilization of overburden, tailings and iron-containing wastes	Share of utilized secondary iron materials ⁴	%	93	99	100	101

¹ In 2021, the approach to assessing environmental investments changed: spending on revamping, upgrading and constructing new environmental facilities that were not previously taken into account have been added. Data for 2017–2020 were adjusted to ensure comparability.

² Without the impact of temporary factors associated with lower production.

³ Total, production and household wastewater.

⁴ Excluding overburden and tailings, taking into account accumulated sludge.

ENVIRONMENTAL PROGRAMME 2027 APPROVED

In 2021, the Strategic Planning Committee of the Board of Directors adopted NLMK Group's Environmental Programme until 2027. The key long-term goal for reducing environmental impact is to reduce total air emissions by 16% compared to 2023, while dust emissions to be reduced by 16% and sulfur dioxide emissions – by 6%. The programme also targets cessation of industrial run-off at the Group's Russian facilities and household run-off at the Lipetsk site. The company is planning to invest close to \$200 million in these efforts.

Main impacts of the Environmental Programme 2027

Emission reduction, '000 t/year			
Substance	Volume	Reduction vs. 2023, NLMK Group, %	Reduction vs. 2023, NLMK Lipetsk, %
All substances	51.3	16%	20%
Dust	3.4	16%	17%
NO _x	1.7	6%	11%
SO _x	1.8	5%	8%
Industrial and domestic wastewater reduction, '000 t/year of pollutants in the run-off (Russian companies)			
All substances	12.8	99.7%	100.0%

Supplier environmental assessment

Starting from 2007, all suppliers of NLMK Group have been subjected to audits, which cover compliance with environmental standards. Since 2015 all providers of raw materials, supplies, and equipment to NLMK Group as well as suppliers of services (contractors), undergo a qualification procedure, which also includes assessments for compliance with environmental requirements. The environmental criteria for assessing suppliers include compliance with legal requirements, availability of necessary permits and Environmental Management Systems. 10% of suppliers have so far confirmed that they have a certified environmental management system in place that complies with the ISO 14001 international standard.

The qualification, assessment, and audit procedures are set out in NLMK Group's regulatory documents. The procedures stipulate that counterparties that are recognized as not meeting the established criteria based on the qualification results are not allowed to supply raw materials, materials and equipment and perform services for NLMK Group enterprises.

GREEN HORIZON

The new project for the development of Stoilensky until 2030 is titled Green Horizon. The name is telling: the process solutions, which are being considered, will enable the growth of industrial development with little or no increase in environmental footprint, including through the upgrade of existing production facilities and the use of the best global environmental practices in new operations.

The most ambitious environmental initiatives of the Green Horizon project include:

- Using conveyor belts to deliver ore from the open pit to the beneficiation plant, thus eliminating railway transport and minimizing dusting
- Switching from traditional diesel dump trucks to electric trolley trucks, thus reducing emissions of nitrogen oxides
- Raising the bar for environmental standards applied to transport
- Using best available technologies in the field of de-dusting to drastically reduce concentration levels
- Construction of purification systems to cut nitrogen and sulfur oxides content in gas for pelletization and direct reduction of iron
- Creating closed water-loop system to cease industrial effluents

100% new suppliers and contractors were screened for environmental criteria in 2018–2021 GRI 308-1. There were no suppliers or contractors who were not allowed to work with NLMK Group due to non-compliance with environmental requirements.

All products supplied to NLMK companies come with safety data sheets that regulate potential hazards associated with the handling of products and prescribe the respective necessary precautions.

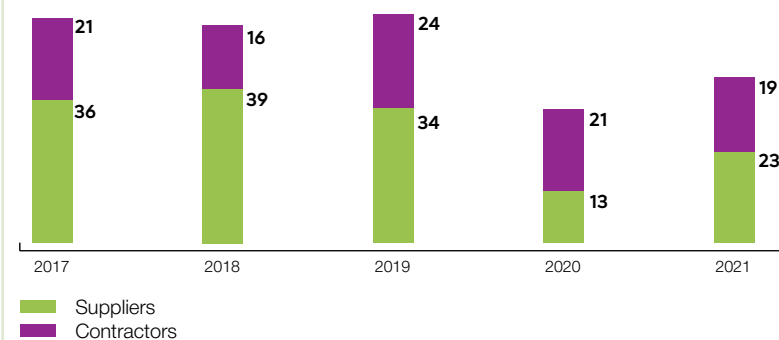
In 2021, NLMK Group audited 57 suppliers of raw materials, supplies and equipment, of which 23 were screened for environmental compliance. Based on the results of the audit, 11 suppliers developed measures to eliminate environmental risks **GRI 308-2**. An audit of 19 contracting organizations was also carried out, 15 of which developed measures to eliminate environmental risks.

After the audits, corrective action plans are developed together with suppliers and contractors to eliminate environmental risks. In 2021, 11 supplier audits revealed 19 instances of non-compliance and four recommendations were issued; as for contractors – 15 audits revealed 23 instances of non-compliance and five recommendations were issued. If a counterparty is unable to confirm that the identified gaps were eliminated, it is submitted to the conciliation committee which will decide if further cooperation is possible.

Evaluation of contractors is carried out on the basis of internal corporate documents through a specially developed qualification survey. The Standard Environmental Protection Requirements for Contractors is publicly available on the company's official website.

On an ongoing basis, for all employees of contractors, a four-hour training in environmental protection requirements is provided before obtaining work permit to production facilities and the company premises.

Suppliers of feedstock, materials, and equipment to NLMK Group screened using environmental criteria during audits **GRI 308-2**



Suppliers with corrective action plans following audits (% of total audits conducted) **GRI 308-2**

Indicator	2017	2018	2019	2020	2021
Share of suppliers with corrective action plans, %	69	80	41	38	48
Share of contractors with corrective action plans, %	90	63	50	43	79

Membership and participation in organizations

NLMK works with Russian and international associations to establish an effective dialogue on sustainable use of natural resources. In particular, NLMK Group is a member of worldsteel's expert groups on the environment, sustainable development and climate. As part of its collaboration with worldsteel, NLMK Group collects and submits data on sustainability indicators on an annual basis and participates in steel products life cycle assessment. In early 2022, NLMK Group signed an updated Sustainability Charter. In 2021, NLMK Group was recognized

as a Sustainability Champion. The title, which is the main industry award in this area, is awarded annually to steel companies that have proven their commitment to the principles of sustainable development.

NLMK Group is also a member of the Russian Steel industry association and takes active part in the work of its environmental committee, which reviews various environmental aspects of steelmaking operations and environmental regulation issues, as well as the working group responsible for developing steel decarbonization strategy in Russia.

NLMK is a member of the Committee on Ecology and Nature Management of the Russian Union of Industrialists

and Entrepreneurs, the main platform for consolidating the Russian business community's position on various environmental aspects. In addition, NLMK Group became a member of the newly created RUE Committee on Climate Policy and Carbon Regulation, where NLMK's Director on Environmental and Climate Affairs heads the international carbon regulation area.

NLMK Europe is a member of the European Steel Association (EUROFER), which discusses environmental developments in Europe and is particularly active in the EU

carbon regulation activities. NLMK Group is committed to the sustainable steelmaking principles promoted by the EUROFER.

In 2021, NLMK Group ranked second in the Environmental Responsibility Openness Rating of Mining and Metals Companies, a project of the World Wildlife Fund (WWF) Russia and the National Rating Agency, improving its result by four notches compared to 2020.

NLMK Group and the Austrian Metallurgical Competence Centre K1-MET continued their partnership

to develop a recycling technology for steelmaking waste. In cooperation with the shareholders of K1-MET – Voestalpine Stahl, Primetals Technologies Austria, Montan-University of Leoben and the University of Linz – NLMK implements projects for the efficient use and processing of secondary raw materials from steelmaking.

Monitoring, control, and compliance

NLMK conducts internal audits to assess its environmental impact. It also has a production control system in place. Internal environmental audits involve the comprehensive monitoring of operations at the Group's companies, including treatment facility performance tests, measures to reduce the environmental impact of generated waste, and an environmental production plan to reduce specific air emissions.

The Group employs environmental production monitoring procedures with support from accredited laboratories in order to monitor the implementation of resolutions, prevent non-compliance with effluent discharge standards, and monitor sources of emissions and atmospheric quality at NLMK companies. These procedures have been agreed with state supervisory bodies and are regulated by legal documents. **GRI 303-2** The Group's enterprises operate the Internal Environmental Improvements System (IEIS). IEIS provides internal control over compliance with established

standards and rules. Also, within the framework of the IEIS, compliance with design and legislative environmental requirements is monitored during audits by the Environment function. IEIS helps to prevent violations of environmental requirements and reduces the likelihood of instructions from regulatory authorities.

Supervisory bodies conduct regular annual checks, both scheduled and ad-hoc, of the Group's companies to ensure they comply with Russian legislation as well as stakeholder expectations. In 2021, territorial environmental control bodies conducted 45 inspections. At the same time, no

significant fines or non-financial sanctions have been brought against NLMK Group companies, and no lawsuits have been initiated to compensate for damage to the environment or third parties. There have been no environmental accidents in 2021. **GRI 307-1**

The payments have been decreasing over the last five reporting years, which is evidence of the reduction in the negative impact of the Group's businesses on the environment. In 2021, the share of over-limit payments in the structure of payments for the negative impact on the environment of the Group's Russian assets amounted to 1% (vs. 26% in 2017).

Payments for negative environmental impact, \$ m

Indicator	2017	2018	2019	2020	2021
NLMK Group ¹	2.6	2.3	1.7	1.8	1.5
Russian assets	1.9	1.3	1.0	0.9	1.0

¹ For the Group's international companies, costs of procuring permits are taken as payments for negative environmental impact.

NLMK USES DIGITAL TOOLS TO MONITOR AND ANALYSE VISIBLE EMISSIONS

In 2021, a system for analyzing visible emissions using machine vision algorithms and deep learning methods was developed and implemented at the Lipetsk site. The purpose of the system is to identify any non-typical atmospheric emissions recorded by CCTV cameras, determine their location, estimated volume and send notifications to the plant's specialists for detailed analysis and establishing the root causes of emissions. The service collects and stores data on all emissions, which helps acquire in-depth analytics. In 2021, this solution received three awards: at ComNews Awards 2021 it was recognized as the best digital ESG solution, at the III Russian competition **Reliable Partner – Environment** it topped the best project in the field of digitalization of ecology category, and at STAR 4.0 digital industrial innovations (part of Innoprom 2021) it won in the Sustainable Development category.

The company also engages its employees in the environmental control process. In 2021, NLMK Group's Lipetsk site launched a rapid response system for environmental incidents. By calling the hotline or leaving a message, the company employees and local residents can report an incident or discrepancy. The hotline for environmental issues helps to quickly record appeals and inform the residents directly about the real state of affairs. In addition, the solution complements the IEIS, designed to ensure the environmental

safety of the plant. As part of this system, shop employees themselves regularly find and eliminate environmental inconsistencies or their root causes.

In 2021, NLMK Group continued implementing its project to equip air emissions and wastewater sources with automated monitoring and data transmission devices. The company plans to allocate close to RUB 800 million for the implementation of this legislative requirement.

The plant's environmental laboratory daily monitors the impact of production on the environment and assesses the air quality not only at the plant, but also in the city. Every year, more than 26,000 tests are carried out, or close to 100 every day.

In 2021, innovative air quality monitoring systems were purchased for the Lipetsk site and Stoilensky. The systems will be installed at the borders of the sites' sanitary protection zone. Using these systems, it will be possible to monitor the state of atmospheric air, timely detect atypical emissions of nitrogen dioxide, carbon monoxide, sulfur oxide, hydrogen sulphide, and dust particles for subsequent analysis of the causes of their occurrence and development of measures aimed at their reduction or elimination. In 2022, a similar project is planned to be implemented at Altai-Koks.

In addition to innovative monitoring systems, it is planned to purchase portable gas analysis equipment for mobile and rapid measurements of harmful substances in the atmospheric air at the Lipetsk site. This will make it possible to timely control the quality of atmospheric air in places not equipped with stationary equipment.

Since May 2021, the company has been publishing environmental monitoring data on the main controlled substances (carbon monoxide, hydrogen sulphide, sulfur dioxide and nitrogen dioxide) in the air of Lipetsk. The map shows the indicators of average monthly values in MPC shares both from the posts of Roshydromet and from 12 additional control points on the border of the sanitary protection zone of the plant and in the city. An interactive environmental monitoring map is available to the public on the [NLMK website](#).

In 2021, Stagdok organized an online monitoring post for the noise and seismic effects of blasting. At a distance of 500 m from the boundaries of the mine, a noise monitoring station and a recorder of external vibration effects were installed, which provide information in real time. According to the results of the control, the permissible impact standards are observed, there are no excesses. A new monitoring station was installed

at the initiative of the company for additional control, information on measurements is regularly published on the [company's website](#).

In 2021, the roll-out of the Environment IT system began at the Group's Russian assets, which will automate environmental reporting, systematize and store actual data on the environmental performance of enterprises.

In 2021, the Environment mobile app project was initiated, which will help to get rid of paper logs and maintain an electronic archive.

Training

NLMK devotes special attention to fostering a culture of environmental awareness among its employees and local communities in the regions where it operates. A series of educational courses were developed for the benefit of all the Group's staff. In particular, in 2021, Management of Production

and Consumption Waste and Waste Atlas e-courses were developed, aimed at improving the culture of separate waste collection. At least 10% or 5,000 employees take environmental training sessions and development courses every year.

NLMK Group has been running the Green Office programme for several years already. It aims to enhance the commitment of the Group's employees to eco-friendly culture. In 2021, the Group companies installed additional 270 containers for the separate collection of waste: paper, cardboard, glass, plastic; there are also collection points for used office equipment. For the second year in a row, NLMK won the Green and Healthy Office competition in the Best Separate Waste Collection System category.

ENVIRONMENTAL AUDIT OF MINING ASSETS

As part of the development of an environmental liability insurance programme and the development of a procedure for identifying environmental risks and risks of man-made incidents with an impact on the environment, environmental audits were conducted at the company's mining assets in 2021.

The audits did not identify risks with a high probability of materialization, and also confirmed the high level of maturity of environmental risk management.

NLMK STARTED USING A MOBILE DUST SUPPRESSION SYSTEM

In 2021, an innovative solution for dust suppression of fugitive sources was implemented at the Lipetsk site. The mobile dust suppression system will be used year-round in areas where bulk materials are stored during loading and unloading operations characterized by heavy dusting, as well as during work on the dismantling of buildings and structures.

The volume of investments amounted to close to RUB 17 million

NLMK HELD THE ANNUAL NLMK YOUNG LEADER 2021 COMPETITION DEDICATED TO GREEN PRODUCTION

In 2021, the theme of the Young Leader annual corporate competition was Green Production. All projects participating in the competition reduced environmental impact, and some had an economic effect. A ferroalloy furnace operator won the competition with a project to reduce CO₂ emissions in ferrosilicon production.

GREEN CITY: ENVIRONMENTAL SEMINARS AT ALL LIPETSK SCHOOLS

The project tells the residents of Lipetsk about the current environmental situation in the city and the company's initiatives to reduce the impact on the environment. The seminars cover several important topics: health of the Lipetsk residents, areas impacted by the industry, programmes for improving the environment at the plant and in the city, green tools. Open communication between NLMK and the city are key to an effective partnership in the field of environmental safety.

Certification

NLMK’s continuous efforts to systematize its environmental management operations in accordance with modern international standards are reflected in its Environmental Management System, which helps to identify and monitor environmental issues and risks. The EMS functions within the framework of the company's integrated management system, which allows for a comprehensive approach to environmental issues for the Group as a whole, taking into account risk-based approach.

The ISO 14001:2015 standard has been implemented at 14 of the Group’s production facilities, where 89% of the Group employees work and which account for 96% of the Group's steel output.

Every year, internal audits are carried out at the company's facilities to confirm the compliance of the current EMS

NLMK CONFIRMED COMPLIANCE WITH INTERNATIONAL ENVIRONMENTAL STANDARDS

NLMK Group extended the validity of its ISO 14001 certificate. The document confirms that the Environmental Management System employed by the Group companies complies with this international standard. The audit was conducted by the British Standards Institute (BSI).

with the requirements of international standards. In 2021, 86 internal audits were carried out.

In order to ensure a systematic approach to environmental management at the Group’s facilities, supervision and recertification audits for compliance with ISO 14001:2015 are carried out on a regular basis.

In implementing its environmental programmes, NLMK focuses on the introduction of the best available

technologies. As part of a four-party agreement between NLMK, the Ministry of Natural Resources, Rosprirodnadzor and the administration of the Lipetsk Region, the company has already implemented six out of nine projects planned until 2024. They aim to implement the Ecology federal project. These projects reduce emissions by 9,200 tonnes, which is 49% higher than the planned effect.

Plans for 2022–2023

In the next reporting periods, NLMK plans to implement environmental initiatives, including through the overhaul of major production facilities using the best available technologies.

Key projects planned for 2022–2023

Site	Project	Environmental impact
NLMK Lipetsk	Repair of air heaters for blast furnaces No. 3&5 Revamping of air heaters of blast furnace No. 4	Reducing CO emissions by 7,500 tonnes per year
NLMK Lipetsk	Revamping of the de-dusting system of mixer No. 1 in BOF Shop No. 1	Reducing dust emissions by 100,000 tonnes per year
Stoilensky	Technical re-equipment of the de-dusting system of the medium and fine crushing section of the beneficiation plant	Reducing dust emissions by 791 tonnes per year
NLMK Lipetsk	Setting up accumulation area for waste generated in wagons cleaning	Elimination of the soil contamination risk on an area of 1,000 m ²
NLMK Lipetsk	Elimination of the risk of dusting when liming oily scale	Elimination of the soil contamination risk on an area of 120 m ²
Altai-Koks	Revamping of the dust collection system of the dust-free coke dispensing unit on coke oven batteries No. 3 and No. 4	Reducing dust emissions by 254 tonnes per year
Stoilensky	Reconstruction of the storm sewer	Exclusion of the risk of soil pollution on an area of 1,100 m ²
NLMK Indiana	Arrangement of a waste storage warehouse	Elimination of the soil contamination risk on an area of 500 m ²

Water resources

GRI 303

Water stewardship priorities

NLMK Group is committed to reducing the volume of water that it consumes, and devotes considerable efforts to lowering its water withdrawal volumes in favour of reusing water. Indicators for reducing the impact on water resources are set in the company's Strategic Goals. The most important impact mitigation tool for the company is the consistent building of closed water-loop systems at the Group companies, which make it possible to withdraw fresh water only to compensate for the inevitable losses from water evaporation.

The company regularly monitors and assesses the risks of water availability in all its home regions, using data from regular reports on the state and utilization of water resources published by the Ministry of Natural Resources and Ecology of Russia and authorized state control bodies of other countries, as well as: <https://www.wri.org/>; <http://www.sage-ill-nappe-rhin.alsace/>; <https://watersgeo.epa.gov/watershedreport/>.

In 2021, NLMK Lipetsk continued the initiative to discuss the state of urban sewage treatment plants and their potential upgrade with the Lipetsk city administration and the Lipetsk municipal WWTP. NLMK experts evaluate and optimize technical solutions for the upgrade of Lipetsk's wastewater treatment facilities based on the company's experience in upgrading its own storm water treatment facilities, which made it possible to reduce concentrations of all substances.

Water withdrawal and consumption

GRI 303-1 GRI 303-3

NLMK companies withdraw a small proportion of their water from external sources (less than 3% of the Group's total industrial water supply). Maintaining the same low level of freshwater intake as production

volumes grow is an important objective of NLMK Group. For industrial water supplies, the companies use fresh water from surface water bodies, underground sources, and rainwater. NLMK Group companies do not use wastewater from third-parties. All water withdrawn by the company is fresh water.

The Group companies do not withdraw water from wetlands included on the Ramsar List of Wetlands of International Importance or from water bodies located within environmental conservation sites.

The water bodies that supply NLMK companies are assessed as being not particularly vulnerable given their size, role, or status as being rare, threatened, or endangered.

The Group's companies withdraw fresh water in accordance with current permits and have no significant impact on the water sources in question. Water withdrawal by NLMK Group companies does not exceed 2.5% of the average annual water flow volume. [GRI 303-5](#)

WATER-RELATED RISKS IN NLMK'S FOCUS

In 2021, the company completed an analysis of the risks and opportunities associated with climate change and the activities of NLMK Group, including risks associated with water availability in the regions where it operates. The results of the assessment show that in the short and medium term, this risk has a low probability of impact on the Group's operations.

Water scarcity risk

Water stress is projected to increase across Zarinsk, Farrell, PA, Clabecq, Lipetsk and Stary Oskol. In areas currently under low water stress, e.g. Zarinsk this is unlikely to have a significant impact on operations, however at sites already located in areas of high or extremely high water stress, e.g. Stary Oskol and Clabecq, this could have an impact on operating costs as competition for water increases prices rise. The impact of cost increases for water consumption is most significant in Pennsylvania where the cost of water is highest. In total, water availability risks were found to account for less than 1% of the overall estimated value at stake. In 2021, there was no conflict of interest with stakeholders associated with the risk of water shortages. [GRI 303-1](#)

Flood risk

Flood risk in Lipetsk is an event driven risk that has not been consistently recorded for a long enough duration of time. The latest flood event was reported in the region in June 2016, however no disruption to operations at the Lipetsk site was observed due to mitigation measures in place at the site (industrial storm drains and shop floor water pumps).

Drought risk

The risk of drought has been assessed within the Lipetsk Region and research found that Lipetsk has been impacted by drought previously, however the drought had no significant impact on the operations of NLMK's Lipetsk site. The assessment of NLMK's Lipetsk operations during historic droughts supports the conclusion that vulnerability at the site to droughts, of the magnitude experienced previously, risk is low.

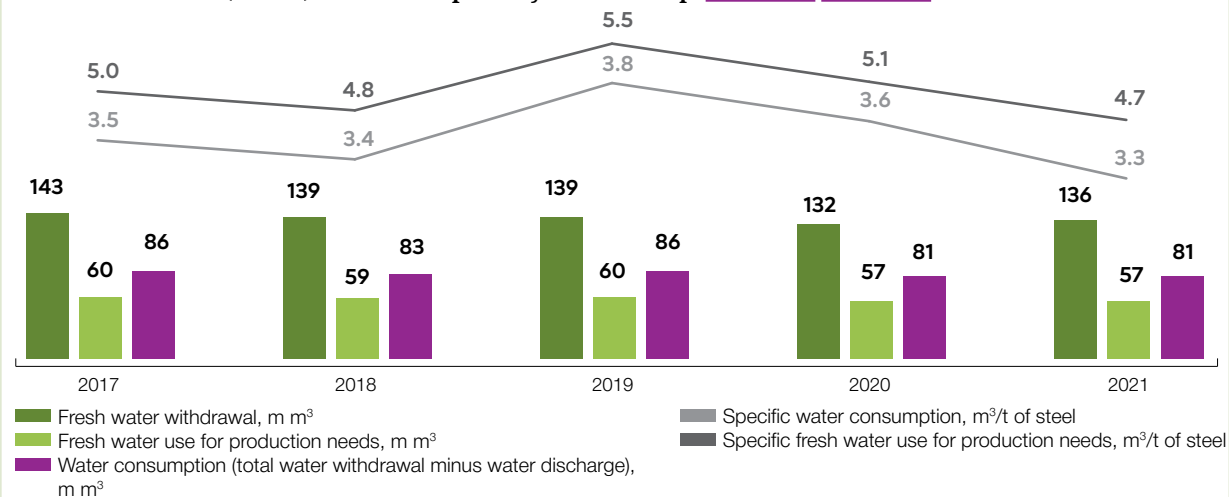
For more details on the risks associated with climate change, see the [Climate Change](#) section.

NEW LONG-TERM TARGET 2027 – ZERO RUNOFF

Water protection has always been and remains the focus of the company's attention. Over the past 40 years, fresh water withdrawal at the main production site in Lipetsk has been reduced by a factor of nine, since 2000 – by a factor of five. Back in 2009, the technical water supply system was upgraded at the Lipetsk site in order to create a closed water-loop system. The discharge of industrial and storm sewage into the Voronezh River was ceased. As a result, the fresh water withdrawal reduced many-fold, as runoff that used to be discharged is now returned to production cycle instead of fresh water withdrawal.

In December 2021, the Strategic Planning Committee of the Board of Directors approved the Environmental Programme through to 2027, which sets the goal of complete cessation of wastewater discharges into water bodies at the Russian companies of the Group.

Fresh withdrawal (intake) and consumption by NLMK Group¹ GRI 303-3 GRI 303-5

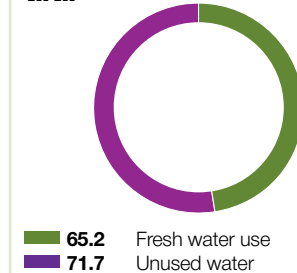


Fresh water withdrawal (intake) by NLMK Group, by source and region, and use of withdrawn water, m³ GRI 303-3 GRI 303-5

Indicator	2017	2018	2019	2020	2021
Total water used, including	70.0	68.9	70.6	65.1	65.2
• for production needs	59.6	58.6	59.8	57.3	57.1
• for household needs	10.4	10.3	10.8	7.8	8.1
Share of used water, % of water withdrawal (intake)	49%	49%	51%	49%	48%
Unused water	74.9	72.3	70.3	67.9	71.7
Fresh water withdrawal by NLMK Group ¹ , including	143.1	139.4	139.4	131.6	135.5
• Russian companies	107.8	104.8	103.7	98.9	101.6
• international companies	35.3	34.7	35.8	32.7	33.9
Process water	121.4	120.5	120.9	113.8	116.3
• Surface water, including	64.0	63.3	64.6	61.5	62.6
– Russian companies	31.9	31.5	31.8	31.3	31.4
– international companies	32.1	31.8	32.8	30.1	31.2
• Groundwater, including	57.3	57.1	56.1	52.2	53.5
– Russian companies	54.7	54.8	53.8	50.2	51.5
– international companies	2.6	2.3	2.4	2.0	2.0

Indicator	2017	2018	2019	2020	2021
• Rainwater collected and stored by the Group	0.1	0.1	0.1	0.1	0.1
– Russian companies	0.1	0.1	0.1	0.1	0.1
– international companies	0	0	0	0	0
Potable water	21.7	19.0	18.6	17.8	19.2
• Surface water	0	0	0	0	0
• Groundwater, including	18.1	17.9	17.6	17.0	18.3
– Russian companies	17.8	17.6	17.3	16.7	18.0
– international companies	0.3	0.3	0.3	0.3	0.3
• Municipal water, including	3.6	1.0	1.0	0.8	0.8
– Russian companies	3.4	0.9	0.7	0.6	0.6
– international companies	0.2	0.2	0.2	0.2	0.2
Urban wastewater converted for treatment	1.8	1.7	1.5	1.4	1.4
Water consumption	85.6	83.3	85.7	81.3	81.0

NLMK Group's water use in total volume of water withdrawal (intake), 2021, m³

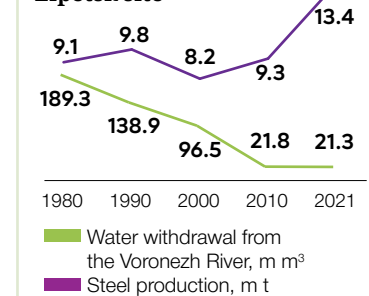


In 2021, there were no incidents related to interruptions in access to water (work stoppages / plant closures, etc.) that had any impact on the Group's financial state or production activities.

Unused water is drainage water from the mines that is discharged without being used in the production process, as well as direct-flow water used for non-contact cooling of production units, lost water and third-party water. This water is not consumed in the production process and is not polluted. Unused water accounted for 52% of water withdrawal in 2021.

In 2021, a five-year low of fresh water consumption for industrial needs was reached, thanks to operational measures to control water consumption, eliminate leaks, and return wastewater for reuse. A total of 75% of fresh water withdrawal falls on the Russian companies of NLMK Group.

Fresh water withdrawal from the Voronezh River, Lipetsk site



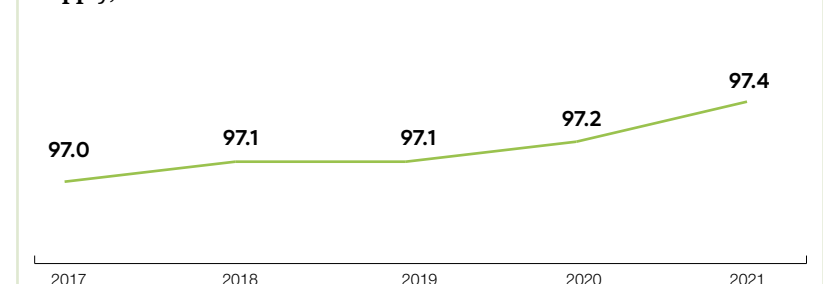
Over the last 40 years the annual withdrawal of fresh water from the Voronezh River by the Group's core site in Lipetsk has been reduced by over nine times down to 21.3 million m³/year (from the level of 189 million m³/year in 1980 when production output was merely 9 million tonnes).

Recycled and reused water

In order to reduce their negative impact on water resources, the majority of NLMK Group's companies are equipped with water recycling systems, which also mitigates the Group's water-related risks.

Closed water-loop systems have been put in place at 14 NLMK Group assets. These solutions include both local systems for individual facilities and entirely self-contained subsidiary-wide systems. This helps to reduce water withdrawal and effluent discharge into surface water bodies. The share of recycled water supply at NLMK Group remains at a consistently high level. The goal of Strategy 2022 is to maintain a recycled water supply of at least 96% amid increasing production output.

Share of recycled water in NLMK Group's total industrial water supply, %



¹ The approach to the presentation of data on fresh water withdrawal (intake) has been adjusted vs. the previous year. Water withdrawal is shown taking into account third-party, transit and lost water.

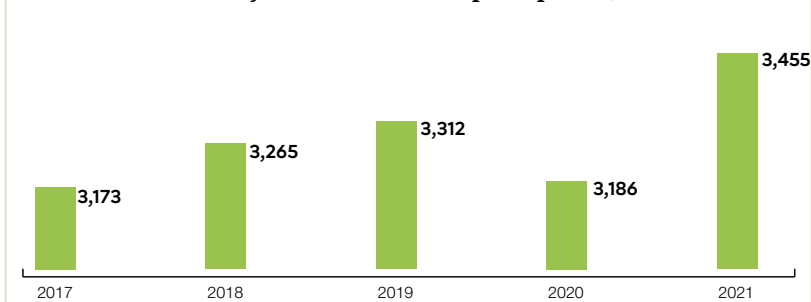
The regions where the Group operates offer a high availability of water resources. The Group has no operations in water-stressed areas¹. According to the UN methodology, a region or country is considered water-deficient if its annual water supply is below 1,700 m³ per capita.

Only one location, namely the Belgorod Region where Stoilensky is situated, is exposed to potential local water shortage. Recognizing the importance of preserving the water resources in light of shortage risks, Stoilensky is implementing projects to cut down potable water consumption and taking action to protect water resources from the harmful effects of operations, including through better safety and the reliability of hydraulic structures. A dedicated certified laboratory regularly samples and checks the quality of water withdrawn, sewerage and water bodies in the area of potential impact. In 2021, a project was also approved to redirect pumped clean drainage water from the Stoilensky open-pit mine directly into a water body without using it in the closed loop: this way up to 8 million m³ per year uncontaminated water, a valuable resource, will be returned to the natural environment.

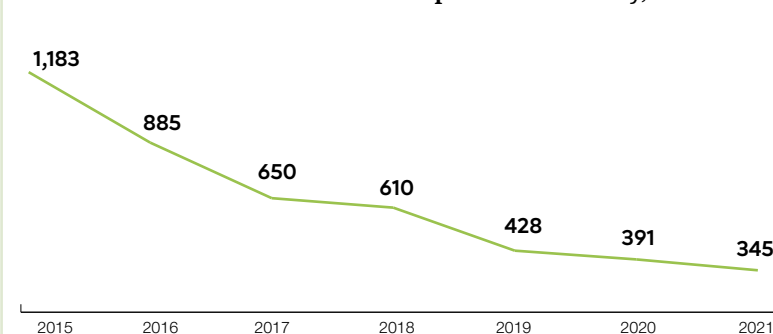
Water discharge

Monitoring of effluent discharge into water bodies at all sites is an important environmental aspect of NLMK Group operations. Summary data for NLMK Group on the volume of water discharge and pollutants content are formed on the basis of official statistical reports (2-TP Water Management) for Russian companies and reporting data of the Group's international companies. The bulk of pollutants are suspended solids, dry residues and biological oxygen demand. At all wastewater outlets, regular monitoring of water quality is organized according to the quality and quantity indicators established

Volume of water recycled at NLMK Group companies, m m³



Potable and household water consumption at Stoilensky, '000 m³



by the discharge permits. These permits establish wastewater quality standards on the basis of the profile of water bodies and the so-called fisheries standards (standards for water bodies intended for fish breeding), which in Russia are significantly stricter than foreign similar requirements for industrial wastewater and drinking water quality. The number of controlled indicators for the Group's main production sites is approaching 20. According to a number of them, enterprises should produce cleaner water than the one they withdraw. NLMK Group companies do laboratory checks of all monitored indicators for compliance with established standards and requirements. Compliance with water discharge regulations is subject to regular monitoring by supervisory bodies. **GRI 303-2**

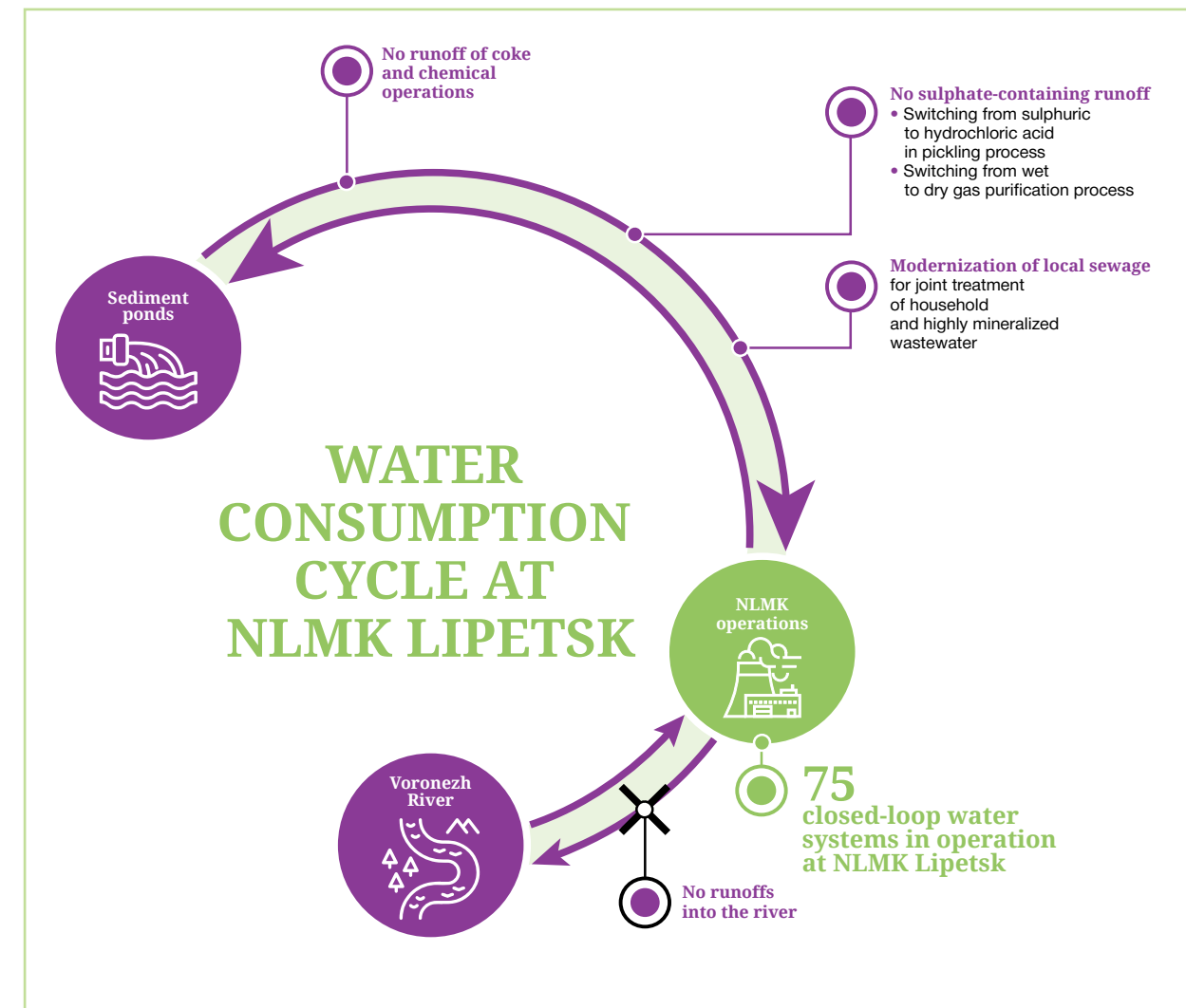
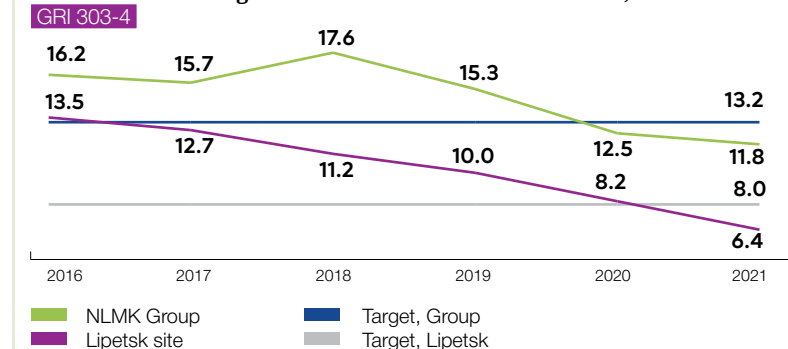
Measurements are carried out by accredited laboratories. The water level in NLMK's settling ponds and the tailing pond of Stoilensky is also monitored to eliminate the possibility of spills and unauthorized water discharges. There have been no cases of water level approaching critical levels in 2021.

The Group's international companies mainly discharge water that is used for cooling equipment in once-through systems. This water does not get polluted in use and is returned into water bodies in the same conditions as it was withdrawn, without disrupting the natural state of the environment.

Each Group company makes use of water purification and treatment technologies that ensure the quality

of effluents as well as water used for industrial and household purposes meets the standards set by applicable regulations. No untreated discharges are made into water bodies. **GRI 303-4** All discharged effluents have mineral content of less than 1 g/l. The total mineralization of effluents is defined as the ratio of the mass of pollutants to the volume of effluents. The trend of the total mineral content in effluents shows an improvement in the quality of wastewater. From 2018 to 2021, total mineral content decreased by 28%.

Pollutants discharge into water bodies with effluents, '000 t



¹ Source: State Report on the Condition and Use of Water Resources in the Russian Federation, http://www.mnr.gov.ru/docs/gosudarstvennye_doklady/.

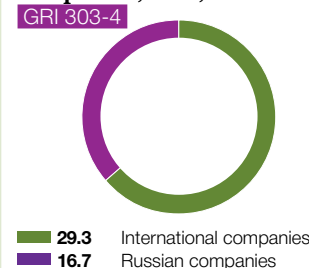
The company's Environmental Programme sets the goal of reducing the discharge of pollutants with wastewater into water bodies by 25% compared to 2018. In 2021, compared to 2018, the pollutants discharge was reduced by 33% due to the upgrade of local treatment facilities at the Lipetsk site, completed in 2020, and a set of measures to reduce effluents.

In 2009 NLMK Lipetsk ceased industrial run-off into the Voronezh River. In 2021, a set of measures was implemented to reduce the discharge of household wastewater into the Voronezh River. At the end of 2021, compared to 2020, the volume of effluent discharge reduced by 0.7 million m³ (–8%) and the flow of pollutants into the water body was reduced by 1,800 tonnes (–22%).

Since 2016, the volume of water discharge at the Lipetsk site has decreased by 3.5 million m³ (–32%), the amount of pollutants discharge into the river has been reduced by 6,300 tonnes (–46%). Over the same period, water discharge at NLMK Ural more than halved, the amount of pollutants discharged into water bodies reduced by more than 6 times due to the closure of several outlets. At NLMK Kaluga, industrial effluent discharge was completely stopped, there is no pollutants discharge into water bodies.

The goal of the Strategy 2022 to reduce pollutants discharge into water bodies was achieved in the reporting year. The new Environmental Programme has set a new goal of zero discharge of pollutants with effluents at the Group's Russian companies by 2027.

Total volume of water discharge by NLMK Group, including unused water, by Russian and international companies, 2021, m m³
GRI 303-4



Waste handling and sound use of natural resources GRI 306-1

Circularity measures and priorities

NLMK Group's waste-handling operations are orientated towards key modern steelmaking trends: minimizing waste generation and increasing the proportion of waste that is processed, reused, and safely disposed of. For example, a priority of the Environmental Programme through to 2023 is to increase waste utilization and recycling at NLMK Group to 92%¹. Utilization includes reuse, recycling, and waste disposal. Potential negative impact on the environment is minimized through compliance with the requirements for safe waste management and the implementation of appropriate measures. GRI 306-2

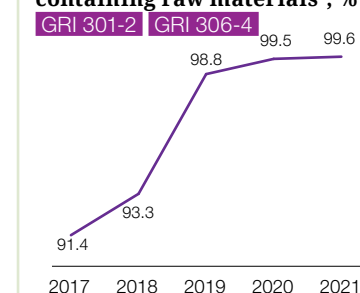
Even today, the vast majority of secondary resources are processed within the Group's facilities. To achieve the targets, the company has adopted a large-scale Recycling Programme. The implementation of the Recycling Programme will ensure an increase in the rate of internal processing of secondary raw materials at the Lipetsk site from 87% to 95%. By optimizing the process of secondary raw materials processing, it is planned to halve the volume of waste disposal from 237,000 tonnes to 107,000 tonnes. In 2021, a project was launched to develop and implement a strategy and system for managing recycled raw materials, taking into account the circular economy principles. This will allow NLMK Group to achieve one of the strategic Sustainable Development Goals "Ensure sustainable consumption and production patterns" (SDG 12), by increasing captive waste processing to a level of at least 98%. The main effects for the Group are achieved through the extraction of additional iron, the use of secondary energy resources, as well as the sales of products generated from sorting and separate collection of waste. The Recycling Programme includes not only projects to utilize iron waste in production, but

also projects for the recycling of carbon waste (plastic, wood waste, paper) and other technogenic raw materials

An example of the utilization of secondary resources in production and an increase in the sales of by-products is the project for the processing of concrete and reinforced concrete breakage, which started in 2021. The project will enable recovery of up to 5,000 tonnes of iron per year and up to 100,000 tonnes of secondary crushed stone – to be sold to third parties as by-product. GRI 306-4

In 2021, work was organized to process waste from the cleaning of railway cars. The project enabled recovery of over 600 tonnes of ferrous scrap, as well as significantly reduced the costs of waste disposal at third-party landfills. GRI 306-4

Recycling of secondary iron-containing raw materials², %
GRI 301-2 GRI 306-4



Total volume of water discharge by type, quality, and receiving water body, NLMK Group, m m³
GRI 303-4

Indicator	2017	2018	2019	2020	2021
Wastewater after use ¹	23.5	26.3	24.1	20.7	20.8
Including household effluents at	9.2	8.6	7.3	6.7	6.0
• the Lipetsk site					
• Stoilensky	4.0	7.6	6.5	4.9	6.4
• Other Russian companies	2.0	1.8	1.5	1.4	1.4
• International companies	8.3	8.3	8.8	7.7	7.1
Specific water discharge ¹ after use, m ³ / t of steel	1.4	1.5	1.5	1.3	1.2
Total water discharge ² , NLMK Group	47.4	49.0	47.7	43.4	46.0
• to surface water (rivers, lakes, reservoirs and canals)	45.2	46.9	45.7	41.6	44.1
• Including to seawater	0.2	0.3	0.3	0.3	0.3
Converted to third parties for treatment	2.1	2.1	2.0	1.8	1.8
Specific total water discharge ² , m ³ / t steel	2.8	2.8	3.0	2.7	2.6
Water discharge as % of total water supply	1	1	1	1	1
Share of unused water (drainage water, rainwater, non-contact cooling, third-party effluents) in the total volume of water discharge, %	52	48	51	52	55
Pollutants discharged into water bodies, '000 t	15.7	17.6	15.3	12.5	11.8
Effluent mineralization, g/l	0.33	0.36	0.32	0.29	0.26

¹ Industrial and household effluents.

² Including unused water (direct flow cooling water, third-party effluents, rainwater and drainage water). Water discharge volume does not include water collected and converted to third-party organizations / municipalities and the loss of withdrawn water during transportation. In 2021, the volume of such unused water totalled 10 m m³.

¹ Not including mining waste – overburden and beneficiation tailings – which is not considered waste in many geographies.

² When calculating the recycling index, data on the total generation and utilization of iron-containing waste and associated products is used. Mining waste is not factored in. In addition to iron-containing waste, the recycling index takes into account slags, slurries, gas cleaning dust, and ferrous metal scrap, which, in accordance with the process and national legislation, are not waste and are marketed or used for the company needs.

Total waste generated and utilized by NLMK Group, m t GRI 306-3 GRI 306-4 GRI 306-5

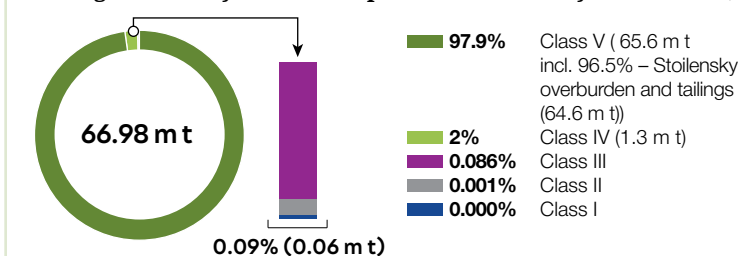
Indicator	2017	2018	2019	2020	2021
Waste generation ¹	1.5	1.5	1.5	1.4	1.6
• hazardous ²	0.1	0.1	0.1	0.1	0.1
• non-hazardous	1.4	1.5	1.4	1.3	1.5
Secondary raw materials recovered in-house	1.9	1.8	1.9	2.0	1.3
Total waste and recovered recyclables	3.4	3.4	3.4	3.4	2.8
• hazardous ²	0.1	0.1	0.1	0.1	0.1
• non-hazardous	3.3	3.2	3.2	3.2	2.7
Secondary raw materials recovered by third parties	1.0	1.2	1.2	1.2	1.4
• hazardous ²	0.1	0.1	0.1	0.1	0.1
• non-hazardous	1.0	1.1	1.2	1.2	1.3
Waste disposal at third-party landfills	0.2	0.1	0.1	0.1	0.1
• hazardous ²	0.0	0.0	0.0	0.0	0.0
• non-hazardous	0.2	0.1	0.1	0.1	0.1
Incinerated waste	0	0	0	0	0
Secondary raw materials accumulated at year-end	5.7	5.9	6.1	6.1	1.6
Recycling of secondary iron-containing raw materials, %	91.4	93.3	98.8	99.5	99.6
Recycling, total ³ , %	96.9	97.6	98.0	98.8	98.9

In 2021, a pilot project was successfully launched at the Lipetsk site together with the Russian company Eco-Gradient to clean oily scale using the coalescence method. This technology is an environmentally friendly method of cleaning mill and BOF scale from oil products. The new technology will make it possible to feed recyclables back into sinter operations without burning oil and to recover high-quality oil product for further sale.

By creating a competitive environment between final processors and consumers of secondary raw materials, as well as by optimizing logistics processes, the cost of third-party disposal in 2021 was reduced by 10% compared to 2020.

In NLMK Group, waste includes substances or items that are not processed in-house, which are formed during production, performance of works, provision of services or in consumption, which are processed/disposed of by third-parties or are buried/landfilled. GRI 306-2

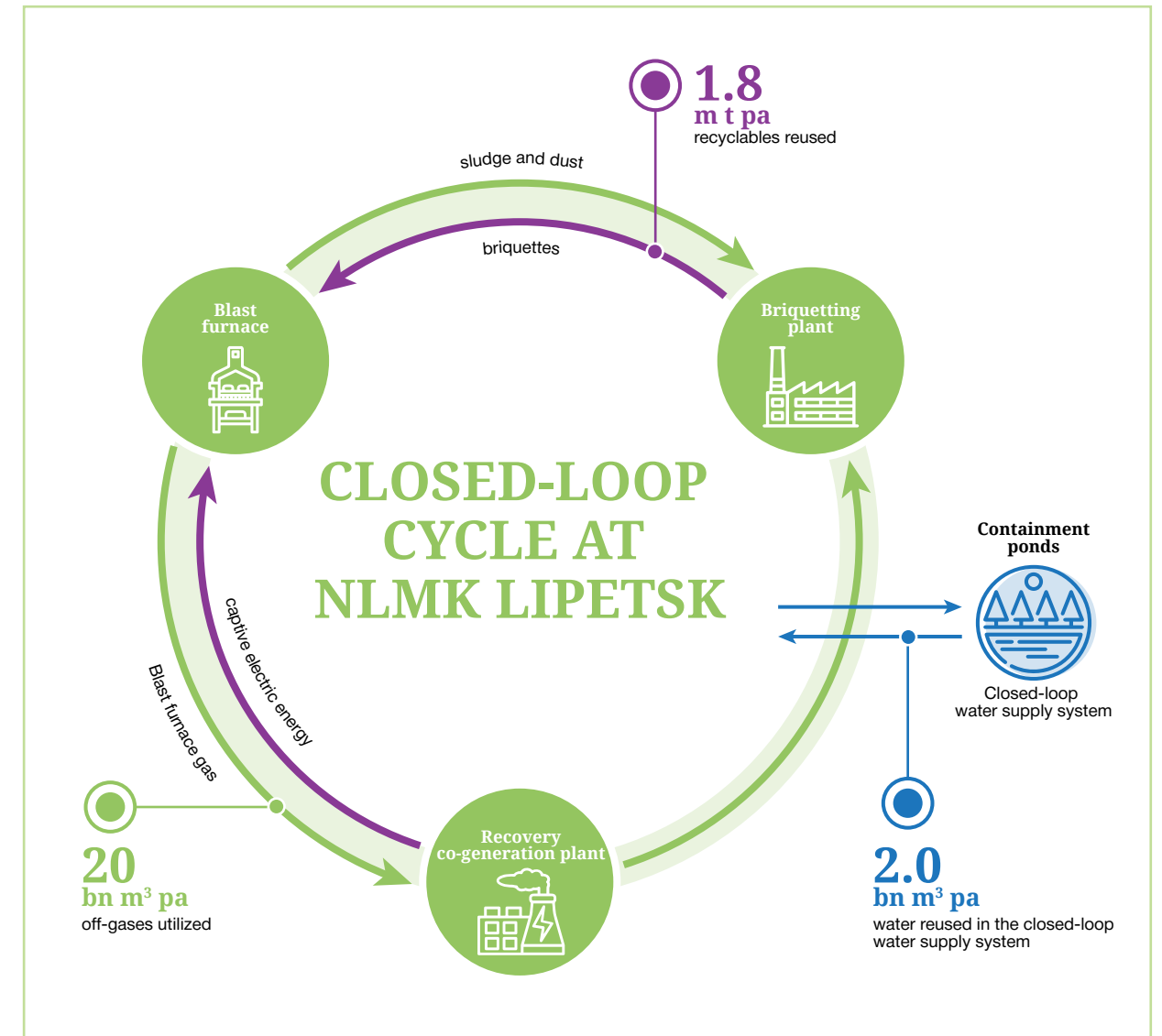
Waste generated by NLMK Group's Russian assets by hazard class, m t



In 2021, waste generation increased by 0.2 million tonnes due to a 10% increase in steel output. In 2021, 4.5 million tonnes were excluded from the previously accumulated secondary raw materials. At the same time, the recycling of iron-containing raw materials approached 100%, thanks to the processing of iron-containing sludge at the briquetting factory built in 2019.

The share of processed sludge increased from 47% in 2018 to 100% in 2021. Further, it is planned to process the entire volume of generated sludge at the plant and gradually process

the previously accumulated sludge. The total share of recycling, excluding processing of previously accumulated raw materials, amounted to 98.9%, and taking into account the accumulated waste – 129.5%.



Overburden and beneficiation tailings generated and utilized by NLMK Group, m t GRI 306-3 GRI 306-4 GRI 306-5

Indicator	2017	2018	2019	2020	2021
Stoilensky overburden and beneficiation tailings	53.9	46.6	53.7	61.4	64.6
Share of utilized Stoilensky overburden and beneficiation tailings, %	9	10	10	8	8
Overburden generation ¹	48.5	39.8	51.3	60.5	60.7
Share of utilized overburden, %	25	26	29	29	28
Generated beneficiation tailings	18.2	19.5	20.5	21.4	23.9
Utilized beneficiation tailings, %	25	25	26	24	23

¹ The total volume of generated overburden is indicated. For Stagdok and Dolomit, overburden is not waste and is utilized for backfilling post-mining areas, as the mine is developed sideways, in contrast to Stoilensky, where the mine is being developed primarily "into the depths", and the resulting overburden is mostly considered waste by Russian law, even though it is a non-hazardous inert material.

¹ Excluding secondary raw materials recovered in-house, Stoilensky's overburden, and tailings.

² Hazardous waste includes I-III hazard class waste.

³ Recycling includes waste disposal and by-product recovery without processing of accumulated recyclables.

NLMK Group continuously implements measures to minimize the generation of hazardous waste. Part of the generated hazardous waste is disposed of by the Group at its own sites, part is transferred for disposal or neutralization to specialized organizations that have the appropriate licenses.

In 2021, sorting and separate collection of plastic tableware was organized at the Lipetsk site. The use of plastic tableware is one of the preventive sanitary measures amid the pandemic. Thus, the transfer of all types of plastic to a specialized company for recycling in 2021 increased by 14% compared to 2020.

Production lifecycle

NLMK Group companies produce steel products that can be fully assimilated into the environment once they are no longer of use to consumers. In this regard, ferrous metal products are a valuable raw material that can be reused in steelmaking.

NLMK Group products are part of circular economy: 100% of the products can be recycled and recovered, 35% of the Group's steel is produced from ferrous scrap. **GRI 306-4**

Tailings dams and hydraulic engineering structures

The organizational structure of NLMK Group includes dedicated services and units responsible for the safety of hydraulic structures. On an ongoing basis, measures are taken to monitor and control

ENERGY EFFICIENCY WHILE REDUCING HAZARDOUS WASTE

In 2021, a large-scale project to modernize the lighting systems at the Russian sites of the Group was launched. One of the objectives of the project is the complete elimination of mercury-containing light sources, with the replacement of lamps with modern LEDs. Implementation of the project in the near future will make it possible to cease generation of Class I hazardous mercury-containing waste. Another task is to increase the efficiency of lighting systems in the production units of NLMK Group's Russian companies to ensure standard illumination of workplaces while reducing power consumption. In total, more than 90,000 light units will be replaced.

99.9%

of the waste, generated by NLMK Group's Russian companies in 2021, is non-hazardous.

the state of the environment throughout the entire life cycle of deposits and tailings. All deposits developed by the company are at the stage of industrial development or exploration. Currently, iron ore reserves have been explored for over 130 years ahead, and the mine closure is not planned.

In 2021 a comprehensive survey of Stoilensky tailings dams and hydraulic engineering structures was conducted together with specialized government agencies, general designed and experts. The survey assessed the safety level of the Stoilensky tailings dams and hydraulic engineering structures as 'normal' (the best possible option).

The Group duly informs local communities about the existence of the tailings dam and holds regular public hearings regarding the development of the facility. All development projects of the company are coordinated with stakeholders.

Stoilensky's tailings dam is the only NLMK's tailings dam, built in 1984. Throughout its operation, no environmental incidents related to the tailings dam systems and structures have been recorded.

The dam has a local warning system, which is checked monthly by employees of Stoilensky and experts from Rostekhnadzor. A plan for the liquidation of accidents of tailings dams and hydraulic structures has been developed, which is updated annually. Staff training is carried out at least once a month. In September 2021, scheduled training sessions were held with the involvement of employees of the Russian EMERCOM. According to the conclusion of the specialized state committee, monitoring of seismic activity for the area of the tailings is not required.

The Stoilensky tailings facility uses an efficient and environmentally friendly method of processing waste rock after beneficiation, which involves the extraction of liquid and further forced transportation of tailings in a condensed state. This saves natural resources: 80% of the process

water used during transportation is returned into production. In addition, the dusting is significantly reduced, since thickened tailings are not subject to weathering.

No excess water intake with beneficiation tailings in the tailings dam eliminates the risks of its overflow and reduces pressure on the dams. Taking into account tailings thickening and measures to ensure the safety of hydraulic structures, the risk of dams breach at Stoilensky is under control and has a conditionally acceptable level.

The water level in the tailings dam is maintained at the level more than 2 m below the crest of the dams, which meets the current safety criteria. The cost of the tailings storage maintenance programme amounted to RUB 416 million in 2021.

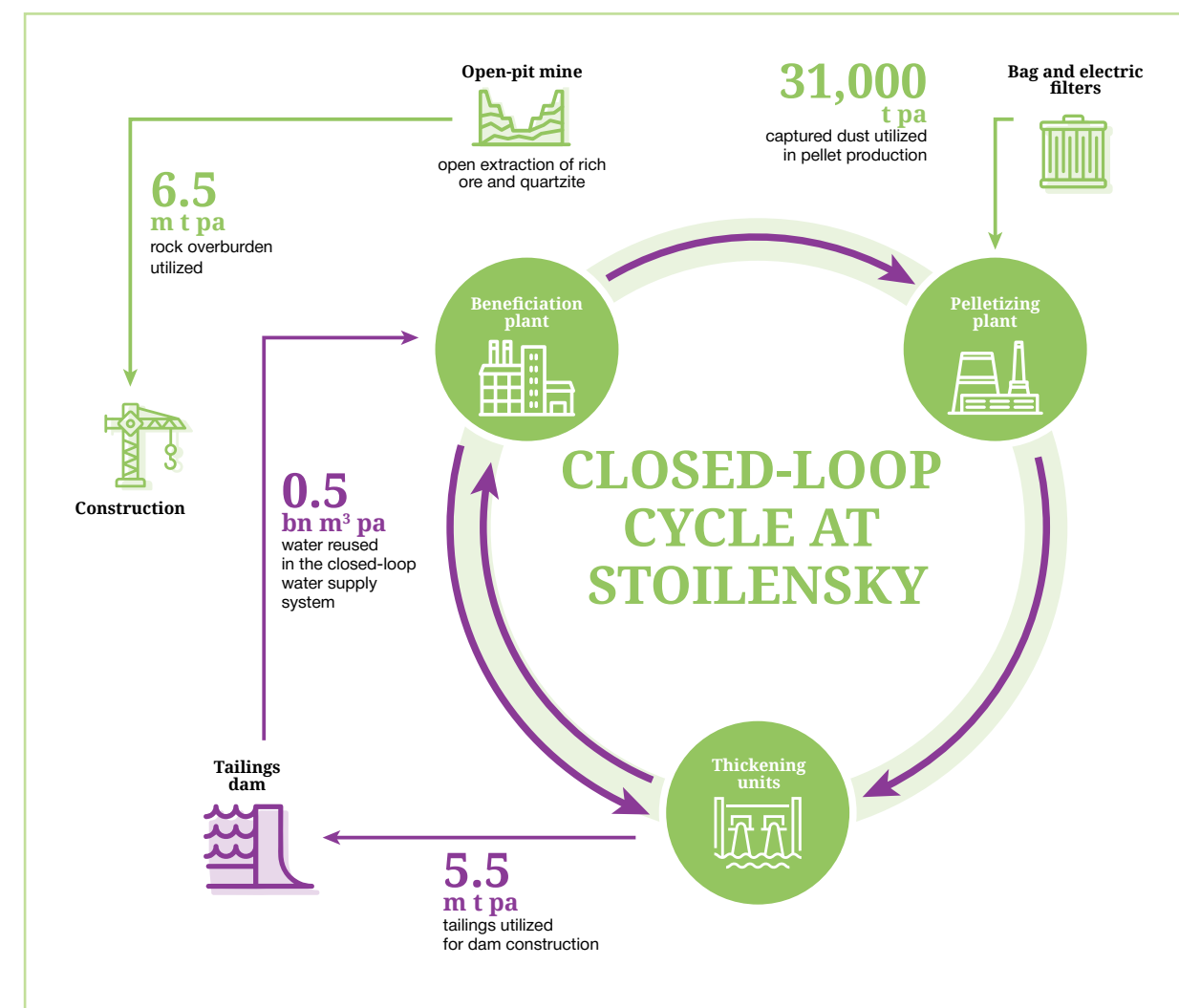
NLMK VTORCHERMET, A LEADER IN SCRAP FERROUS METAL PROCESSING

One NLMK Group asset, NLMK Vtorchermet, is an industry leader in scrap metal processing technology. It collects and processes scrap ferrous metals, and supplies NLMK Ural, NLMK Kaluga, and NLMK Lipetsk with 85% of the high-quality scrap metal they need for steelmaking. Processing scrap metal helps both rid the environment of scrap and significantly reduce consumption of natural resources and energy.

NLMK Vtorchermet annually processes 5 million tonnes of scrap metal.

DUST CONTROL IN THE STOILENSKY MINE

In the Stoilensky mine, a watering machine with a tank volume of 110 m³ was put into operation, which makes it possible to irrigate the faces and roads in the mine twice as fast compared to 35 m³ tank trucks. An experimental project to create such equipment was implemented by experts from Stoilensky and the Grodno Mechanical Plant.



Atmospheric air protection

Air protection priorities

NLMK Group devotes considerable efforts to reducing its air emissions and has set a target of reducing specific air emissions from 18.9 kg/t in 2018 to 18.0 kg/t of steel by 2023, or by 5%.

In 2021, the company began to develop priority projects under a long-term programme for the modernization of de-dusting systems. The new

Environmental Programme 2027 also provides for operational measures for the repair and maintenance of de-dusting systems to improve cleaning efficiency.

Since 2000 NLMK Group's specific emissions more than halved, from 43.3 to 18.1 kg/tonne of steel. Overall, with almost a two-fold increase in production the amount of cumulative impact on the environment was reduced by 58%.

Emission of controlled substances

In 2021, gross emissions decreased by 17,300 tonnes (by 5%) compared to 2018 (base year of the Strategy 2022), with comparable steel output. Specific emissions per tonne of steel were also reduced. Specific emissions display a planned decline towards the target of 18.0 kg/t of steel in 2023 with production output kept flat.

LIPETSK – ONE OF RUSSIA'S CLEANEST STEELMAKING CENTRES

Since 2014 the city of Lipetsk, which is home to NLMK Group's largest asset, has been officially recognized as the cleanest steelmaking city in Russia, according to data from Russia's Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet). Thanks to environmental protection measures implemented at the Lipetsk site, the Integrated Air Pollution Index (IAP) reduced almost ten-fold from 2000 to 2021.

BEACHES WITHOUT DUST

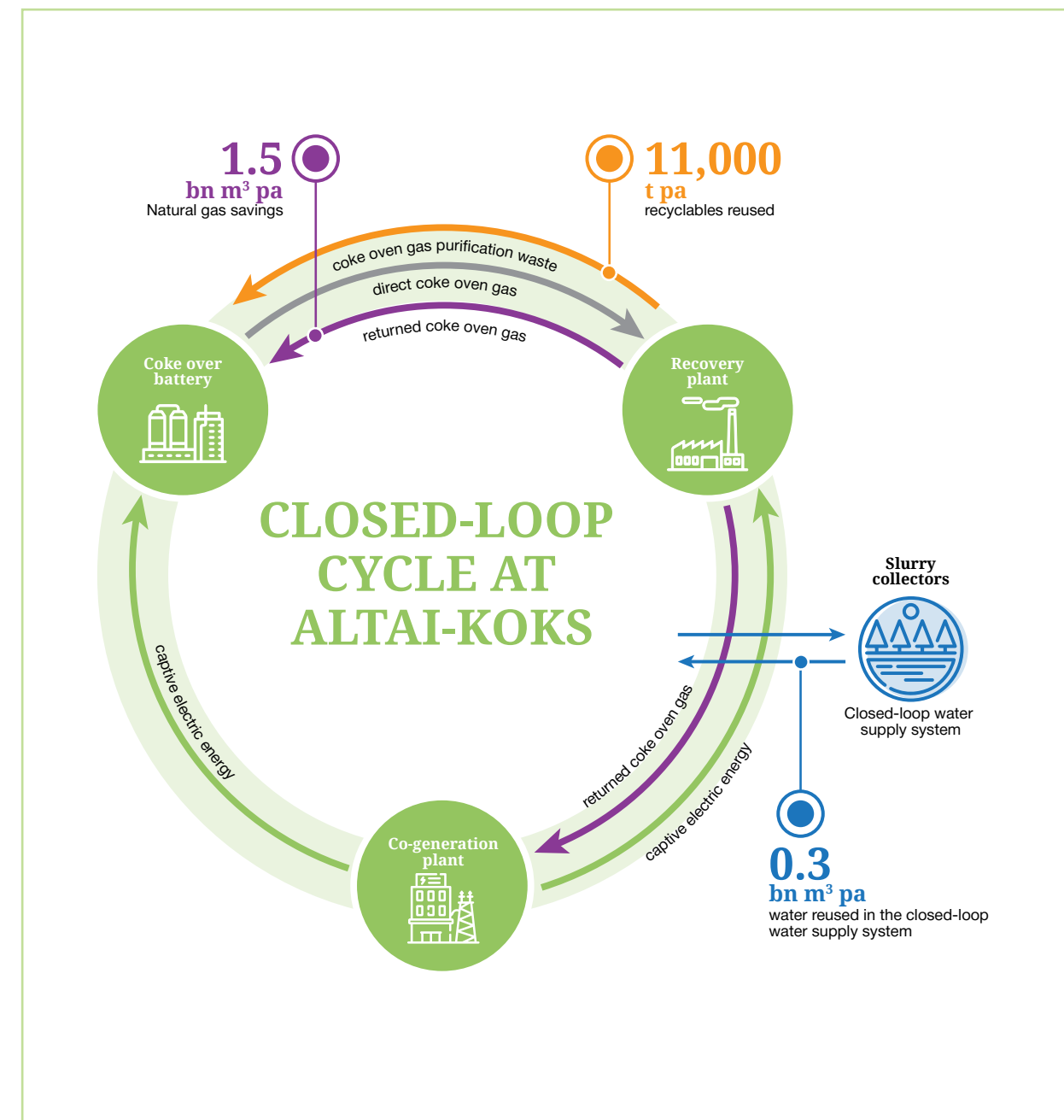
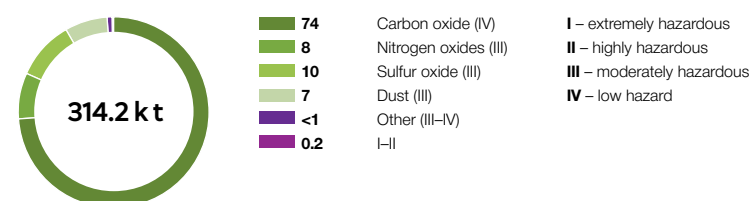
A project was implemented at Stoilensky, which made it possible to radically reduce the formation of dust on the dry beaches of the tailings. The new dust suppression system includes an adaptive water irrigation infrastructure and an innovative processing technology with a special component that suppresses the formation of dust even in windy conditions. Investments in the project amounted to RUB 150 million.

STABLE AIR QUALITY

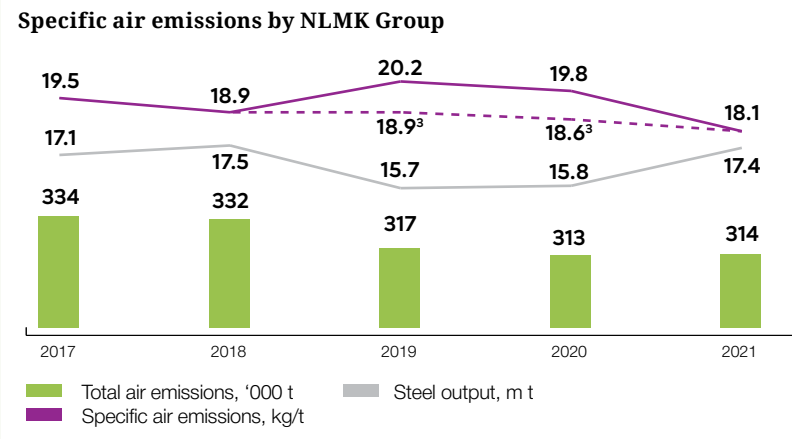
NLMK summed up the results of the annual environmental monitoring of the state of atmospheric air at the border of the sanitary protection zone of the site. Analysis of the data confirmed the low impact of production on the adjacent territories – 99.7% of all measurements showed that the content of substances in the air is below the maximum permissible concentrations, that is, it is safe for the population.

A total of 74% of NLMK Group's emissions consist of carbon monoxide, a low-hazard substance of hazard class IV, which is not regulated as a harmful substance in many countries, and cannot harm human health, since it comes from high pipes, lighter than air, and is dispersed without forming high concentrations in the surface layers of the atmosphere. At the same time, substances of hazard classes I-II account for only 0.2% of the Group's gross emissions.

NLMK Group's emissions by hazard class, %



NLMK Group is developing non-standard and innovative solutions to meet environmental challenges. For example, in 2021, pilot tests of a blast-furnace slag dry crystallization unit using an innovative waterless cooling technology were carried out at the Lipetsk site. The technology allows not only to reduce the release of hydrogen sulphide in comparison with water cooling of the slag, but also to obtain new products. In 2022, NLMK plans to continue testing this technology on BOF slag.



PURIFIED GAS FERTILIZER

In 2021, NLMK began supplying a new type of nitrogen fertilizer, granular ammonium sulfate, which is a by-product of coke oven gas treatment.

NLMK is the only producer of ammonium sulfate in the Central Black Earth region. It is produced at the new coke oven gas capture and purification complex, which was put into operation in 2019. The best available technologies enable returning 100% of ammonium sulfate dust into the process, as well as significantly reducing the emissions of hydrogen sulphide – by 31%, phenol – by 71%, ammonia – by 79%, naphthalene – by 23%.

Emission reduction projects

Emission reduction projects completed under the Environmental Programme in 2019–2021

Site	Event	Ecological effect
Lipetsk site	Revamping of de-dusting systems, replacement of air heaters and technical re-equipment of blast-furnace slag granulation plants during the BF-6 overhaul	Reducing H ₂ S, SO ₂ , dust and CO emissions, elimination of visible emissions Achieving a purification rate of 99.9%, recovering 100% of the captured dust Total effect is 5,663 tonnes per year
	Revamping of de-dusting systems during the BF-4 overhaul	Reducing dust emissions, eliminating visible emissions Achieving a purification rate of 99.9%, recovering 100% of the captured dust Total effect is 234 tonnes per year
	Revamping of the off-gas ducts of BOFs No. 2 and No. 3, construction of a system for cleaning fugitive emissions in BOF Shop No. 2	Reducing dust and CO emissions, eliminating visible emissions Achieving a purification rate of 99.9%, recovering 100% of the captured dust Total effect is 3,096 tonnes per year
	Revamping of the aspiration-technological unit (ATU-24) in the refractory shop	Reducing dust emissions at the site by more than 90% Increasing productivity of the aspiration system by 20% – up to 240,000 m ³ /hour Total effect is 64 tonnes per year
	Revamping of capture departments with integration of coke oven gas flows of coke oven batteries	Reducing phenol emissions by 66% and H ₂ S by 31% at the site
	Construction of a new waterless cooling section for the entire slag generated in BF Shop No. 1	Switching to waterless slag cooling, reducing H ₂ S emissions The overall effect is a 3.5-fold reduction in hydrogen sulphide emissions at the site
	Revamping of the BF-3 casthouse de-dusting unit	Reducing dust emissions by 60% at the source Effect – 200 tonnes per year
	Revamping of the aspiration system for capturing fugitive emissions of mixer No. 2, BOF Shop No. 1	Reducing dust emissions by 80% at the source Effect – 100 tonnes per year
Stoilensky	Technical re-equipment of the technological aspiration unit ATU-1 of the crushing and screening section at the beneficiation plant	The possibility of additional capture of 700 tonnes of dust has been implemented. The risk of exceeding the maximum allowable emissions at the source has been eliminated, the concentration of dust at workplaces has been reduced four times The degree of purification of emissions increased from 35 to 96%

Volume of significant air emissions by NLMK Group by substance type GRI 305-7

Indicator	2017	2018	2019	2020	2021
Total, NLMK Group, '000 t	333.8	331.5	317.0	313.3	314.2
• per unit of production, kg/t	20.5	19.8	18.9 ¹ (20.2)	18.6 ¹ (19.8)	18.1
NO _x emissions, '000 t	27.1	27.2	26.2	26.1	26.3
• per unit of production, kg/t	1.6	1.6	1.7	1.7	1.5
SO ₂ emissions, '000 t	31.8	31.7	29.5	31.0	30.6
• per unit of production, kg/t	1.9	1.8	1.9	2.0	1.8
Dust emissions, '000 t	25.7	24.4	22.5	23.0	20.7
• per unit of production, kg/t	1.5	1.4	1.4	1.4	1.2
CO emissions, '000 t	245.9	244.8	235.3	230.1	233.6
• per unit of production, kg/t	14.4	14.0	15.0	14.5	13.4
Volatile organic compounds, '000 t	2.6	2.7	2.8	2.6	2.6
Hazard class I substances ² , t	1.2	1.3	1.2	1.2	1.1
• per unit of production ² , g/t	0.07	0.08	0.08	0.08	0.07
Hazard class II substances ² , t	552	547	514	480	490
• per unit of production ² , g/t	0.03	0.03	0.03	0.03	0.03
NLMK Lipetsk					
• CO, per unit of production, kg/t	16.5	16.3	17.7	16.0 ¹ (16.8)	15.7
• NO _x , per unit of production, kg/t	1.2	1.2	1.3	1.2 ¹ (1.3)	1.2
• SO _x , per unit of production, kg/t	1.6	1.7	1.7	1.7 ¹ (1.7)	1.5

Note: Specific indicators for NLMK Group are calculated based on NLMK Group steel output volumes, taking into account NBH, for NLMK Lipetsk – based on its output volumes for the reporting period.

¹ Without the impact of temporary factors associated with a decrease in production.

² Russian companies.

³ Specific emissions w/o the impact of temporary decline in production output at NLMK EAF assets and NLMK Lipetsk amid overhauls of blast furnace and steelmaking operations.

NLMK CONTINUES UPGRADES OF ENVIRONMENTAL PROTECTION EQUIPMENT

NLMK is completing a large-scale reconstruction of the exhaust systems in the Blast Furnace No. 3 casthouse and in the mixing unit in BOF Shop No. 1. The project will reduce dust emissions by 350 t.

AIR PURIFICATION SYSTEMS REPLACED AT STOILENSKY

In 2021, Stoilensky launched a major project to modernize the aspiration system in the medium and fine crushing building of the beneficiation plant. The commissioning works are scheduled to compete in Q1 2022. The implementation of the project will significantly reduce the concentration of dust in the air of the working area and halve the gross emission of dust into the atmosphere. Total investment in the project exceeds RUB 600 million.

The replacement of the aspiration system at the crushing and sorting site of the concentrating plant is also continuing. The phased replacement of the air purification system will improve the condition of workplaces, reduce dust emissions by six times and allow the introduction of the best available technologies. Total investment in the project exceeds RUB 200 million.

Long-term programmes for biodiversity recovery

NLMK Group aims to manage biodiversity matters based on best industry practices and recommendations of reputable international organizations, such as, among others, IUCN (International Union for Conservation of Nature and Natural Resources); TNFD (Taskforce on Nature-related Financial Disclosures); WWF (World Wild Fund for Nature); SBTN (Science-based targets for nature). The approach to target setting is based on preliminary assessment of the current state and baseline biodiversity indicators at the company's territory to prepare measurable and relevant metrics for biodiversity management and progress assessment. In 2021, the company began to develop its strategy and programme for biodiversity

conservation using a hierarchy of mitigation measures, reaching first a No Net Loss, and then a Net Positive Impact on biodiversity for all Group companies using the Prevent – Reduce – Recover – Compensate principle.

NLMK Group's Environmental Programme 2023 already features overall targets and metrics with a direct or indirect impact on biodiversity:

- NLMK Group's CO₂ emission reduction programme (reducing specific emissions, t/t of steel)

- Reducing air impact with individual substances (CO, NO_x, SO_x, dust, Class I and II substances, kg/t of steel)
- Reducing impact on water resources (specific water discharge, m³/t of steel)
- Reducing pollutant discharge into water bodies ('000 t)
- Increasing usage of overburden, tailings, and iron-containing wastes (share of overburden and tailings utilization, recycling of secondary iron-containing raw materials, %)

Ecosystem development

In 2021, NLMK Group assessed its impact¹ on biodiversity in line with the stages stipulated in the Natural Capital Protocol² and its auxiliary document, Integrating Biodiversity into Natural Capital Assessments. This enabled the company to make decisions more effectively and to manage risks. The assessment showed that the company's operations have no direct significant impact on biodiversity. **GRI 304-2**

The company's measures are structured in line with the universally accepted AR³T approach (Avoid, Reduce, Restore & Regenerate, Transform) to setting science-based biodiversity conservation targets. This approach is described in the Science Based Targets for Nature³ guidance. The structure of the AR³T approach covers measures for preventing potential impact, reducing current impact, regenerating and recovering ecosystems, and transforming the ecosystems that companies operate in.

In line with AR³T, managing the human impact of Group companies on biodiversity is mainly linked to measures aimed at restricting and reducing their footprint. The main biodiversity efforts are aimed at reducing any existing impact and taking offset

measures in line with legislation. The measures that the Group undertakes to recover disturbed territories are sufficient according to Russian legislation.

NLMK Group conducts operations on industrial lands and residential areas in line with applicable law. Group assets do not operate in environmentally protected land or on land with a high biodiversity value. The company's activities do not pose any threat to animal or plant species registered on the IUCN Red List or in the Russian Red Book, or to species threatened with extinction. **GRI 304-1** **GRI 304-4** With a view to preserve biodiversity on the territory of the Group companies, it is prohibited to destroy or damage greenery, build fires, hunt, and fish. These requirements are the same for both personnel and employees of contracting organizations. All water withdrawal inlets are equipped with fish protection devices. The sites' location does not prevent the movement of migratory birds and animals.

NLMK Group has organized a comprehensive assessment of possible involvement in biodiversity conservation projects. Such programme actions have been developed at NLMK Group's Russian companies.

The company acknowledges the importance of deforestation issues. NLMK Group has a deforestation policy in place: if a tree is cut down, two new ones must be planted in its stead.



The Group regularly implements measures that aim to rehabilitate land affected by the operations of its extractive companies. The treatment of deposit sites includes phased rehabilitation work to restore the landscape and its plant cover and to enable plants to grow again in the soil. **GRI 304-3** Reclamation programmes have been developed and are publicly available on the websites of the Group's mining companies. The programmes are being implemented as planned. In 2021, rehabilitation was carried out on 49 hectares of disturbed land.

Area occupied by Group companies and reclaimed land, ha **GRI 304-3**

Indicator	2019	2020	2021
Area ¹	11,973	11,971	11,959
Land rehabilitated	15	10	46

Company	Action	Environmental effect	Costs, RUB '000
Stoilensky	Research work and environmental monitoring of the impact of Stoilensky's industrial operations on biodiversity	Cataloguing the biological diversity of flora and fauna Making a list of rare and protected species in order to preserve populations	850
NLMK Lipetsk	Replenishing bird populations	Natural bioindicator of good environmental conditions Preserving Red Book bird species	13,180
Altai-Koks	Releasing 11,218 juvenile carp into the Ob river. Repairing the fish protection devices at the bank water intake	Replenishing aquatic biological resources Minimizing harm to aquatic biological resources	280 140
NLMK Lipetsk Dolomit VIZ-Steel	Technical and biological recultivation	Recovering 49 ha of land disturbed by mining operations	2,015
NLMK Lipetsk Stoilensky Altai-Koks Dolomit	Reforestation	Planting 27,000 trees and shrubs Caring for 18,500 ha of planted forests three times a year Landscaping 26,000 m ² of territory	54,080
Total			70,545

¹ The assessment was made for the Group's Russian companies.

² Natural Capital Protocol is a system that supports decision-making and allows organizations to determine, measure, and assess their direct and indirect impact, as well as their level of dependency on natural capital.

³ <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2020/11/Science-Based-Targets-for-Nature-Initial-Guidance-for-Business.pdf>.

¹ The data has been adjusted in comparison with the Annual Report 2020.

Cooperation with stakeholders

SWAN LAKE ENVIRONMENTAL PARK: A NATURAL INDICATOR OF NLMK'S COMMITMENT TO A CLEAN ENVIRONMENT AND BIODIVERSITY

Swan Lake Environmental Park was created by NLMK employees in 1978. It is the only bioindicator in Russia and the former Soviet Union that is situated on the territory of an industrial site. The environmental park occupies more than 5 hectares of land situated between the BOF shops of the Lipetsk site. The lake is filled with process water from the Lipetsk site that has undergone treatment following its use in production. The park is inhabited by 550 birds of 52 species, including five species from the Russian Red Book and the Lipetsk Region Red Book. Every year, up to 200 waterfowl from the urban surroundings flock here for the winter. All birds are fed here according to the diet of the Moscow Zoo, there are enough provisions for both local and guest birds. The lake is also inhabited by fish, which helps ensure that the waterfowl have a natural diet. Many bird species can only live in natural or near-wildlife conditions. The quality of the environment in the park allows these picky and demanding birds to enjoy long lives and reproduce regularly.

In 2021, populations in the park have been replenished. Birds of 22 species have moved to Swan Lake from the Penza and Lipetsk zoos, Vorob'i (Sparrows) and Malinki (Raspberries) bird parks from the Rostov and Kaluga regions, respectively.

BREEDING CENTRE FOR RARE CRANE SPECIES IN THE OKA NATURE RESERVE

NLMK cooperates annually with a breeding centre for rare crane species as part of the Eurasian Regional Association of Zoos and Aquariums' programme for the conservation of cranes in Eurasia. The Conservation of Cranes of Eurasia programme involves determining the sex of all cranes kept in captivity and drawing up a genetic ID for each captive bird. In addition, genetic studies of cranes in Russia are being conducted in order to identify subspecies and genetic features of individual populations that will help both breeding in captivity and reintroduction into nature. Cranes from the Russian Red Book live in the Swan Lake Environmental Park.

STOILENSKY CONTINUES RESEARCH AND MONITORING OF BIODIVERSITY JOINTLY WITH BELOGORYE NATURE RESERVE

In relative proximity to the production site of Stoilensky lies Yamskaya Steppe, one of the sections of the Belogorye Nature Reserve. This reserve is one of the smallest and oldest protected natural territories in Russia. It was founded in 1999 based on the Les Na Vorskle reserve, which existed since 1924. The objective was to preserve and study the typical and unique ecosystems of the Cretaceous South in the Central Russian Upland. Yamskaya Steppe covers a surface area of 566 ha, and the width of its preservation zone is 1 km. It is located 12 km to the South-West of Gubkino. The section of meadow steppe is located near the watershed of the small Chufichka and Dubenka rivers, which belong to the Oskol River basin.

Since 2020, NLMK has been carrying out biodiversity activities and monitoring based on contracts with the reserve. In 2021, the two parties continued joint research work and environmental monitoring of the impact of Stoilensky's industrial operations on biodiversity:

- Developing methodological frameworks for environmental monitoring of the impact on the reserve's condition
- Continuing the inventory of biological diversity, including in the nature reserve
- Assessing the condition of rare and endangered species of plants and animals in the nature reserve and adjacent territories
- Validating the monitoring methods and air quality evaluation in the Yamskaya Steppe nature reserve
- Characterizing the condition of surface water quality in the Chufichka River basin

NLMK LIPETSK RENEWS ITS PLANTED GREENERY

The greenery at the site was renewed as part of a territory landscaping programme.

With a view to maintain an environmentally efficient green barrier, almost 2,500 trees and about 12,000 shrubs were planted on the industrial site and along the internal roads, and about 25,000 square meters of lawns and flowerbeds were arranged and renovated. The territory of the site was decorated with new seedlings of poplar, fir tree, maple, and linden, as well as spirea and cotoneaster bushes.

The works are carried out as part of a 5-year programme created with the Voronezh State University of Forestry and Technologies for the inventory and replenishment of the plant's greenery. In 2019–2021, the condition of trees and shrubs was examined on a surface area of 41.7 hectares. The inventory results provide reliable information about the condition of the plants, any trees in emergency condition, the state of the soils, and the most suitable types of trees and shrubs to plant.

In 2019–2021, 167,000 trees were planted at NLMK Group's production sites.

NLMK GROUP COMPANIES OFFSET FISH STOCKS

Every year NLMK works to release juvenile fish into water bodies in order to replenish fish stocks. The incubation and release of the fish is carried out by specialized organizations as part of contractual relations.

In 2020, the Altai-Koks environmental team began a six-year programme to release juvenile fish into one of the water bodies of the Verkhneobsky basin. As part of this programme, the company plans to release more than 100,000 juvenile carp into the rivers. In 2021, over 11,000 juvenile carp have been released into the Ob River, bringing the total number since the beginning of the programme to 38,000.

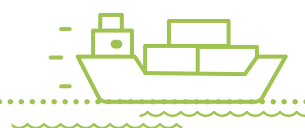
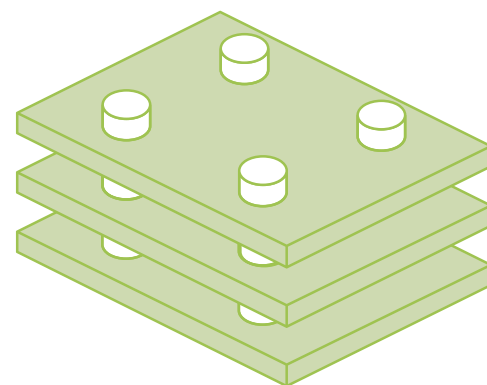
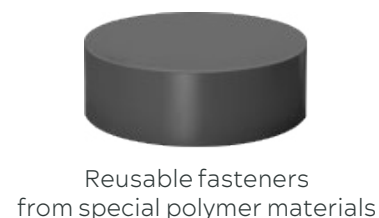
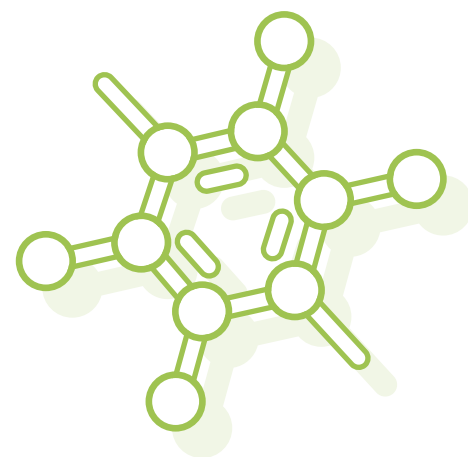
Plans for 2022 and the medium term

NLMK's biodiversity preservation programme for 2022 includes such measures as planting tree seedlings on a surface area of 6.7 hectares, caring for the planted forests at Group

sites, releasing over 10,000 juvenile fish at Stoilensky and Altai-Koks to replenish aquatic biological resources, and continuing biodiversity research and monitoring jointly with natural reserves.

POLYMER AGAINST DEFORESTATION

NLMK Group has introduced the use of polymer materials instead of timber for the transportation of steel semis, for the first time in the history of international commercial shipping. The new transportation scheme saves more than RUB 100 million annually. The new transportation scheme is now being used on the Kaliningrad – Frederiksværk (Denmark) route. The scheme will be scaled up within the NLMK Group supply chain.



Kaliningrad (Russia)

Previously, timber was used as lining when transporting metal by sea. Every year, close to 13,000 m³ of timber, or almost three railway trains, would be used for this purpose. In the new scheme, timber is replaced with reusable fasteners made from special polymer materials.

Now, 20 times less timber is required for shipping a batch of metal. At the same time, there is no need to recycle used timber, whereas demand for recycling household plastic waste into polymer material is incentivized.

Fifty thousand 1.5-litre plastic bottles are needed to produce new polymer fasteners for transporting a 5,000-tonne batch of slabs. The new fasteners are easy to use, accelerating the process of loading steel semis onto a ship.



20 times
less timber
is required for shipping
a batch of metal



50,000
1.5-litre plastic
bottles
reused as feedstock



Frederiksværk (Denmark)



>RUB 100
million saved
annually
with the new transportation scheme