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Climate change

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Energy efficiency

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Environmental
Protection

Environment

**Driving energy
transition**

Climate change

Material topics

- Climate change
- Air emissions

Key events in 2023

- Strategic target for specific emissions per tonne of steel (1.91 t) was achieved
- A climate strategy was developed and approved for NLMK Europe; an action plan to reduce emissions was approved with targets (Scope 1+2) to reduce specific emissions by 30% by 2030 compared to the baseline year of 2021
- Low-carbon electric energy purchases made it possible to bring Scope 2 emissions (market-based method) to zero at NLMK Group's Russian sites
- Independent verification of slab and GO steel cradle-to-gate footprint was carried out
- Reports were prepared in accordance with the EU's Carbon Border Adjustment Mechanism (CBAM) for the first time

Global sustainable development goals



Principles of the UN Global Compact

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.

Contribution to the achievement of national sustainable development goals and national projects

The Climate Doctrine of the Russian Federation was adopted pursuant to Decree of the President of the Russian Federation No.812 dated 26 October 2023. The Doctrine is a set of views on the purpose, principles, content, and ways of implementing the unified state policy of the Russian Federation on issues related to climate change and its consequences. The key goal of the new climate policy is to achieve a balance between emissions and their absorption by 2060. NLMK activities comply with the approved doctrine.

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 substantially reduce their climate impact.

Emissions avoided with NLMK's products are comparable to emission volumes from the entire steelmaking operations of the Group

In 2023, the percentage of recycled content in the steel produced by NLMK Group almost reached 20%; apart from ferrous scrap, sources of recycled materials included recyclable iron-containing sludge, dust and scale⁴. Specific CO₂ emissions from scrap steelmaking are approximately four times lower than when using primary raw materials.

In 2024, NLMK Group published its fourth report in line with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD)⁵ updated in 2021.

Managing climate change-related issues

[TCFD Governance] [GRI 3-3]

The Company's leadership devotes continued attention to climate-related issues, which are embedded into its corporate governance system.

The agenda of the Board of Directors meetings includes such issues as the decarbonization strategy, climate projects, climate risks, methodology, benchmarking, and progress towards achieving the goals. The Board of Directors Strategic Planning Committee determines climate impact reduction goals.

[TCFD Governance a)] [GRI 2-12]

Goals related to climate impact reduction are assigned by the CEO (Chair of the Management Board) to managers of the Group's functions and

divisions, as well as heads of production units at NLMK Group companies. The Company evaluates progress towards achieving the goals annually.

[TCFD Governance b)] [GRI 2-13]

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 its business goals and monitoring the implementation and efficiency of major investments.

For more information on climate-related issues, please visit the [Company website](#).

Key figures for 2023

1.74 t of CO₂

per tonne of steel (Scope 1 + 2)¹

-77 kg

of solid fuel/t of pig iron through activities undertaken since 2010³

-2.9 m t of CO₂

in 2023 through projects implemented since 2018 (Scope 1 + 2) and purchase of low-carbon energy²

-511 m t of CO₂

in avoided emissions for the entire lifecycle of NLMK products sold in 2018-2023

¹ Market-based method including NLMK Long Products companies.

² Including NLMK Long Products companies.

³ End-to-end consumption of coal and petroleum coke, including coke, sinter, and pig iron production.

⁴ Internal scrap of steel furnaces and screenings of sinter and pellets are not taken into account in accordance with ISO 14021:2016 and EN 45557:2020.

⁵ The Task Force on Climate-Related Financial Disclosures (TCFD) was established in December 2015 by the Financial Stability Board (FSB), an international body created by the G20 states. In October 2021, the TCFD published its [revised recommendations](#), which set out the basic principles of climate-related disclosures for companies and organizations. In 2023, the Financial Stability Board announced that the work of the Task Force For Climate-Related Financial Disclosures had fulfilled its remit and disbanded. It was expected to be replaced by another body: the IFRS Foundation. The TCFD website is no longer updated, but its resources will remain available. NLMK Group has decided to publish the report for 2023 in the same format.

Adaptation to climate change

Russia was ranked 30th among 185 countries by the Notre Dame Global Adaptation Initiative (ND-GAIN) Index Country Rankings. The country's profile says "Adaptation challenges still exist, but the Russian Federation is well positioned to adapt."

Earlier assessments of climate change-related physical risks have determined that NLMK Group sites' exposure to such risks is low. In general, the level of adaptation risks faced by the Group is low. An in-depth analysis of physical risks for Stoilensky has been translated into the following recommendations for adapting the site to adverse weather and climate conditions:



Employee adaptation:

- Develop a special schedule for hot weather conditions
- Provide shade
- Provide drinking water and electrolyte beverages
- Encourage the use of personal protection from heat

Equipment adaptation:

- Increase research spending to improve engine and equipment performance in hot weather conditions
- Develop a special schedule for hot weather conditions

Adaptation to more frequent extreme weather events:

- Improve the leakproofness of shop roofs

Climate impact reduction strategy

The CO₂ reduction potential for BF-BOF steelmaking is limited to 5–15% of the current levels (excluding carbon capture, utilization, and storage). More significant reductions can be achieved through transition from coal to "green" hydrogen and switching to the HBI+EAF process (hot-briquetted iron + electric arc furnace).

In 2021, NLMK Group adopted its Climate Programme that envisages a phased transition to the electric arc method of steel production based on DRI/HBI as feedstock (coke-free iron ore with a high iron content). Even with the current energy consumption structure (that includes natural gas), 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 industrialized technologies of hydrogen-based reduction become available, the decarbonization potential of the process should exceed 90% (vs. the current levels). In light of the current restrictions on access to HBI technologies, the timeline of the programme will be determined at a later date. In 2023, the Company continued to pursue research in carbon capture, utilization, and storage, as well as in use of biofuel and electric power generation based on renewable energy sources.

In 2023, projects to increase the iron content in concentrate implemented earlier at Stoilensky produced tangible results, enabling an annual reduction of CO₂ emissions of up to 800,000 tonnes. Other investment projects and operational improvements implemented within the current strategic cycle are contributing to the reduction of specific CO₂ emissions as well.

In 2023, NLMK Lipetsk carried out the following projects: separate flux dosing², improvement of the steam-supply cycle in coke and chemical operations by switching to secondary energy resources, and energy-saving lining of lime kilns. In addition, the boiler room of the Parus health resort switched from fuel oil to natural gas. These measures will help reduce direct CO₂ emissions by 100,000 tonnes per year. Furthermore, the Company pursues other projects, including the construction of a new power plant for recovery of by-product fuel gases. Commissioning of the recovery cogeneration plant will reduce CO₂ emissions by 650,000 tonnes per year (or by 35 kg of CO₂ per tonne of steel).

¹ 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.

² Sintering process optimization through separate feeding of lime and dolomite (fluxes) with accurate dosing.

In March 2023, NLMK Pennsylvania launched a new reheating furnace for slabs. The new furnace will deliver natural gas savings of up to 30%.

In 2023, NLMK Europe developed and approved a climate strategy along with an action plan (operational and investment actions) to reduce specific emissions with a focus on improving energy efficiency (optimizing equipment operation, reducing electric power and natural gas consumption, transition to induction heating, and increasing the share of renewable energy sources in the division's consumption). Mid-term targets for reduction of specific emissions of the division were set (the target level for 2030 is 0.15 t of CO₂/t of rolled products or –30% to the baseline year of 2021).

Long-term CO₂ reduction goals

NLMK Group's long-term decarbonization strategy assumes the replacement of the Blast Furnace-Basic Oxygen Furnace steel production process with low-carbon technologies. A phase-in process will be timed to blast furnace overhaul schedules and other technology constraints.

NLMK Group has set long-term goals to reduce specific emissions (Scope 1+2) to 1.2 t of CO₂/t of steel (–40% of the current intensity) by 2050 with a full transition to HBI+EAF using the Group's captive iron ore, as well as procurement of natural gas and electricity at current levels of carbon intensity.

1.2 t CO₂ / t steel

NLMK Group's long-term goal to reduce specific emissions (Scope 1 + 2) by 2050.

¹ Of the 5.84 billion kWh of procured low-carbon energy, NLMK Long sites accounted for 1.29 billion kWh. The reduction of Scope 2 emission without NLMK Long sites stands at 1.45 t of CO₂.

When the industrialized hydrogen-based iron reduction technologies come along and sufficient amounts of low-carbon electricity become available, the new process chain will reduce the Group's carbon intensity to 0.2 t of CO₂/t of steel (a 90% reduction vs. the current level). The remaining emissions can be reduced to zero through CO₂ capture projects or offset by absorption projects.

Thus, NLMK Group aims to achieve carbon neutrality when the necessary external conditions allow it.

NLMK Group continues to advance its low-carbon energy consumption

[GRI 2-25]

Increasing the share of low-carbon energy sources is one of the Company's priority initiatives aimed at reducing its carbon footprint.

Nuclear energy is one of the main decarbonization tools, currently accounting for a third of global low-carbon electricity production. In 2023, the Russian sites' external electricity needs were almost fully met by nuclear energy.

The Company is also interested in renewable energy sources. In 2023, more than half of NLMK DanSteel's energy needs were satisfied by purchased wind power. The Company is planning to develop captive electric power generation based on solar energy.

In 2023, a total of 5.84 billion kWh of low-carbon electricity was supplied to NLMK Group, which enabled the Company to reduce Scope 2 emissions by 1.87 million tonnes of CO₂¹.

Metrics and targets

[TCFD Metrics and targets]

In 2023, the Company reported its greenhouse gas emissions in compliance with Russia's new legislative requirements and in line with CBAM for the first time.

Mandatory reporting has its limitations and differs from the voluntary disclosures on greenhouse gases provided in this Report. The Company's sites in Europe and the USA have been submitting mandatory annual GHG reports for many years.

In 2023, the organizational boundaries of the Company changed significantly in view of the sale of NLMK Russia Long Products assets. In accordance with the GHG Protocol Corporate Accounting and Reporting Standard, the 2018 baseline emissions and the emissions of the following years were recalculated without the emissions of the divested companies¹.

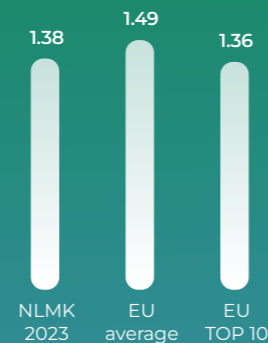
The methodological approaches and sources of data used to determine emissions are described [on the website of the Company](#). In 2023, there was a noticeable change in the approach to determining the electric power emission factors in the Russia. Now, they are determined based on the data of Trading System Administrator of Wholesale Electricity Market Transactions (TSA) for the 1st pricing zone of Russia², where all Russian assets of the Group consuming electric power from external grids operate.



CO₂ emission per tonne of pig iron under the EU ETS methodology

CO₂ emission per tonne of pig iron at NLMK Lipetsk in 2023, calculated in accordance with the EU methodology for emission allowance allocation, was 1.38 tonnes of CO₂ per tonne of steel. This is significantly better than the average level of emission by European steelmakers at 1.49 tonnes of CO₂ per tonne (as a comparison, 10% of European steelmaking companies with the lowest emissions emit 1.36 t of CO₂/t)³.

NLMK Group's CO₂ emission in line with EU ETS (Scope 1), t of CO₂/t of pig iron



¹ However, the achievement of previously set target indicators for NLMK Group for 2023 is monitored within the former organizational boundaries (see further).

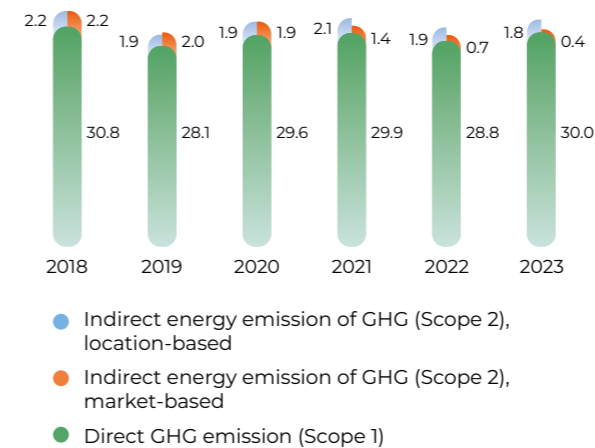
² <https://www.atsenergo.ru/results/co2all>.

³ According to Eurofer data.

Direct and indirect energy emissions of NLMK Group, '000 t of CO₂ equivalent [GRI 305-1] [GRI 305-2] [TCFD Metrics and targets b)]

Indicator	2018 ¹	2019	2020	2021	2022	2023
Direct GHG emissions (Scope 1)	30,772	28,145	29,558	29,932	28,818	29,969
Carbon dioxide (CO ₂)	30,701	28,078	29,489	29,863	28,752	29,902
including from stationary sources	30,526	27,893	29,310	29,675	28,573	29,730
Methane (CH ₄)	46	42	44	43	41	43
Nitrogen oxide (N ₂ O)	25	25	25	26	24	24
Indirect energy emissions (Scope 2) ² , location-based	2,155	1,930	1,866	2,051	1,861	1,785
Indirect energy emissions (Scope 2) ³ , market-based	2,193	1,969	1,909	1,359	743	384
Total (Scope 1 + Scope 2), location-based	32,927	30,074	31,424	31,983	30,679	31,754
including CO ₂ for stationary sources (location-based)	32,681	29,822	31,176	31,726	30,434	31,515
Total (Scope 1 + Scope 2), market-based	32,965	30,113	31,466	31,292	29,561	30,353
including CO ₂ for stationary sources (market-based)	32,719	29,861	31,218	31,034	29,315	30,114
CO ₂ emission from biomass combustion (Scope 1, for reference)	17	25	25	26	29	33

GHG emission trends (Scope 1 + Scope 2, location-based), m t of CO₂ equivalent [GRI 305-1] [GRI 305-2]



¹ The baseline year for all Scopes is the year when Strategy 2022 was launched.

² Emission of CO₂ 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, i.e. by the average weighted rates of greenhouse gas emissions produced in a certain territory (country, region, state).

³ Emission of CO₂ related to supplies of external electricity, including targeted procurement of all or a portion of external electricity based on free sales and purchase contracts and certificates.

⁴ Location-based for Scope 2.



Increased steel production (+7.9%) was a key driver of absolute emissions' growth compared to 2022 (+3.5%⁴)

Blast furnace operations (51%), energy production (14%), and iron ore production (11%) are the largest contributors to direct greenhouse gas emissions (Scope 1). The overall contribution of emissions from mobile units and emission of CH₄ and N₂O into NLMK Group's total direct GHG emissions is less than 1% in CO₂ equivalent.

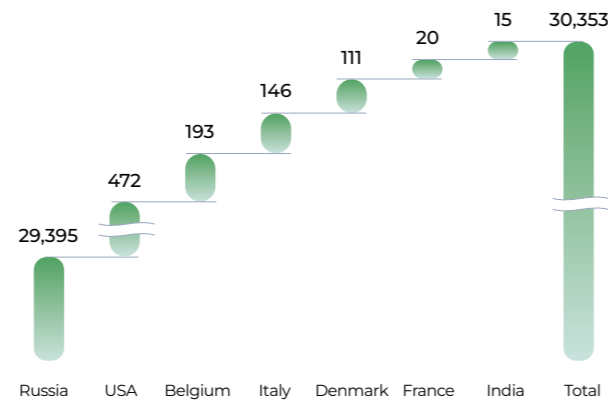
NLMK Group regularly estimates CO₂ emissions from the combustion of biomass (wood chips and charcoal) used at NLMK Lipetsk for ferroalloy production. These emissions are climate-neutral, provided for reference only, and not included in the total emission volume. In 2023, the use of biomass, including wood chips and charcoal, has increased to 10,400 tonnes. The Company is considering the feasibility of using sustainable biomass in its key steelmaking processes. The charcoal supplied to the Company is FSC certified¹, while wood chips are produced from in-house production waste. The Company has engaged an external contractor to leverage the opportunities for the manufacturing of biocoal from waste wood.

Direct GHG emissions (Scope 1) by source², % [GRI 305-1]



● Blast furnace operations	51.2
● Energy production	14.3
● Iron ore feedstock production	10.8
● BOF operations	7.8
● Coke production	5.5
● Lime production	5.1
● Steel rolling and finishing	4.0
● Mobile units	0.6
● EAF operations	0.3
● Other stationary sources	0.2
● Ferroalloy production	0.2

Total direct and indirect energy emissions of GHG by country in 2023 (Scope 1 + Scope 2, market-based), '000 t of CO₂ equivalent [GRI 305-1] [GRI 305-2]



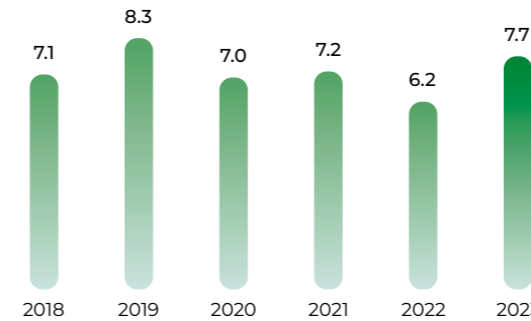
The Company continues to assess indirect greenhouse gas emissions associated with the production of the main types of external resources used by NLMK Group companies (upstream emissions) and their delivery to the companies' gates, as well as the transportation of raw materials and semi-finished products between the companies of the Group³. Estimated coverage is at least 95%. For purchased electricity, Scope 3 includes emissions associated with fuel production, processing and delivery, as well as electricity transmission losses. Scope 3 includes emissions of methane, nitrous oxide, and carbon dioxide.

The Company works with suppliers to obtain information about the carbon footprint associated with the purchased products. The calculations rely on specific CO₂ emission data for rail cargo transportation within Russia provided by the largest rail operator. The assessment of specific emissions from natural gas production and transportation within Russia is based on data provided by the largest gas market players.

Other indirect emissions in the preceding years were recalculated in view of the fact that the organizational boundaries of the Company had changed. Emission factors related to electric power, technical gases, metals and ferroalloys were also adjusted.

¹ Forest Stewardship Council.
² CO₂ emissions from the combustion of process gases (blast furnace and coke oven gas) outside the gas sources but within the Group's sites are assumed 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 "Production of energy resources" category includes emissions generated by production of heat, electricity, and technical gases.
³ This category does not include emissions associated with the semi-finished products manufactured within the Group, as they are already accounted for in Scopes 1 and 2. Also, this category excludes emissions associated with the delivery of products to customers.

Upstream GHG emissions (Scope 3), m t of CO₂ equivalent [GRI 305-3]



Purchased ferrous metals accounted for 32% of the calculated other indirect emissions, thus exceeding the share of emissions associated with coal (30%) for the first time.

In the market-based calculation, in 2023, Scope 2 specific emissions went down by 2% vs. 2022 and by 8% vs. the baseline of 2018. The reduction was driven by completed projects (see p. 36) and procurement of carbon-free energy by Russian sites.

🌱 NLMK Group continues to develop and implement projects aimed at GHG emission reduction (see p. 28)

Other indirect GHG emissions (Scope 3) in the upstream value chain by category, 2023, % [GRI 305-3]



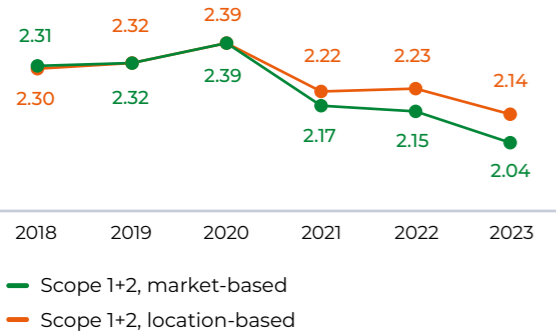
● Ferrous metals ²	32.2
● Hard coal	30.3
● Ferroalloys	6.9
● Natural gas	6.8
● Non-ferrous metals	6.2
● Railway transportation	5.0
● Petroleum coke	3.3
● Pellets and HBI	3.1
● Electric energy	2.3
● Marine transportation	0.9
● Fluxes and minerals	0.8
● Oil fuel	0.6
● Motor transportation	0.5
● Process gases	0.5
● Coal coke	0.3
● Carbon materials	0.2
● Ore and concentrate	0.1

Specific CO₂ emissions from stationary sources¹, t of CO₂ equivalent / t of steel [GRI 305-4]

Indicator	2018	2019	2020	2021	2022	2023
Specific direct emissions (Scope 1)	2.15	2.17	2.24	2.08	2.09	2.02
Specific indirect energy emissions (Scope 2, location-based)	0.15	0.15	0.14	0.14	0.14	0.12
Specific indirect energy emissions (Scope 2, market-based)	0.15	0.15	0.15	0.10	0.05	0.03
Specific total emissions (Scope 1 + Scope 2, location-based)	2.30	2.32	2.39	2.22	2.23	2.14
Specific total emissions (Scope 1 + Scope 2, market-based)	2.31	2.32	2.39	2.17	2.15	2.04

¹ In line with the corporate approach to determining CO₂ emission targets: CO₂ only, stationary sources only.
² This category mainly includes third-party semi-finished steel products used by NLMK companies for processing into finished steel.

Specific CO₂ emissions (Scope 1 + Scope 2, location and market-based) from stationary sources, t/t of steel [GRI 305-4]



NLMK Group reduces climate footprint by using hydrogen-containing secondary resources

[GRI 2-25]

NLMK Group uses by-product gases from steelmaking operations as fuel for power generation or as a direct energy source for core process equipment. This approach helped reduce the consumption of fossil fuels and GHG emissions by 5 million tonnes of CO₂ per year.

Some of the blast furnace gas is fed into top pressure recovery turbines that generate additional power without any fuel combustion. The total captive power generation covers two-thirds of NLMK Lipetsk's electricity needs.

By-product fuel gases also contain pure hydrogen – from 7% in the blast furnace gas to 60% in the coke oven gas. Hydrogen utilization further reduces the consumption of carbon-based fossil fuels. In 2023, NLMK Group consumed 19.5 billion m³ of blast furnace and coke oven gas, which contained approximately 2.6 billion m³ of hydrogen.

Consistent efforts are made to reduce the Company's environmental footprint.

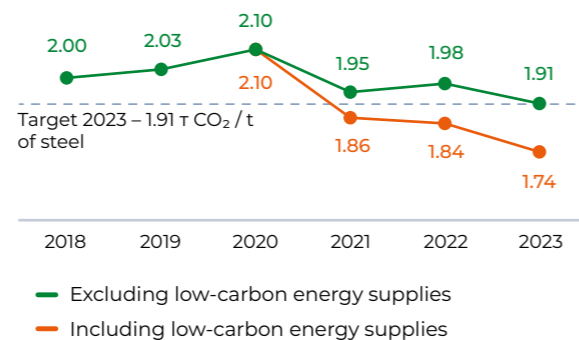
From 2010 to 2023, emissions of CO₂ per tonne of steel went down by 17% across the Group and by 16% at NLMK's flagship production site in Lipetsk.

This was driven by improvements in operational efficiency and implementation of a series of investment projects. End-to-end consumption of solid fuels (coal and petroleum coke) per tonne of pig iron went down by 77 kg, natural gas consumption went down by 22 m³, and external power consumption decreased by 31 kWh.

In 2023, target specific CO₂ emission per tonne of steel (Scope 1 + Scope 2) calculated within the previous organizational boundaries (i.e. including NLMK Russia Long companies) and not adjusted for the change of the external emission factor for electric energy was 1.91 t/t vs. 2.00 t/t of the 2018 baseline (a 4.5% decrease).

Actual specific CO₂ emission in 2023 calculated on the same basis amounted to 1.91 t of CO₂/t of steel or 1.74 t of CO₂/t of steel, if the procured low-carbon power is factored in. **Therefore, the 2023 target per tonne of steel was achieved.**

NLMK Group's specific CO₂ emissions (Scope 1+2), including NLMK Russia Long Products sites, t of CO₂/t of steel



Total reduction of CO₂ emissions by projects contributing to NLMK Group's strategic target through 2023 [GRI 305-5]

Reduction of GHG emissions:	Scope 1	Scope 2	Scope 3	Scope 1+2	Scope 1+2+3
In absolute terms, '000 t of CO ₂ equivalent	-817	-90	-375	-908	-1,283
Specific, kg of CO ₂ equivalent / t of steel	-46.3	-5.1	-21.3	-51.4	-72.7

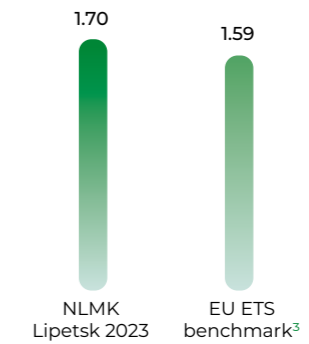
NLMK Group continues to develop and implement projects aimed at reducing the emission of greenhouse gases. These rely on proven measures to improve energy efficiency and reduce fuel consumption by process equipment, as well as on some innovative solutions, including the use of carbon resources and biofuels in blast furnace operations and innovative carbon capture, utilisation and storage technologies.

Key achievements in reducing CO₂ emissions in 2023 came through the projects implemented in 2019-2022. In 2023, the Company implemented a number of additional projects to ensure a significant reduction of CO₂ emissions (Scope 1 and Scope 2), such as energy efficiency improvement projects.

The impact of the projects was evaluated on the basis of technical effects achieved over the time period in question compared to a business-as-usual scenario (baseline). A custom model was applied to projects that affect sintering and ironmaking operations. The model used an end-to-end calculation of resources consumed per tonne of pig iron across the entire value chain and accounted for the interdependencies among the projects. Separate calculations were made for projects in steelmaking and rolling operations and power generation. In the previous year, the Company began to include Scope 3 emissions in the evaluation process. In addition to CO₂ emissions, Scope 3 takes into account CH₄ emissions from coal and natural gas.

Specific direct emissions of CO₂ per tonne of steel at NLMK Lipetsk in 2023, calculated in line with the guidance¹ for the European Union Emissions Trading System (EU ETS) was 1.70 t of 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 7%.

NLMK Lipetsk CO₂ emissions according to the EU ETS (Scope 1), t of CO₂/t of steel



~ RUB 34 bn

or \$0.4 bn, total investment in CO₂ emission reduction projects completed by the end of 2023

¹ Commission Delegated Regulation (EU) 2019/331 of 19 December 2018 determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council.
² The EU ETS does not regulate BOF steel, but it includes benchmarks for coke, sinter, pig iron, lime, and dolomite. The provided data per tonne of steel are calculated based on specified consumption coefficients.
³ Assuming that the rates of coke and iron ore consumption are equal to those of NLMK in 2023.



Climate cooperation

NLMK Group participates in discussions of carbon regulation legislation.

In 2023, NLMK experts took part in the formulation of the indicative rates of specific GHG emission factors for the following Russian best available techniques reference documents: ITS 27-2023 "Downstream processing of ferrous metal products" and ITS 25-2023 "Iron ore mining and dressing". NLMK experts were engaged to develop a reference method for determining CO₂ emission indicators for the iron and steel industry. This method was incorporated into ITS 26-2022 "Production of pig iron, steel, and ferroalloys".

NLMK Group products facilitate the transition to a low-carbon economy

In 2022, NLMK Group updated the output volumes for products that contributed to the consumer-side CO₂ emission reduction as well as the estimate of the emission reduction effects. The estimate showed that supplying to consumers the target volumes of such products in 2018–2023 would allow them to avoid over 20 million tonnes of CO₂ emissions per year (which is comparable to the Group's total annual CO₂ emissions) and about 500 million tonnes for the entire product lifecycle (20–50 years).

Supply of heat and electric power by the Altai-Koks coke plant also drives down the CO₂ emissions from coal burning in the town of Zarinsk. The avoided emissions are estimated at 0.6 million tonnes of CO₂ per year.

Consumer-side CO₂ emissions avoided due to NLMK Group products sold within the strategic cycle of 2018–2023

Product	Sales, m t	Avoided CO ₂ emissions, m t of CO ₂	
		Annual	Throughout the product lifecycle
Thick plate for wind power installations	0.9	16.0	320
Non-grain oriented steel	1.4	6.0	181
Grain oriented steel	1.7	0.2	5
Flat steel	1.2	0.04	1
Wear-resistant and high-strength steel (Q&T & Q&P)	0.8	0.4	4
TOTAL	6.0	22.7	511

Assessment and verification of the product carbon footprint

In 2023, NLMK Group carried out an independent verification of the earlier estimates of the carbon footprint of slab and GO steel production at NLMK Lipetsk. The verification was based on the cradle-to-gate concept, that is, all the production processes from mining of the raw materials and fuel to final products leaving the factory gate were included.

Moreover, in 2023 an estimation of the carbon footprint of the core types of NLMK Europe products was prepared to be verified by a third party.

Plans for 2024 and the medium term

In 2024, the Company plans to continue developing and implementing projects that help reduce CO₂ emissions from the current processes as well as to take operations-level measures to reduce CO₂ emissions. NLMK Group will continue working on the development of its decarbonization strategy.

2024 will also see the launch of the second wave of NLMK Europe's climate programme projects designed to improve the energy efficiency of NLMK Europe operations (20% of the emission reduction target envisaged by the strategy) as well as a number of investment projects aimed at utilization of renewable energy sources and heat recovery (40% of the emission reduction target envisaged by the strategy).

The Group intends to engage with suppliers and clients to share information on the products' carbon footprint and decarbonisation targets, to continue the assessment and verification of its products' carbon footprint, and to participate in the CDP programme.

Assessment of climate risks and their impact on strategy

[TCFD Risk management] [GRI 201-2]

Risk management

Climate risk management is an integral part of NLMK Group's risk management system. Climate risks are identified and assessed based on qualitative and quantitative methods, including scenario analysis and modelling of risk materiality, probability, and velocity. Aggregate information about the climate risk profile and the related changes is disclosed in the NLMK Group Risk Radar.

🕒 see the Operational Control and Risk Management section for more detail

Every external factor is assessed in terms of the time horizon of its potential materialization. Three time horizons were identified: short-term (up to 2025), mid-term (2025–2030) and long-term (beyond 2030). It is expected that the technological transition risks will be relevant at all time horizons, and most risks will materialize in the long term, since the technology change in steelmaking will become substantial by the late 2020s. In addition, chronic and acute physical risks will develop in the long term. The same can be said for the most significant long-term opportunities since a more substantial increase in the low-carbon steel production will occur at that time frame.

Global climate change is associated not only with risks but with certain opportunities. In the context of the Company's operations, this means greater returns on investment in low-carbon iron making technologies (HBI), expansion and commercialization of carbon capture, utilisation and storage (CCUS) technologies, and opportunities to use carbon credits to finance low-carbon initiatives.

Internal carbon pricing

The Company uses internal carbon pricing to support the assessment and prioritization of climate projects, estimate costs associated with the introduction of the Carbon Border Adjustment Mechanism (CBAM), and manage climate risks. The internal carbon price is based on the projected allowance price under the EU ETS adjusted for the Company's share of exports to Europe.

Scenario analysis overview

The Company uses a variety of sources to assess the climate risks and opportunities¹. The following scenarios were selected for in-depth analysis: the *Middle of the Road* scenario (business-as-usual), the *Sustainable Development* scenario of the Paris Agreement (limiting global warming to well below 2°C), and the worst-case scenario (for physical risks only) – *Fossil-fueled Development*.

The first two scenarios were used to analyse the following transition risks at the 2022–2030 horizon:

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

🕒 For more information on major risks and opportunities associated with climate change, please visit the [Company website](#).

¹ Including the International Energy Agency (IEA), the International Institute for Applied Systems Analysis (IIASA), Shared Socioeconomic Pathways (SSP), the World Economic Forum, the World Resources Institute (WRI), and the Climate Impact Atlas of the Royal Netherlands Meteorological Institute (jointly with the CMIP5 project).

Energy efficiency

Material topics

- Energy

Key events in 2023

- The hourly consumption rate of blast furnace gas by NLMK Lipetsk power plants reached historical peaks
- NLMK Lipetsk oxygen losses are at their historical lows following the launch of a new recipient group
- NLMK completed the construction of the new RCGP power distribution system. The installation of the core and auxiliary process equipment (boilers, turbo generators, gas holders) continues
- The medium-term programme for reliability improvement of the core equipment at Altai-Koks' thermal power plant continued
- The Company continued with the project of revamping its BF-4 air stoves. The project is aimed in particular at improving the energy efficiency and reducing CO emissions from the air stove operations. The phased equipment modernization project will be completed by 2026
- The phased lighting upgrade programme at Group sites was continued. In 2023, ca. 18,000 light fixtures were replaced with energy-efficient LED alternatives

Key figures for 2023

367.8 PJ

-3.4% yoy

NLMK Group's total energy consumption in 2023

5.351 Gcal/t

-1.8% yoy

Specific energy intensity of steel production at NLMK Lipetsk



Approach to energy management

[GRI 3-3]

Metallurgy is an energy-intensive industry. NLMK Group continues its systematic efforts to increase the energy efficiency of its production activities, seeking and introducing comprehensive solutions to improve its energy efficiency and sales reliability in order to reduce costs and minimize its environmental footprint.

The Company has adopted a group-wide Integrated [Management System Policy \(IMS Policy\)](#). This policy in particular sets forth the vision, goals, principles, and management commitments related to the improvement of the energy efficiency.

NLMK Group aims to be a leader in adopting best practices to increase the energy efficiency of the Company's operations and to bring the specific energy consumption and production costs as far down as is technologically and economically feasible.

The main principles of the IMS Policy require reduction of the resource-intensity of the Company's operations using the following approaches:

- Reducing specific consumption of natural raw materials, water, fuel and energy
- Increasing production efficiency
- Re-using resources and adopting the best available techniques (BAT)

The Group's commitments under the IMS Policy go beyond introducing advanced energy-efficient technologies and solutions in order to reduce the consumption of energy resources. Major further commitments involve the development of captive power generation capabilities that utilize metallurgical gases and other captive recyclable energy resources as well as support of the use of renewable energy sources where applicable and viable. The purchased equipment and services are evaluated in terms of compliance with the corporate energy efficiency requirements.

Since 2014, NLMK Group's Russian companies use a unified enterprise-level [technical energy management policy](#). Its objectives are to implement the most advanced technical solutions, equipment, and technologies to bolster the reliability, efficiency, and safety of the Group's energy sector. The policy sets out the priorities and rules for the use of technical solutions related to operations of energy facilities, implementation of investment programmes for new construction, upgrade of the core steel-making equipment, complex modernization of the NLMK Group companies' energy assets.

A key performance indicator for improving the production energy efficiency is the specific energy intensity of the products (Gcal/t of output). The targets for these key performance indicators are set taking into account the best results achieved earlier, assessment of the potential of upgrading the process to the best technologically achievable level, as well as the results of benchmarking of similar equipment against the best global practices.

Certification

The Company's energy management system is in compliance with the international ISO 50001 standard, as confirmed by an international certificate. One of the main requirements under this international standard is continuous improvement of the energy performance.

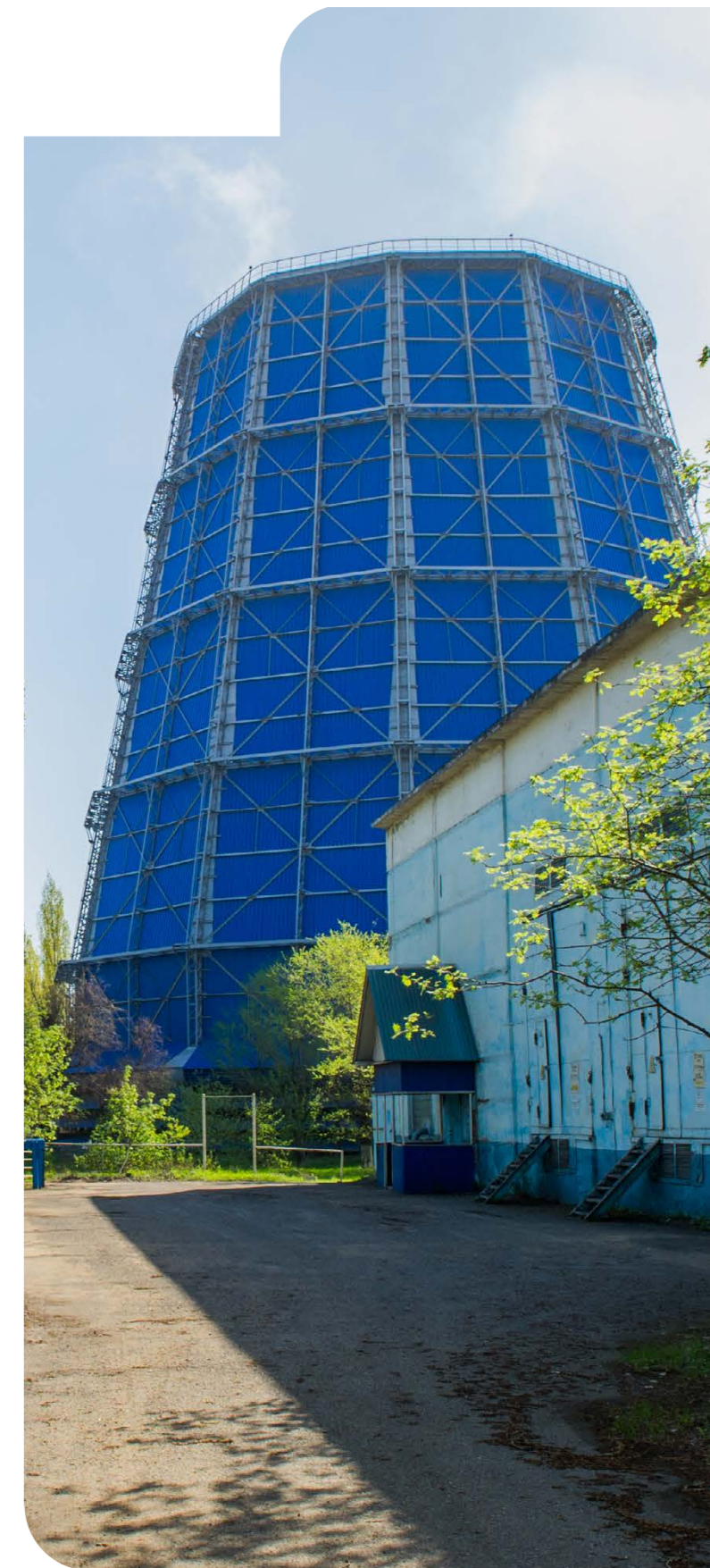
The system encompasses all core production sites of the Group¹:

- NLMK
- VIZ-Steel
- Altai-Koks
- Dolomit
- Stagdok
- Stoilensky
- NLMK Kaluga
- NLMK Metalware
- NLMK Ural

NLMK DanSteel has also been certified to ISO 50001.

In 2023, the Russian companies of the Group successfully completed an energy management compliance audit carried out by the new certification authority.

¹ NLMK Kaluga, NLMK Metalware and NLMK Ural were covered by the "umbrella" certificate of compliance with the international standard up to Q4 2023.



Energy resource consumption in 2023

[GRI 302-1] [GRI 302-3]

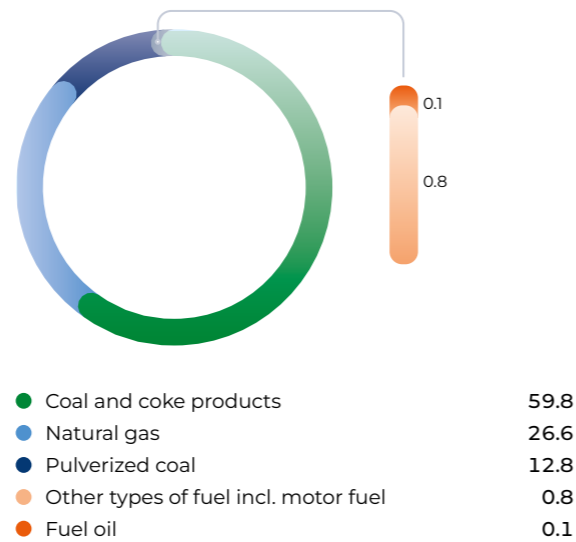
In 2023, the total energy consumption within the Company stood at 367.8 PJ, which is 14.4 PJ lower year-on-year. The reduction was driven by the divestment of NLMK Russia Long Products from the Company in Q4 2023.

NLMK Group uses a variety of non-renewable fuels in its production activities: natural gas accounts for 26.6% of the total balance, coal and coke account for 59.8%, and pulverized coal accounts for 12.8%.

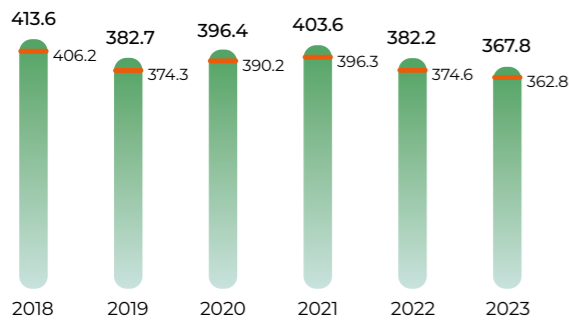
⚡ 366.6 PJ

Non-renewable energy consumption

Breakdown of non-renewable fuel consumption by NLMK Group in 2023, % [GRI 302-1]

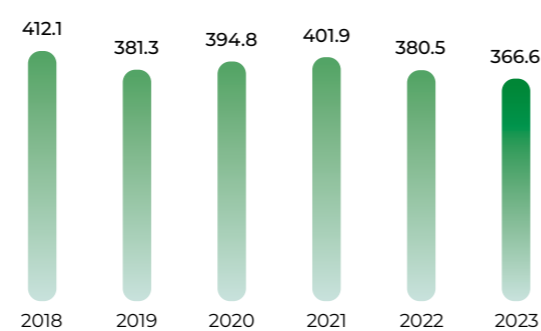


Total energy consumption by NLMK Group¹, PJ [GRI 302-1]



● Общее потребление энергии в Группе НЛМК
 — Общее потребление без дивизиона НЛМК Сорт

Consumption of non-renewable energy by NLMK Group², PJ [GRI 302-1]



Consumption of non-renewable fuel by NLMK Group, PJ [GRI 302-1]

Type of fuel	2018	2019	2020	2021	2022	2023
Coal and coke products	208.64	185.24	197.64	195.70	178.40	199.30
Natural gas	87.75	91.26	85.86	91.01	81.79	88.71
Pulverized coal	43.30	36.15	43.36	44.13	47.05	42.51
Motor fuel (petrol, diesel, liquefied gas)	2.79	2.91	2.90	3.10	2.73	2.55
Fuel oil	0.04	0.21	0.29	0.25	0.36	0.27
Total	342.53	315.77	330.05	334.19	310.33	333.34

¹ The methodology for calculating the energy consumption by Group companies: purchased energy minus sold energy (sales, shipment, transfer) at each production site. In Q4 2023, some of its assets (NLMK Russia Long Products companies and partially NLMK Vtorchermet) were removed from the Company. From 2023, this report includes the assets of NLMK India.

² Methodology for calculating non-renewable types of energy includes total energy consumption minus renewable energy.

In addition to that, renewable energy resources are also used, in particular electrical power from renewable sources, woodchips and charcoal for the production of ferroalloys.

In 2023, the share of renewable electric power decreased to 3.89% of the total electricity consumption. The reduction was driven by the switch of the Russian production sites to almost 100% low-carbon electric power supplied by nuclear power plants. The share of renewable energy in the total volume of electricity consumption is shown without transit flows. NLMK Group did not make any direct purchases from renewable energy suppliers.

The share of renewable electric energy in the total NLMK Group energy consumption is 0.34%.

Increasing the share of low-carbon energy is one of the priority areas of NLMK Group's efforts aimed at reducing the production carbon intensity. Nuclear energy is one of the main decarbonization tools, currently accounting for a third of global low-carbon electricity production. In 2023, the share of power supplied to Group sites by nuclear power plants (NPPs) grew to 6.1 bn kWh. The total share of energy from renewable sources and energy from low-carbon sources (NPPs) in 2023 stood at 6.56% of the total amount of energy consumed by the Company. The share of energy purchased from NPPs by Russian companies is determined in accordance with the terms of direct sale and purchase agreements.

Renewable electric energy consumption across NLMK Group¹ [GRI 302-1]

Year	2018	2019	2020	2021	2022	2023
Share of renewable electric energy in total energy purchased, %	4.86	5.10	5.14	5.14	5.39	3.89
Total share of renewable electric energy in total energy consumed, %	0.37	0.37	0.42	0.44	0.43	0.34
Total renewable electric energy consumed, PJ	1.51	1.43	1.68	1.79	1.64	1.23

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

Country	Share of renewable energy ²	Source	Companies
Russia	~0.0	Hydro, wind, solar	NLMK, Stoilensky, NLMK Kaluga, NLMK Ural, NLMK Metalware, VIZ-Steel
USA	21.29	Hydro, wind, solar, biofuel	NLMK Indiana, NLMK Pennsylvania & Sharon Coating
Belgium	23.21	Wind, solar, biofuel	NLMK La Louvière, NLMK Clabecq
France	21.06	Hydro, wind, solar, biofuel	NLMK Strasbourg
Italy	37.05	Hydro, wind, solar, biofuel	NLMK Verona
Denmark	99.39	Wind, solar, biofuel	NLMK DanSteel
India ³	21.72	Hydro, wind, solar, biofuel	NLMK India Coating

¹ The calculation assumes a conversion factor of 1 MWh = 3.6 GJ.

² The share of generation from renewable energy sources in the Russian Federation in 2023 is represented in accordance with the Association "NP Market Council" reports:

https://ais.np-sr.ru/ru/iasen/information/IASE_OV_R11_GENERATION_tipy_gen#0/11/GENERATION;
https://ais.np-sr.ru/ru/iasen/information/IASE_OV_R16_GENERATION_tipy_gen#0/16/GENERATION;
https://ais.np-sr.ru/ru/iasen/information/IASE_OV_R19_GENERATION_tipy_gen#0/19/GENERATION;
https://ais.np-sr.ru/ru/iasen/information/IASE_OV_R41_GENERATION_tipy_gen#0/41/GENERATION.

The data for Europe are presented according to BP Statistical Review of World Energy 2023

<https://www.bp.com/en/global/corporate/energy-economics.html?ysclid=lt2karte62637382987> [page 8, 44, 45].

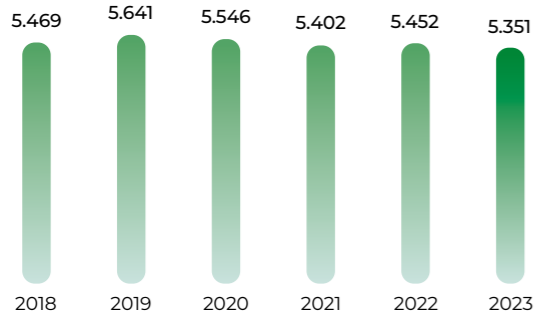
The data for the USA are presented according to Monthly Energy Review US Energy Information Administration <https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf> [page 133].

The data for India are according to All India Electricity Statistics. General Review 2023

<https://cea.nic.in/general-review-report/?lang=en> [page 15].

³ Starting from 2023, the report includes the data on NLMK assets in India.

Specific energy¹ intensity of NLMK Lipetsk, Gcal/t [GRI 302-3]



The year-on-year decrease of NLMK Lipetsk specific energy intensity in 2023 was driven mainly by the implementation of energy efficiency projects and an increase in the steel output by 8.3%.

Captive electricity generation

One of the methods used by NLMK Group to achieve energy cost reduction is to implement investment projects and optimization initiatives aimed at increasing captive generation of electricity and thermal energy.

The electricity is generated at the Company's captive power plants, which are chiefly powered by by-product fuel gases. More than 80% of the electricity generated at NLMK Lipetsk (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).

The maximum possible utilization of the available recyclable energy is one of the main challenges faced by NLMK Group; overcoming this challenge will make it possible to not only minimize expenditure but also to reduce our environmental impact by cutting emissions of greenhouse gases and other substances.

Before the sale of NLMK Group's long steel products business, the Company's total installed in-house generation capacity stood at 733 MW, including

- 522 MW at the Lipetsk site
- 200 MW at Altai-Koks
- 11 MW at NLMK Ural

⚡ 722 MW

the installed in-house generation capacity of NLMK Group as at the end of 2023

Captive electricity generation at NLMK Group sites²

Captive electricity generation at NLMK Group sites

NLMK Lipetsk ⚡ 522 MW

Co-generation plant: fuel — coke oven gas, blast furnace gas, natural gas

Recovery co-generation plant: fuel — blast furnace gas, natural gas

Top pressure recovery turbine station: no fuel is used; instead, electricity is generated from excess blast furnace gas pressure

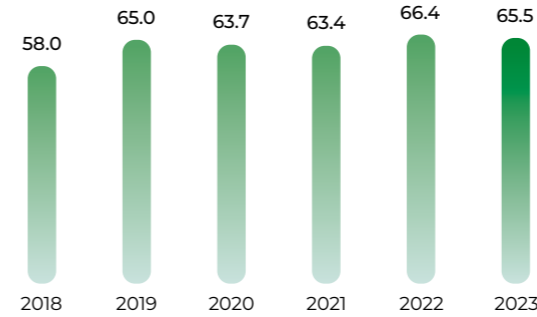
Altai-Koks ⚡ 200 MW

Co-generation plant: fuel — coke oven gas

NLMK Ural ⚡ 11 MW

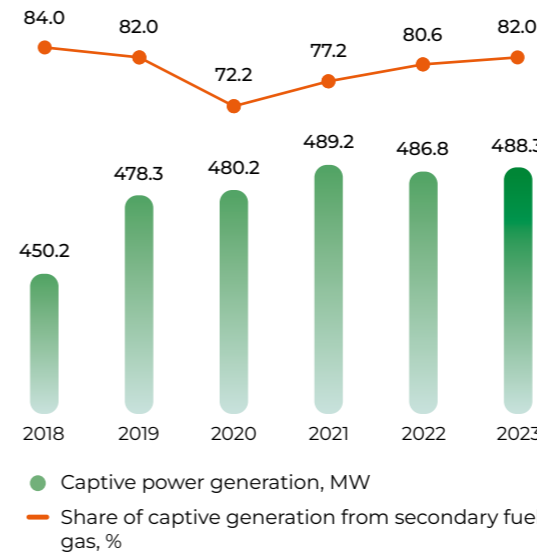
Mini gas-piston co-generation plant: fuel — natural gas

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



In 2023, the share of captive electricity generation decreased year-on-year due to higher consumption at the Lipetsk site with the generation equipment still operating at its maximum capacity.

Captive electricity generation¹ at NLMK Lipetsk



The increase in power generation capacity was driven by phased implementation of optimization initiatives aimed at higher utilization of cogeneration and recovery cogeneration equipment.

The project to build a new recovery cogeneration plant (RCGP-2) fuelled by captive recyclable resources continues. Once launched, the plant will improve NLMK Lipetsk's self-sufficiency in electricity

up to 94%

The new plant will be fuelled by the waste gases from steel production: BOF and BF. This is going to become the first project in Russia to use BOF gas for power generation. The installed capacity of the new recovery cogeneration plant will be 300 MW.

In 2023, the Company completed the construction of the plant's power distribution system. Installation of core and auxiliary equipment continues. Commissioning procedures are expected to start in 2024.

The launch of a power station fuelled by waste gases from steelmaking and blast furnace operations will enable an annual reduction in CO₂ emissions of 650,000 tonnes (36 kg per tonne of steel).

¹ Specific energy intensity = (energy consumption of steel production / energy consumption of extraction and processing of raw materials, Gcal) / (the volume of steel production / extraction and processing of raw materials, t). The following types of energy resources were used in the calculation: purchased: coking coal and additives, pitch coke, lump coke, coke breeze, pulverized coal, natural gas, fuel oil, thermal energy as hot water, steam, electricity, oxygen (NLMK Lipetsk and NLMK Kaluga), nitrogen and hydrogen (NLMK Lipetsk), and heat from chemically treated water (VIZ-Steel); sold: coke breeze, coke nut, chemical products, blast furnace gas, steam, thermal energy as hot water, oxygen, nitrogen, compressed air, industrial water, and commercial pig iron.

² Prior to Q4 2023.

¹ Captive power generation includes the energy generated by the top pressure recovery turbine station (in blast-furnace shop No.2).

Consumption, generation, and sale of electricity and thermal energy by NLMK Group, PJ
[GRI 302-]

Indicator	2018	2019	2020	2021	2022	2023
ELECTRICITY AND THERMAL ENERGY PURCHASED FOR CONSUMPTION						
• Electrical energy obtained	87.30	78.47	77.72	83.45	79.97	74.79
• Thermal energy obtained as steam	0.50	0.48	0.48	0.51	0.55	0.53
• Thermal energy obtained as hot water	1.59	1.33	1.03	1.09	1.10	1.04
Total	89.39	80.29	79.24	85.05	81.61	76.37
CAPTIVE ELECTRICAL AND THERMAL ENERGY GENERATION						
• Electrical power generation	49.36	50.01	49.93	51.34	51.11	51.80
• Thermal energy as steam	21.90	21.75	22.26	22.00	20.49	20.31
• Thermal energy as hot water	9.78	7.41	7.68	7.95	7.58	7.39
Total	81.03	79.17	79.87	81.29	79.18	79.50
ELECTRICAL AND THERMAL ENERGY SOLD TO EXTERNAL CONSUMERS						
• Electricity sold and transmitted	10.70	8.99	8.63	9.23	11.66	11.33
• Heat energy sold and transmitted as steam	0.35	0.37	0.40	0.44	0.42	0.35
• Heat energy sold and transmitted as hot water	2.76	2.35	1.92	1.96	1.99	1.85
Total	13.81	11.71	10.94	11.6	14.07	13.53

Optimization initiatives undertaken by NLMK Group in 2023

[GRI 302-4]

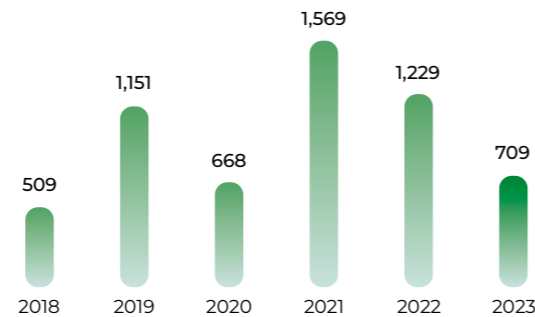
In the reporting period, NLMK Group sites implemented a series of optimization projects in the following areas:

- Improving the efficiency of fuel gas use in electric power generation
- Improving the efficiency of compressors, pumps, and cooling equipment
- Optimizing process charts for the production of energy resources
- Optimizing the utilization and layout of energy resource networks, and optimizing the operation modes of energy equipment

Cross-functional teams organized at NLMK Europe sites developed and implemented initiatives aimed at reducing electricity and natural gas consumption. The best results were achieved at NLMK Clabecq; natural gas consumption of the reheating furnaces at its hot rolling shop was reduced by 8%. This work will be continued in 2024.

NLMK Group continued implementing a targeted programme to replace lighting fixtures at its sites with newer and more energy efficient ones, and also upgraded its pumping equipment.

Savings through optimization activities within the strategic cycle, RUB m



RUB 0.71 billion

or \$8.4 m, – gains from the Company's energy efficiency projects implemented in 2023

Replacement of lighting systems at NLMK Lipetsk

In 2023, the Lipetsk site replaced 17,500 lighting fixtures as part of an energy efficiency programme to upgrade ceiling lights, achieving an economic impact of RUB 55.5 million.

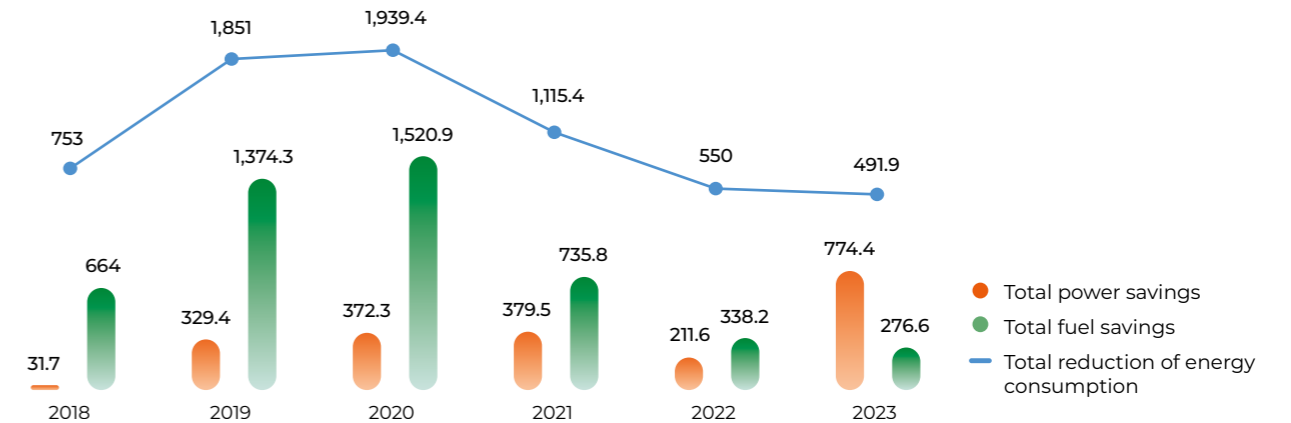
Also, the Company completed the first phase of a targeted programme to replace fluorescent lighting fixtures with LED lights, delivering an economic impact of RUB 22.6 million. The programme is aimed at improving the energy efficiency of lighting systems and eliminating Class 1 hazardous waste generated by obsolete lights.

Transition of the Lipetsk site's core steelmaking equipment to natural gas

In 2023, the Company continued implementing a series of investment projects aimed at converting the equipment used at NLMK Lipetsk's CR&CS and MSPS from blast furnace gas and/or blast furnace gas mixtures to natural gas. The unused blast furnace gas is redirected into power generation.



Reduction in energy consumption¹ as a result of energy-saving initiatives (programmes) at NLMK Lipetsk, TJ [GRI 302-4]



¹ The impact of NLMK Group's energy efficiency programmes (excluding the impact of the investment projects implemented earlier) is evaluated in terms of equivalent units of purchased energy (natural gas and electricity) used to produce a given energy resource. Project efficiency is monitored for 12 months; actual savings are analyzed vs. a similar baseline period before implementation.

Motor fuel consumption

Motor fuel is covered by the Company's energy management system.

NLMK Group continuously pursues its goal to reduce fuel consumption and achieve technically feasible levels of specific fuel consumption for each category of transport.

Well-timed vehicle repairs and maintenance of fuel injection equipment, fewer idle runs, and engine shut-offs during stops of longer than five minutes enabled a reduction in fuel consumption:

by **319,000** litres

For rail transport (litres per machine hour):

- Stoilensky – 4.9%
- Dolomit – 2.2%
- Altai-Koks – 2.1%
- VIZ-Steel – 11.6%

For motor transport (litres per 100 km):

- Stagdok – 4.6%
- VIZ-Steel – 9.6%
- Vtorchermet – 1.3%

In 2024, the Company will focus on the following key areas:

- Engine cleaning (using hydrogen units) to reduce fuel consumption by up to 5%
- Driver performance ratings and adoption of ECO-driving principles to reduce fuel consumption by up to 10%
- Use of fuel additives to reduce fuel consumption by up to 5%

Consumer-side reduction of energy [GRI 302-5]

NLMK Group produces high-strength and wear-resistant steels that deliver metal structures of lower weight, thus leading to lower fuel and steel consumption and, ultimately, driving the transition to a low-carbon economy. The Company also produces steel plates that are used in construction of wind power installations, as well as premium grain-oriented steels that allow consumers to reduce specific magnetic losses in transformers by 5-15%.

Plans for 2024 and the medium term

Improving the energy efficiency of production is one of the key goals for the next strategic cycle. The main lines of action to boost energy efficiency in 2024 and the medium term include:

- Reducing specific energy consumption at production units; in the medium term — reaching the minimum technically feasible level of consumption
- Optimizing process charts for the production of energy resources
- Driving efficiency of various types of equipment (energy, compressors, pumps, and lighting)
- Developing and introducing innovative digital energy solutions
- Implementing investment projects for infrastructure development, technical upgrades/construction of facilities with improved energy efficiency performance

The Company will also continue to implement energy efficiency projects at its European sites, including those designed to ensure compliance with the EU Directive 2023/1791.

Environmental protection

Material topics

- Air emissions
- Water consumption and discharge
- Biodiversity
- Secondary raw materials

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.

Contribution to Russia's national development objectives and federal initiatives

NLMK is a participant in the Ecology Federal Initiative.

Key events in 2023

- NLMK Group has achieved all its environmental goals within the completed strategic cycle
- The projects implemented under the Ecology Federal Initiative delivered effects at 2.5x the plan
- NLMK Lipetsk was the first industrial site in the Central Black Earth Region of Russia to have been granted the Comprehensive Environmental Permit (CEP)
- NLMK Group has adopted a Recycling Programme
- The Company has adopted a Comprehensive Programme for Gas Treatment Equipment Maintenance

Global Sustainable Development Goals



Key figures

30 projects under the Environmental Programme planned through to 2024 have been completed successfully

50% reduction of pollutants discharge into water bodies upon completion of the Strategy

32,000 tonnes reduction of gross emission by NLMK Group upon completion of the Strategy

10x reduction of water intake from the Voronezh River compared to 1980

14% reduction of specific dust emission upon completion of the Strategy

99% recycling rate of secondary resources

RUB 173 bn or \$2.6 bn, of invested in the environment over ten years



Environmental policy commitments

[GRI 3-3]

Environmental stewardship is a top priority for NLMK Group's activities — both on the part of the Board of Directors and the CEO (Chair of the Management Board) of the Company. The Group's CEO and Board of Directors review its environmental performance on an annual basis. The Strategic Planning Committee under the Board of Directors studies risks related to sustainable development, including those related to the environment, and approves the Environmental Programme, which is updated regularly if new risks are identified, and investments in environmental protection projects. [GRI 2-12]

NLMK Group's Policy on the Integrated Management System (IMS) is the Company's foundational document in environmental protection. The policy reflects NLMK's responsible and rational approach to environmental protection management. Recognizing the right of future generations to enjoy a healthy environment, 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. [GRI 2-24]

NLMK takes a comprehensive approach to environmental management by focusing on:

- reducing air emissions
- maximum possible reuse and processing of waste
- conservation of water resources and biodiversity
- rehabilitation of contaminated land

In 2023, as had been the case previously as well in its relationships with local citizens in the cities of operation, the Company did not encounter any significant differences on the issues of environment. The Company takes reduction of its environmental impacts very seriously and makes regular communications to local citizens about NLMK's projects in environmental protection and their results as part of the Green City Programme. Additionally, the Company operates an environmental hotline: NLMK carefully considers the environmental information from stakeholders received via the hotline and takes timely action in response.

The year 2023 was marked by a significant change in the Group's organizational composition following the divestment of NLMK Long. In order to maintain comparable reflection of environmental metrics against the scope of the original targets, actual environmental performance was adjusted to match the underlying structure of the Group's assets at the beginning of the strategy cycle, i.e., inclusive of NLMK Long. Other data and actual performance values that are not part of the strategic efforts do not reflect the performance of NLMK Long.

Awards

- NLMK Group won in the *Environmental Responsibility* category of the national contest *Russian Business Leaders: Dynamism, Responsibility, Sustainability*
- NLMK won the 5th national competition *Reliable Partner in the Environment in the Best Project for Ecology and Resource Management* category
- NLMK Group received a silver medal from the Metal-Expo 2023 for its video analytics in emission monitoring of controlled substances, a digital service
- NLMK's video analytics for environmental monitoring of coke-oven batteries won in the *Digital Projects and Environment* category of the contest of effective digital projects in mining under the Mining Industry 4.0 International Competition
- NLMK Group took part in the *Green Spring 2023* competition
- NLMK's project for development and implementation of the Environment Information System received first place at the 7th international competition of best automation and accounting projects, *IC: Project of the Year*, in the *Steelmaking Industry and Metal Fabrication* category

Strategic goals and key performance indicators

In implementing its environmental programme aimed at reducing the footprint NLMK Group focuses on the introduction of the best available techniques (BATs). The Environmental Programme within the recently completed strategic cycle of NLMK Group has successfully achieved all of its environmental goals¹:

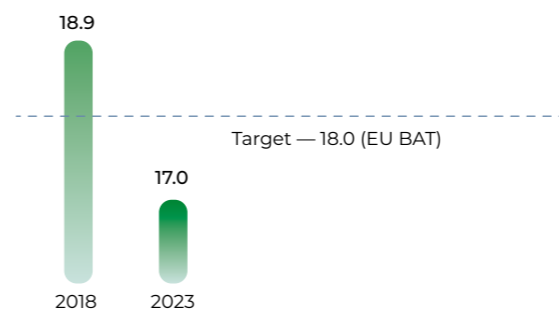
- Reduction of specific atmospheric emissions down to the level of EU Best Available Techniques

- Reduction of impacts on water resources — decrease of pollutant discharge into water bodies by 25% (actual result is 50%)
- Increase of the share of secondary raw materials utilization to 92% (actual result is 96%), including of iron-bearing recyclables up to 100%

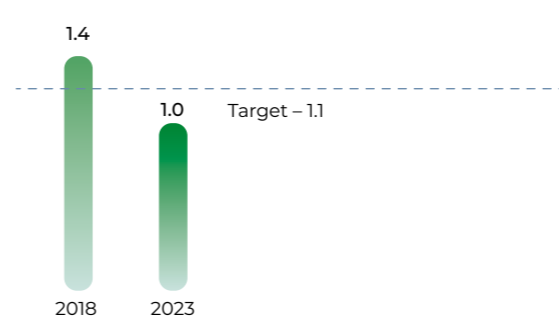
An additional target was set for the Group's Russian companies for specific emissions of class 1 substances. Set at 0.07 g/tonne of steel, the target was achieved in 2021 and maintained sustainably since.

NLMK Group's specific emission reduction target (EU BAT) achieved

Reduction of specific emission NLMK Group, *kg/t of steel¹*

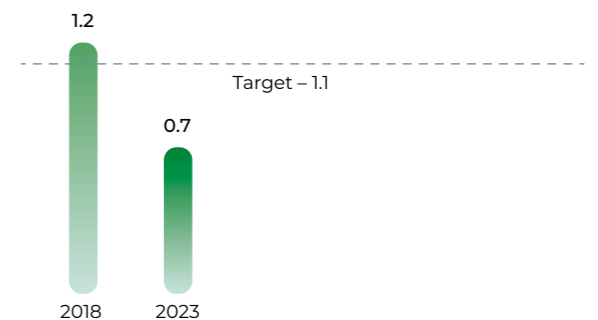


Dust (NLMK Lipetsk), *kg/t of steel¹*

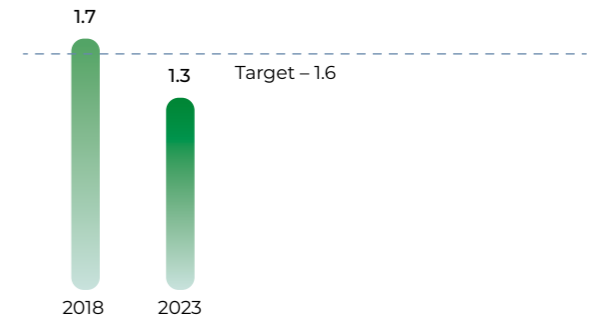


Target reduction of individual substances specific emissions achieved

NO_x (NLMK Lipetsk) *kg/t of steel¹*



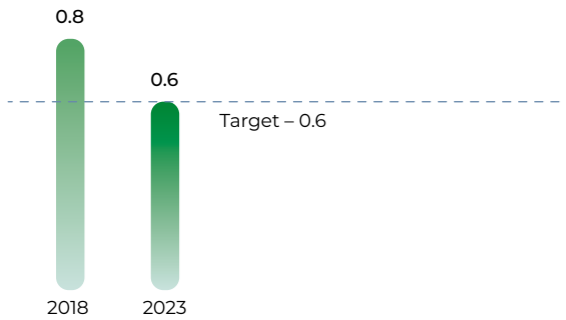
SO_x (NLMK Lipetsk), *kg/t of steel¹*



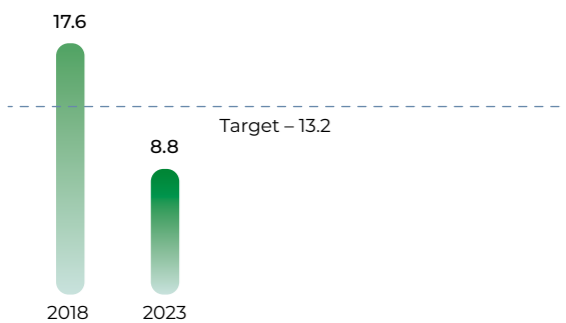
¹ In order to maintain comparable reflection of environmental metrics against the scope of the original targets, actual environmental performance was adjusted to match the underlying structure of the Group's assets at the beginning of the strategy cycle.

Target reduction of impact on water resources achieved

Specific municipal wastewater discharge (NLMK Lipetsk), m^3/t of steel²

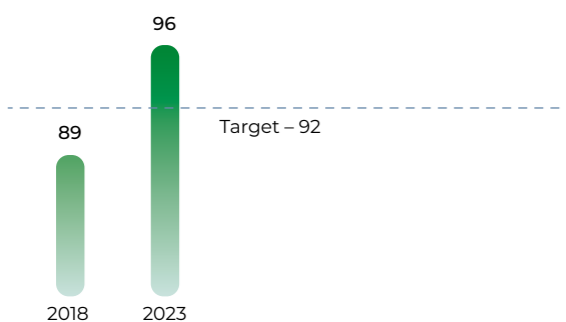


Pollutants discharge into water bodies, '000 t²



Target increase of the recycling rates¹ achieved

Waste recycling share, %²



¹ Excludes overburden and tailings. The indicator takes into account only materials classified as waste at the beginning of the strategic cycle. Further in the text, the indicator "recycling (99%)" takes into account all secondary raw materials, including by-products.

² In order to maintain comparable reflection of environmental metrics against the scope of the original targets, actual environmental performance was adjusted to match the underlying structure of the Group's assets at the beginning of the strategy cycle.

Investment in environmental protection

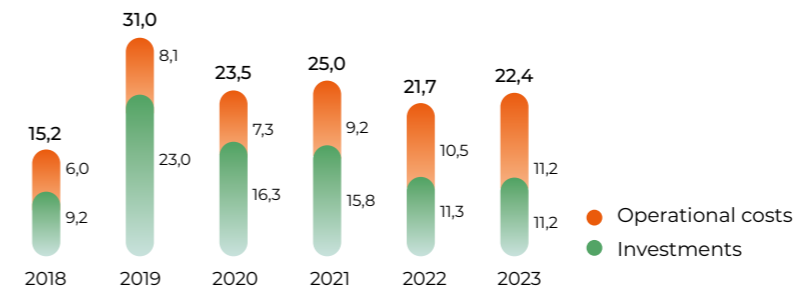
Each year NLMK Group commits significant resources to ensuring the accident-free operation of equipment and the implementation of investment projects that have an environmental impact.



RUB 22 bn

or \$263 m, invested in environmental protection in 2023

NLMK Group spending on environmental protection, RUB bn



Clean Air Federal Initiative – targets overachieved

As part of a four-party agreement between NLMK, the Ministry of Natural Resources, Rospirodnadzor and the administration of the Lipetsk Region, the Company has already implemented seven out of nine projects planned until 2024. Projects are underway to reduce generation of controlled substances as part of the emission allowance pilot. They aim to implement the Ecology Federal Project.

- The projects make use of the best available techniques.
- The planned reduction of gross emissions due to the implemented projects was **8,000 tonnes**, while the actual achieved reductions in 2019–2023 is **2.5 times above** the target.

Projects 2019–2023



Blast Furnace No.4

–10,900 t CO emission reduction

–3,000 t Dust emission reduction

–4,000 NO_x emissions reduction



BOFs No.2.3



Blast Furnace No.6

RUB 109 bn

Environmental investment

Projects 2024–2026



Recycling co-gen power plant

–10,500 t CO emission reduction

–0,300 t Dust emission reduction

–650,000 t CO₂ emission reduction



Air heaters of Blast Furnace No.4

RUB 30 bn

Environmental investment

> RUB 127 bn

or >\$2.4 bn, invested in environmental projects since 2000

Over this period, specific air emission of NLMK Group has gone down from 43.3 kg/t of steel to 17.0 kg/t of steel, or a 2.5-fold reduction. Overall, alongside a two-times increase in production, the cumulative impact on the environment was reduced by 61% and **complies with the BAT**.



Environmental monitoring system

NLMK Group conducts continuous monitoring at its sites and in the cities of operation. In 2023, the Company relied on in-house and contracted certified labs to take over 4.5 million measurements of air quality, and around 80,000 measurements of water and soil conditions.

[\[GRI 2-24\]](#) [\[GRI 2-25\]](#)

For example, it has deployed more than 950 metering stations in Lipetsk: at source, at the sanitary-protection zone (SPZ) boundaries and in the city. The measurements are made by the NLMK Lipetsk own lab, a third-party lab reporting to Rosprirodnadzor, automated monitoring sensors, and stationary detection stations of the Russian Meteorological Service.



 **measurements**

per minute to assess NLMK's impact in 2023

At-source monitoring

New data to enable environmental monitoring

The Group's flagship site, NLMK Lipetsk, has its main emission sources outfitted with control sensors. Their concentration readings are fed into an IT system, which covers 76% of the site's emissions with real-time monitoring. These data are analyzed against control charts. The Environmental Service is tracking the real-time values of dust, hydrogen sulphide, nitrogen concentrations as well as other substances. In case a threshold is exceeded, the experts can address the deviations promptly, identify the root causes, and take systemic action to eliminate and prevent them.

The annual average concentration of hydrogen sulphide in the city of Lipetsk reduced by two times, which is much lower than the official regulatory requirement.

NLMK Lipetsk has achieved these hydrogen sulphide reductions due to a revamp of the BF-6 slag granulation plant, aggregation of coke oven gas recovery flows, and introduction of new slag processing techniques that prevent emission of hydrogen sulphide. Over the recent five years, the Company has invested more than RUB 10 billion into the projects that reduce hydrogen sulphide emissions.

Furthermore, NLMK Lipetsk deployed specialized equipment on site and on an area 7 kilometres around it – the Meteorological Conditions Monitoring System (Weather Station) – in order to keep track of changes in temperature and wind speed. This system provides tracking and

forecasting of pollutant accumulation in space and time depending on wind parameters, time of day and season, as well as the site's own emission. The plan for 2024 is to leverage the observation of these patterns to develop a mathematical model with an increased accuracy of pollutant dissemination calculations.

Evolution of machine vision

In 2023, NLMK Lipetsk continued the deployment of a machine vision-based system for visible emission analysis. The purpose of the system is to identify any non-typical atmospheric emissions, determine their source, and initiate timely response.

The system's in-depth analytics can map emissions onto shop processes, identify the causes and eliminate them on the production level.

The machine vision project at the Coke and Chemical Plant has provided statistical data to analyze coking battery door wear and improve the quality of equipment maintenance significantly. It led to a reduction of gassing from doors by almost 80%.

All coke-oven doors now have dedicated cameras for video analytics. Machine vision helped identify problematic areas where response measures have delivered a reduction of visible emission events by 20% year-on-year.

Automated emission control system at Stoilensky

In 2022, NLMK Group completed the installation of an automated emission control system at main sources. The system ensures monitoring and control over 85% of the site's emissions.

It is planned in 2024 to design a system for monitoring of dusting along major conveyors in the medium and fine crushing facilities. This will enable analysis of dedusting parameters, development of appropriate technical solutions for efficiency improvement, monitoring of operation of the system for maintenance, planning action to reduce OPEX.

Monitoring on the sanitary protection zone boundaries and in the city

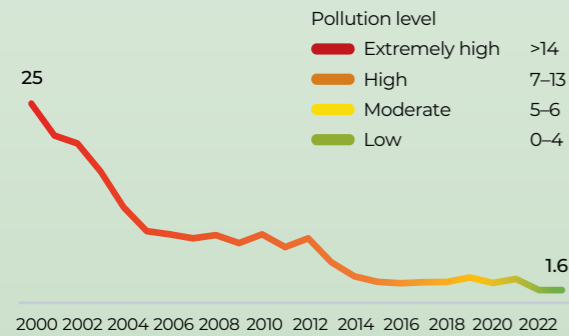
The Company regularly publishes environmental monitoring data on the main controlled substances (carbon monoxide, hydrogen sulphide, sulphur dioxide and nitrogen dioxide) in the air of Lipetsk. It makes available [a map](#) that shows the indicators of average

monthly values in MPC shares both from the posts of Russia's Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet) and from 12 additional control points on the border of the sanitary protection zone of the plant and in the city.

The city of Lipetsk, which is home to NLMK Group's largest asset, has been officially recognized as the cleanest steelmaking city in Russia for nine years now, according to data from Roshydromet. Thanks to environmental protection measures, the Integrated Air Pollution Index (IAP) in the city of Lipetsk fell by a factor of more than 10 between 2000 and 2023, and has remained sustainably low.

The index accounts for local specifics and factors in five components with the highest concentrations, where hazardous substances are given a larger weight. The weighted substances for Lipetsk are benz(a)pyrene, carbon monoxide, nitrogen dioxide, formaldehyde.

Air quality in Lipetsk



New monitoring system at Altai-Koks

Altai-Koks deployed a new air monitoring system, both on-site and in the city. The system operates with real-time data on key pollutants and weather parameters. Proprietary software provides dissemination calculations at the control points, manages pollution accumulation statistics, and run forward-looking analytics. The software suite integrates also the Russian and international methodologies for air pollution indices.

Noise pollution monitoring

The main noise pollution source on the boundaries of the sanitary protection zone (SPZ) of NLMK sites is operational equipment. Noise impacts are a significant factor at NLMK Lipetsk and Sary Oskol as well as some European sites, including NLMK DanSteel, NLMK La Louvière, NLMK Clabecq, that are situated close to residential areas. Noise pollution by other sites is not as critical, since it is lower in the first place and further removed from residential areas. NLMK's mining operations focus on reduction of noise from blasting.

- The site implemented the following actions in order to reduce its noise impacts:
- Sound alarm intensity and duration were reduced from 10 to 3 minutes as well as the sound alerts from open pit equipment (sound limiters installed at all sources)
 - Detonator cords were phased out as the main noise source during blasts
 - Total amount of explosives was limited within one major blasting event (a two-time reduction from 20 to 10 tonnes)
 - Open pit operations are no longer executed at night-time, from 11 p.m. to 7 a.m.; front loaders are used instead of excavators for tailings

NLMK Lipetsk

The Environmental Laboratory of NLMK Lipetsk carries out annual measurement of noise at the boundaries of its sanitary protection zone. There were no noise level violations in 2023.

In 2022–2023, the Refractory Shop at NLMK Lipetsk installed noise barriers that have reduced the noise impact by 15%. Immediate short-term plans include several more investment projects to further decrease the noise pollution by 10%.

Following requests by the residents of Vvedenka Village, a round-the-clock monitoring system was deployed for noise and seismic effects of blasting at the pit and at the SPZ boundary. Continuous monitoring has confirmed that there were no noise level violations

📍 Blasting data are available at the official [website of Stagdok](#)

Stoilensky

A certified laboratory conducts noise monitoring at eight locations along the sanitary protection zone boundary.

Alongside the operational equipment, major sources of noise include blasting, which is done once every three weeks and lasts for less than one minute. There are no noise-related violations either during normal operation, no at times of blasting.

In 2024, it is planned to procure additional equipment for round-the-clock monitoring of noise, sound pressure and vibrations. These data will be used in forecasting models.

NLMK Europe

Noise pollution by operating equipment at NLMK DanSteel, NLMK La Louvière, NLMK Clabecq is a significant environmental parameter. The sites have imposed a ban on noisy work at night to decrease the impacts. Furthermore, the sites introduced an official requirement that all production building doors be closed during operation.

NLMK DanSteel implemented actions to adapt scrap reloading operations, replaced trucks with quieter alternative models, installed a new, quieter cooling tower at its effluent treatment facility, eliminated noise from torch cutter filters and fans.

Stagdok

The main noise sources at the boundary of the site's sanitary protection zone (SPZ) are noise from production operations and blasting as well.

NLMK La Louvière implemented a set of measures to reduce acoustic noise at the facilities closest to the residential areas: stand ventilation grills received noise dampers, screens and additional doors were installed in the compressor room, boiler room and at other equipment, pumps and cooling towers were replaced, and dry coolers were introduced. Noise emission by the sources was reduced by 10–30 dBA.

Stagdok Technical Monitoring Lab conducts measurements of noise on the SPZ boundary during each blasting event. A contracted certified laboratory measures the noise levels once every week too.

Atmospheric air protection

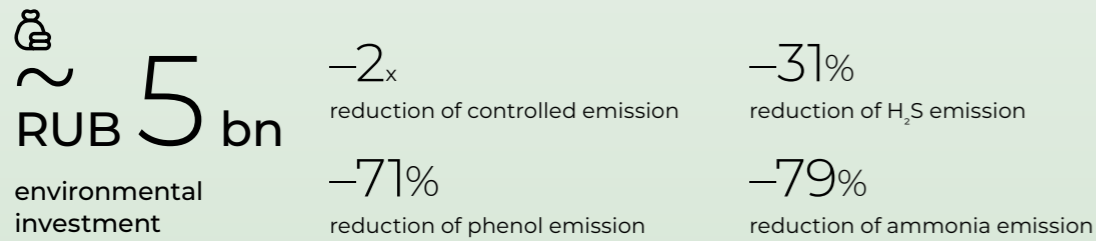
[GRI 3-3]

NLMK Group makes considerable efforts to reduce air emissions. The Company's spend on air protection amounts to more than 50% of its environmental expenditure. Investments aimed at reduction of air emissions at the flagship site NLMK Lipetsk accounts

for 70% of its environmental CAPEX. The targets set for reduction of specific emissions during the completed strategic cycle were achieved by the Company and exceeded by 6 p.p.

Main air emission projects within the completed strategic cycle

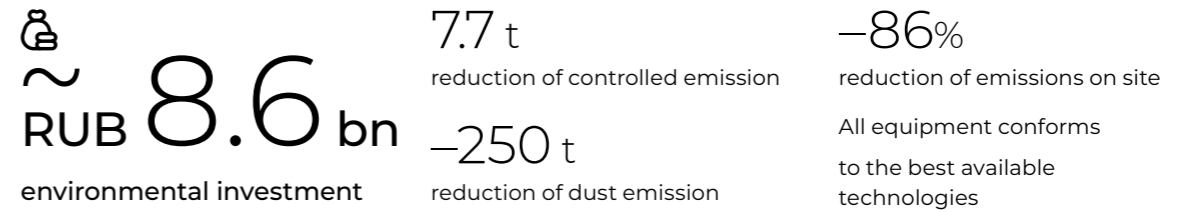
Chemical product capture complex



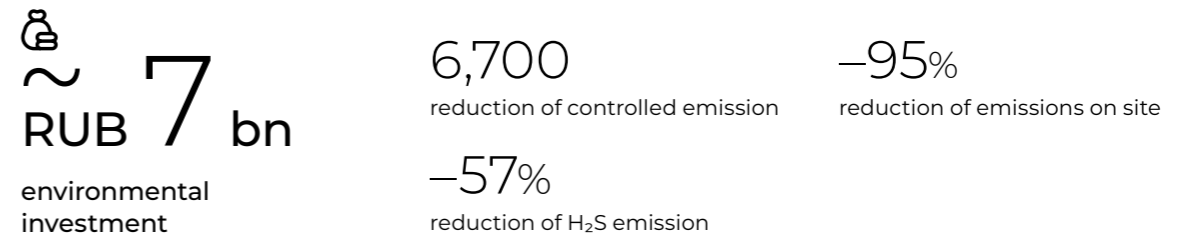
Integrated chemical products capture complex



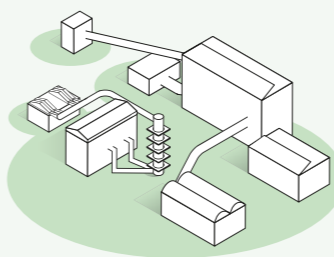
Blast Furnace No.4 revamping



Blast Furnace No.6 revamping

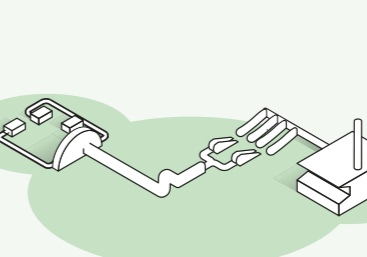


Bunker overpass dedusting complex



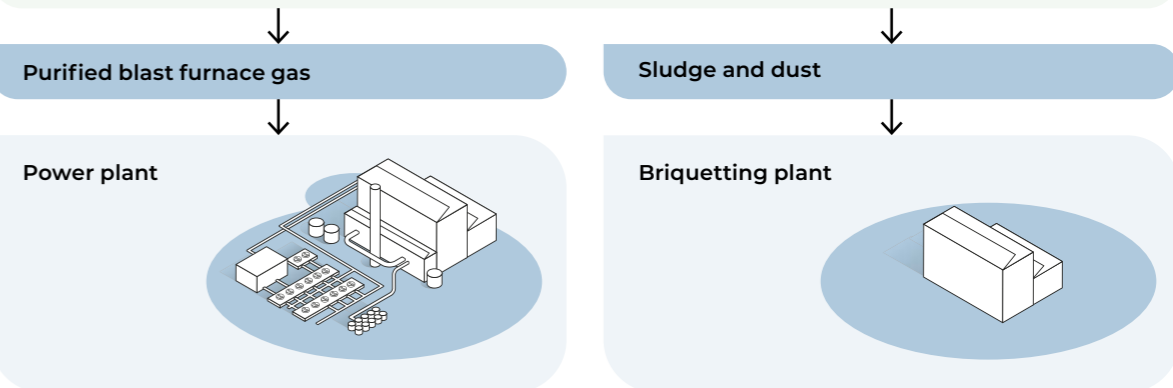
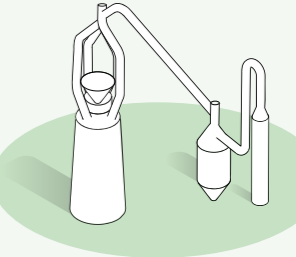
< 5 mg/m³ (BAT)
At stack dust emissions

Blast furnace gas purification complex



< 20 mg/m³ (BAT)
At stack CO emissions

Casthouse dedusting complex



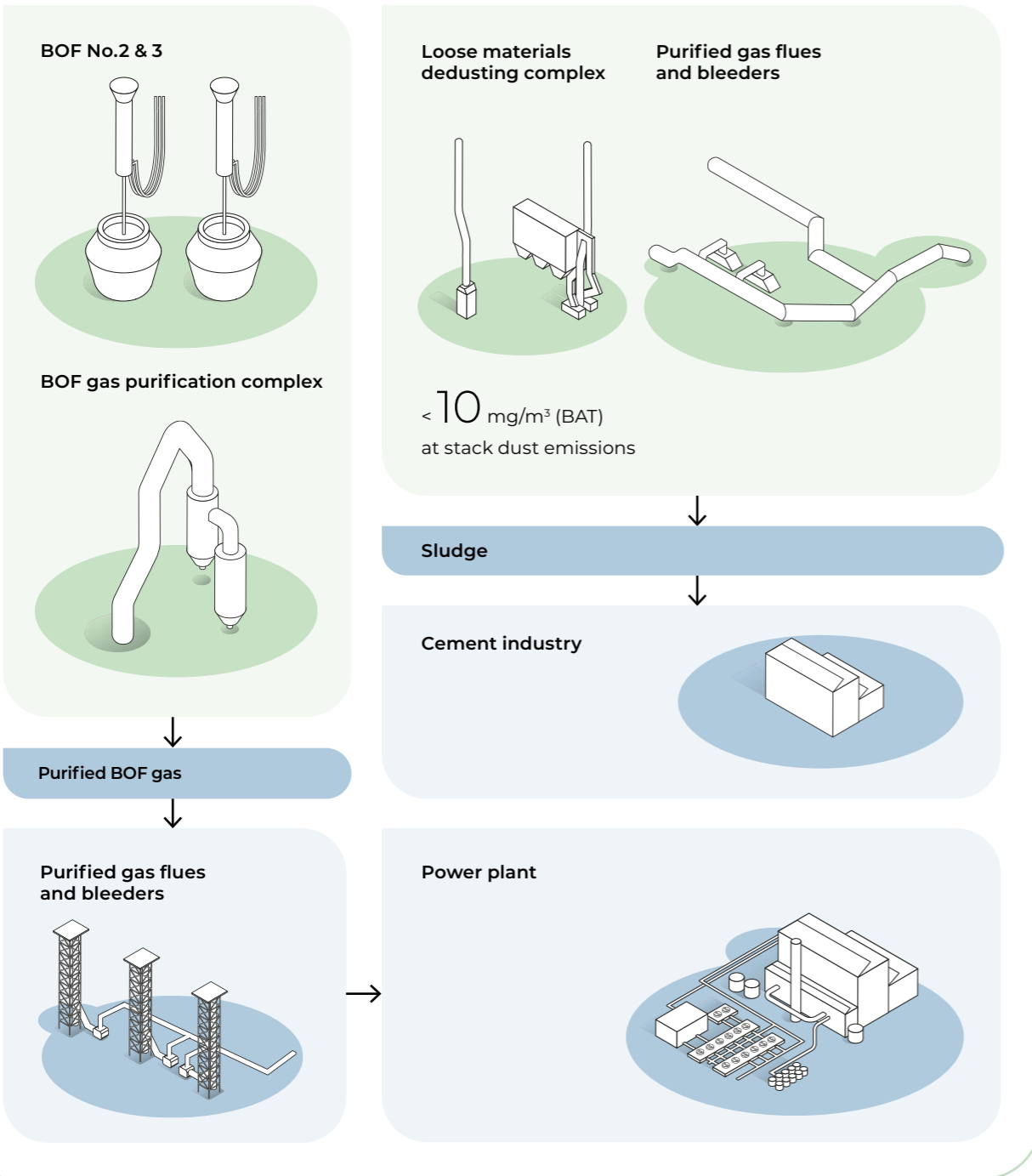
BOF No.2 & 3 revamping

~ RUB 26.2 bn
environmental investment

Up to 99%
dust is captured
by dedusting systems

600 t
Reduction of CO
emission

1,000 t
Reduction of dust emission



BOF Shop No.1 mixer section

~ RUB 650 m
environmental investment

100 t
reduction of dust emission
Visible emission eliminated
on site

100%
captured dust is utilized
in production

Dust and gas emission
aspiration system:

- 2 sources — hot iron pouring in the mixers
- 2 sources — hot iron pouring from the mixers
- 2 sources — hot iron pouring between ladles



Stoilensky beneficiation plant
dedusting upgrade

~ RUB 700 m
environmental investment

13
Gas purification plants
built and/or upgraded

2x
reduction of dust emission

1,500 t
reduction of dust emission



Implemented operational improvements

A set of measures at the coke & chemical plant (CCP)

- Reduction of unorganized emissions from CCP sources
- **28 t** reduction of gross emissions

Vacuum dust removal machines

- **250 t of dust** removed from roads over the season
- **360,000 m²** – the total area of cleaned roads over the season

Mobile dust suppression systems

- **90%** dusting avoided
- **35 ha** of treated area
- Reducing dust emissions by **40 t/year**
- **47 warehouses** of bulk materials treated

Reduced dusting at the tailings storage facility

- **134 ha** of dry beaches treated with a binder solution
- **-70%** reduction of TSF dusting
- **6x** reduction of dust concentration



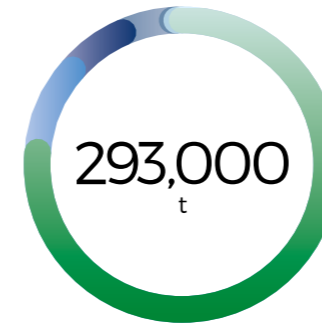
NLMK Group's gross emission of non-controlled substances in 2023 decreased by 32,000 tonnes, or 10%, vs. the 2018 baseline. Specific emissions were reduced by 3 kg/t of steel¹

76% 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. It 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.

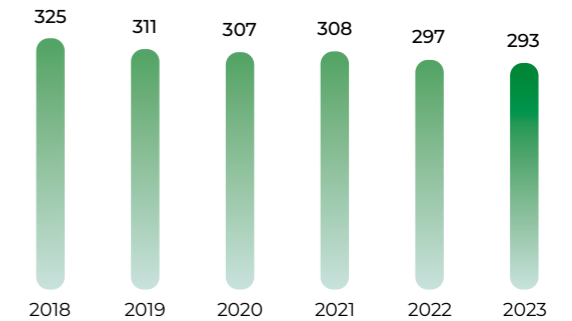
¹ Hereinafter, the reporting of past years has been adjusted to reflect the changes in the asset structure of the Group (excludes NLMK Long, which was divested in 2023).

NLMK Group's emissions by hazard class, %



- Carbon monoxide, class IV 76 I – extremely high hazard
- Nitrogen oxides, class III 10 II – high hazard
- Sulphur oxide, class III 7.0 III – medium hazard
- Dust, class III 6.0 IV – low hazard
- Other substances, class III-IV 0.2
- Other substances, class I-II 0.2

NLMK Group emission, '000 t [GRI 305-7]



Volume of significant emissions by NLMK Group by controlled substance type¹ [GRI 305-7]

Indicator	2018	2019	2020	2021	2022	2023
Total, '000 t	324.5	310.8	307.3	307.7	297.5	293.0
• per unit of production, kg/t ²	22.9	24.1	23.5	21.5	21.8	19.9
NO _x , '000 t	26.3	25.3	25.2	25.3	25.8	19.4
• per unit of production, kg/t ²	1.9	2.0	1.9	1.8	1.9	1.3
SO ₂ , '000 t	31.2	29.1	30.5	30.1	29.7	29.8
• per unit of production, kg/t ²	2.2	2.3	2.3	2.1	2.2	2.0
Dust emissions, '000 t	23.8	22.0	22.4	20.1	19.6	18.8
• per unit of production, kg/t ²	1.7	1.7	1.7	1.4	1.4	1.3
CO emissions, '000 t	239.9	231.1	226.1	229.3	219.1	223.8
• per unit of production, kg/t ²	16.9	17.9	17.3	16.0	16.0	15.2
Volatile organic compounds, '000 t	2.7	2.8	2.6	2.5	2.8	0.6
Hazard class I substances ³ , t	1.3	1.2	1.2	1.1	1.1	1.0
• per unit of production, kg/t ²	0.09	0.10	0.09	0.08	0.08	0.07
Hazard class II substances ³ , t	483	460	426	412	553	535
• per unit of production, kg/t ²	0.04	0.04	0.04	0.03	0.04	0.04

¹ The Company does not report separately persistent organic pollutants because most of them are not regulated in Russia.

² Specific indicators of existing emission of controlled substances for NLMK Group are based on production output of NLMK Group including its Europe output over the applicable reporting period. Data on emission of controlled substances are collected at all Group companies where emission is a relevant environmental aspect. Group-level emission indicators are calculated as a sum of individual enterprise emissions as disclosed in statutory reports to supervisory authorities.

³ For the Russian sites of NLMK Group only, since the emission hazard classes are specified only in the environmental legislation of the Russian Federation, and this information is not collected for international companies of the Group.

Gas purification plants competence centre

400 aspiration systems
at NLMK Lipetsk

5 mg/m³
all equipment conforms to the best available technologies

99.9%
purification efficiency

17,000 bag filters
replaced in 2023

- Purification systems technical condition was assessed
- Root causes impacting the **efficiency of purification systems** identified
- Measures ensuring **target performance** implemented
- **Standard** for design, procurement, construction, use and repair of gas purification equipment developed
- The Company's employees and contractors are being **trained**

Future emission reduction projects

NLMK Group adopted an Environmental Programme in 2021. Emission reduction projects remain a focus for the management and will continue to receive a large portion of environmental investment. Major future projects to reduce air emissions include new dedusting and desulphurization systems for the Sinter Plant, revamp of dedusting at coking operations of NLMK Lipetsk, and installation of a dust-free coke discharge unit in Zarinsk. The projects aim to reduce emission of dust, carbon monoxide, hydrogen sulphide, and sulphur oxides.

Under the auspices of the Ecology Federal Initiative, the Company will continue to take action for reduction of its emissions within allowances. The expected emission reduction is several dozen thousand tonnes. Operational improvements within coke and chemical operations will continue in 2024, aiming to reduce emissions of benz(a) pyrene and phenol.

The Company will further pursue its dedusting repair programme, launched in 2023. The sites' operational budgets now include specially earmarked funds for repair of dedusting systems, which helps maintain

effectiveness of the treatment facilities and prevents equipment failures. Completion of commissioning of the Ladle Furnace Unit No.3 at BOF Shop No.2 of NLMK Lipetsk is due in 2024. The unit is equipped with a gas treatment installation, rated at 252,000 Nm³/h, in order to ensure compliance with acceptable workplace dust levels. Bag filters are used to clean gas to a residual dust content under 5 mg/Nm³, which is in line with BAT levels. Cleaning effectiveness is 99.7%.

Stoilensky plans to carry out repairs of electrical filters at its Pelletizing Plant. Emission by the Pelletizing Plant accounts for 95% of the site's total, which makes dedusting at the PP a major focus of attention, including a schedule of regular repairs. The plan for the next stage is to develop a more effective and efficient procedure for maintenance and repair of its dedusting facilities.

Altai-Koks will continue operational improvements aimed at shortening the opening times of coke-oven doors. Previous measures have already reduced visible emissions considerably. Further evolution of this project will include deployment of machine vision to enable real-time control and reduction of gas emission from oven doors.

Water resources

NLMK Group seeks to eliminate all impacts on water resources through complete cessation of industrial effluent discharge and through reuse of water resources.

A major role in this effort is given to implementation of closed-loop water systems at Group sites.

The regions where the Group operates enjoy a high availability of water resources¹. The Group has no operations in water-stressed areas².

Water-related risks in NLMK's focus

The assessment of climate risks relies, among other things, on an analysis of water availability risks in terms of potential shortages and risks of flooding or drought.

Water scarcity risk

Forecasts beyond 2025 potentially put the sites in Zarinsk, Farrell, Clabecq, Lipetsk and Stary Oskol at risk of water scarcity, which, however, should not have a major impact on their operations. In total, water availability risks were found to account for less than 1% of the overall estimated value at stake in case climate risks materialize. In 2023, there was no conflict of interest with stakeholders associated with the risk of water shortages.

Flood risk

No flood risks have been observed for a long period of time in the regions where NLMK Group operates. The latest flood event was reported in the region in June 2016; however, there was no disruption to operations at NLMK Lipetsk due to mitigation measures in place at the site (sedimentation ponds and shop floor water pumps).

Drought risk

The risk of drought was also analyzed for the Lipetsk Region. The region did experience this natural phenomenon in the past, but it did not have a significant impact on the operation of NLMK Lipetsk. The assessment of NLMK's Lipetsk operations during historic droughts supports the conclusion that vulnerability at the site to droughts is low.

Priority focus on water reuse and recycling [GRI 2-25][GRI 3-3][GRI 303-1]

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.

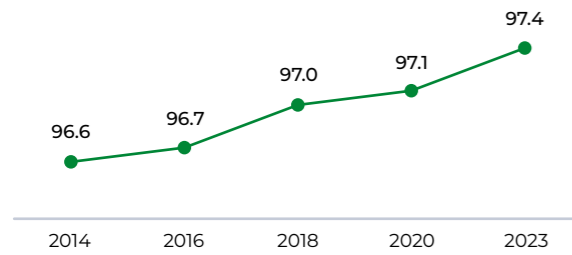
Closed-loop water systems have been put in place at all main sites of NLMK Group. These solutions include both local systems for individual facilities and entirely

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, where over 97% of water gets reused. At 3.2 billion m³ of water, this is comparable to the volume five Suez Canals, except that this water is not only not withdrawn from the environment but is also recycled numerous times following on-site treatment. The remaining 2.5% is evaporation, which is made up with new intakes.

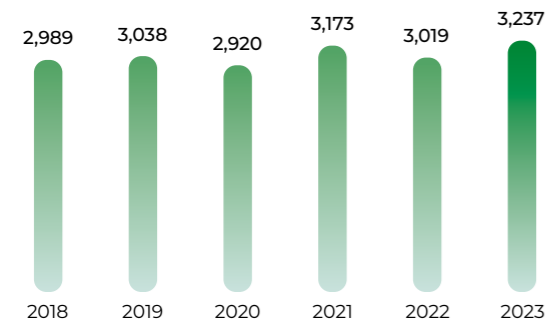
¹ Source: State Report on the Condition and Use of Water Resources in the Russian Federation, http://www.mnr.gov.ru/docs/gosudarstvennye_doklady/.

² According to the UN methodology, a region or a country is considered to be water-scarce if its annual water supply is below 1.7 thousand m³ per person.

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



Volume of recycled water at NLMK Group companies, m m³

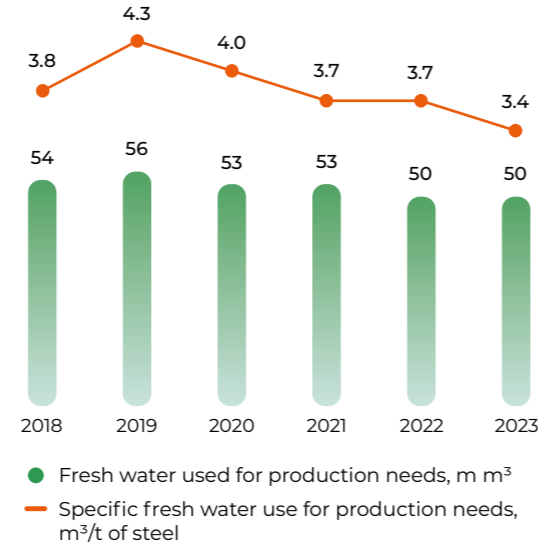


The Company seeks to reduce its consumption of potable water as well. Over the past five years, it went down 24%, from 10.4 to 7.9 million m³, to a set of measures that eliminated leakages and promoted the culture of efficient and aware water use under the Green Office Programme.

Water consumption

The Company withdraws fresh water from the environment only to make up for the evaporation in the closed-loop water systems. The Group companies do not receive water from wetlands included on the Ramsar List of Wetlands of International Importance or from water bodies located within environmental conservation sites. All intake is fresh water (mineral content is less than 1 g/l). The activities aimed at prevention of discharge and water recycling support a sustained downward trend in fresh water consumption. [GRI 303-3]

Fresh water used for production needs by NLMK Group [GRI 303-3]



The volume of fresh water use for production needs by NLMK Group companies in 2022–2023 was the lowest over the past 10 years

Fresh water intake by NLMK Group, by source and region, and use of withdrawn water, m m³ [GRI 303-3] [GRI 303-5]

Indicator	2018	2019	2020	2021	2022	2023
Water use, total, including	64.0	66.0	60.3	60.6	58.1	58.1
• for production needs	54.3	55.6	52.9	52.9	50.2	50.2
• for household needs	9.8	10.4	7.4	7.7	7.9	7.9
Specific water consumption for production needs, m³/t of steel	3.8	4.3	4.0	3.7	3.7	3.4
• Share of used water, % of water withdrawal (intake)	48%	49%	48%	46%	45%	44%
• Unused water ¹	72.3	70.3	67.9	71.7	73.4	71.6
Fresh water withdrawal (intake) by NLMK Group, including	134.6	134.8	126.8	130.9	130.1	132.3
• Russian companies	99.9	99.0	94.2	97.1	98.0	101.5
• international companies	34.7	35.8	32.7	33.8	32.1	30.7
Industrial water	116.1	116.7	109.5	112.1	111.3	112.8
• Surface water, including	59.6	61.0	57.7	59.2	55.9	53.7
– Russian companies	27.8	28.2	27.6	27.9	26.2	25.5
– international companies	31.8	32.8	30.1	31.2	29.9	28.2
• Groundwater, including	56.5	55.6	51.7	52.9	55.3	59.1
– Russian companies	54.2	53.2	49.7	50.9	53.6	57.0
– international companies	2.3	2.4	2.0	2.0	1.7	2.0
• Rainwater collected and stored by the Group, including	0	0	0	0	0	0
– Russian companies	not measured	not measured	not measured	not measured	not measured	not measured
– international companies	0	0	0	0	0	0
Potable water	18.5	18.1	17.4	18.8	18.9	19.4
• Surface water	0	0	0	0	0	0
• Groundwater, including	17.8	17.5	16.9	18.3	18.5	19.1
– Russian companies	17.5	17.2	16.6	18.0	18.2	18.8
– international companies	0.3	0.3	0.3	0.3	0.3	0.3
• Municipal water, including	0.6	0.5	0.4	0.5	0.4	0.3
– Russian companies	0.4	0.3	0.2	0.3	0.2	0.2
– international companies	0.2	0.2	0.2	0.2	0.2	0.2
Urban wastewater converted for treatment	1.7	1.5	1.4	1.4	1.4	1.4
Water consumption ²	40.0	43.7	41.4	40.9	42.8	46.3
Specific consumptive water use, m ³ /t of steel	2.8	3.4	3.2	2.9	3.1	3.1
Recycled water supply	2,989	3,038	2,920	3,173	3,019	3,237
Recycled water in the total water consumption, %	96.9%	97.0%	97.1%	97.3%	97.1%	97.4%

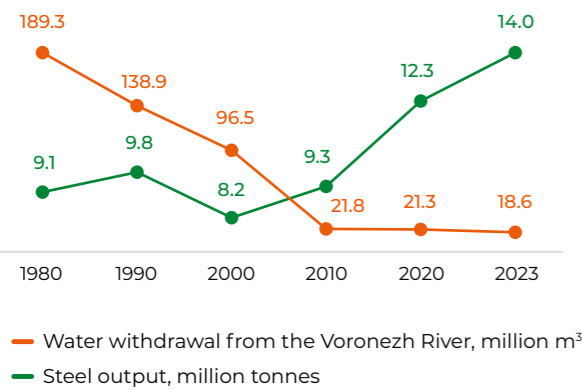
¹ Unused water is the water returned with an unchanged composition compared to intake: drainage water from the mines that is discharged without being used in the production process, as well as direct-flow water used for non-contact cooling of production units, lost water and third-party water. This water is not consumed in the production process and is not polluted.

² The difference between water intake, water returned without use, and water discharge off-site. The indicator calculation has been revised vs. the 2021 report: the new calculation excludes drainage water from Stoilensky pit moved to the tailings pond without prior use as it is returned unchanged into the natural water cycle.

10x

reduction in fresh water intake by NLMK Lipetsk from the Voronezh River since 1980 (from 189.3 to 18.6 m³)

Fresh water withdrawal from the Voronezh River vs. steel output by NLMK Lipetsk [GRI 303-3]



Water discharge

[GRI 303-2] [GRI 303-4] [GRI 3-3]

The Group's companies are focused on reducing the volume and improving the quality of wastewater generated. 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 2023, compared to 2018, the pollutants discharge was reduced by 50% already. This result was already significantly above the original target. Going forward, NLMK Group seeks to bring industrial effluent discharge by its Russian companies to zero.

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. There is no discharge of untreated water. The trend of the total mineral content in effluents shows an improvement in the quality of wastewater. From 2018 to 2023, total mineral content decreased 37%, or from 0.35 to 0.22 g/l.

Compliance with water discharge regulations is subject to regular monitoring by supervisory bodies as well as the Company's internal environmental service.

Measurements are regularly carried out in accordance with permits by accredited laboratories at all discharge points. 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 were no cases of water level approaching critical levels in 2023.

The Group's international companies mainly discharge water that is used for cooling equipment in once-through systems (unlike the closed-loop systems at the Russian sites). 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.

The Group's flagship site NLMK Lipetsk has not made direct industrial effluent discharges into the Voronezh River since 2009. Furthermore, it pursues sustained efforts to reduce discharge of household effluents as well. At the end of 2023, compared to 2018, the volume of effluent discharge reduced by 7.5 m³ (29%). The methodology for calculating the flow of pollutants is disclosed in the Appendices to the Report.

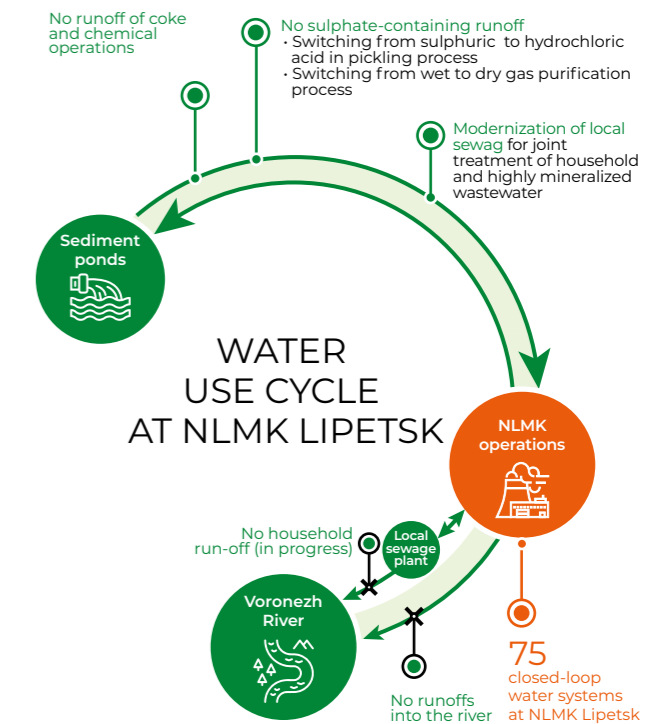
by **8,700** tonnes -50%

pollutants discharge into the water bodies vs. 2018

Total volume of water discharge by type, quality, and receiving water body, m³ [GRI 303-4]

Indicator	2018	2019	2020	2021	2022	2023
Total used water discharge by NLMK Group ¹ , including	25.6	23.6	20.2	20.4	17.9	18.1
• NLMK Lipetsk, household effluents	8.6	7.3	6.7	6.0	6.2	6.4
• Stoilensky	7.6	6.5	4.9	6.4	3.0	3.6
• Other Russian companies	1.2	1.0	0.9	0.9	0.8	0.9
• International companies	8.2	8.8	7.7	7.1	7.9	7.2
Specific water discharge ¹ after use, m ³ / t of steel	1.8	1.8	1.5	1.4	1.3	1.2
Total water discharge², NLMK Group	50.0	48.6	42.9	45.5	41.3	40.5
to surface water (rivers, lakes, reservoirs and canals)	46.6	45.6	41.5	44.1	40.0	39.0
• including to seawater	0.3	0.3	0.3	0.3	0.7	1.0
Converted to third parties for treatment	1.8	1.6	1.4	1.4	1.2	1.4
Specific total water discharge ² , m ³ / t of steel	3.5	3.8	3.3	3.2	3.0	2.7
Water discharge as % of total water supply	2	2	1	1	1	1
Share of unused water (drainage water, rainwater, non-contact cooling, third-party effluents) in the total volume of water discharge, %	49	51	53	55	57	55
Pollutants discharge into water bodies with effluents, '000 t	17.5	15.3	12.5	11.8	7.7	8.8
Effluent mineralization ³ , g/l	0.35	0.31	0.29	0.26	0.19	0.22

Wastewater after use, m³ [GRI 303-4]



¹ Effluent mineralization is calculated as the ratio of pollutants' mass to effluent volume. The total mineral content in withdrawn water across all sites is less than 1 g/l.

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 2023, the volume of such unused water totalled 9.9 m³.

³ Calculated as the ratio of pollutants' mass to effluent volume.

Water use projects completed in the recent strategic cycle

Closed-loop water systems

97.4%

share of recycled water supply

11

Production sites with closed-loop water systems

3.2 bn m³

of water circulates in closed-loop water systems

Implemented:

1. Reconstruction of NLMK Lipetsk wastewater treatment plants
2. NLMK Lipetsk saline effluents utilized for production purposes
3. Closing the water system at NLMK Kaluga
4. Closing the water system at NLMK Ural
5. In-depth study of closed-loop water system viability at VIZ-Steel
6. A project is being implemented to use treated household wastewater in the NLMK Lipetsk water supply system
7. Initiation of a project to divert mine drainage waters into the river at Stoilensky

Reconstruction of NLMK Lipetsk wastewater treatment plants

Improving the quality of household wastewater

Technical re-equipment of aerotanks

RUB 118.5 m
invested

Overhaul of secondary settling tanks

RUB 35 m
invested

Overhaul of sand traps

RUB 10.5 m
invested

Replacing old grilles

RUB 6 m
invested



Technical re-equipment of aerotanks



Overhaul of secondary settling tanks

Planned water stewardship projects

Complete elimination of effluent discharge at NLMK Group's Russian companies

In the coming two years, NLMK Lipetsk is to implement a project to recycle utility discharges from the site and the city for re-use in production following treatment. Effluent and rainwater discharge from NLMK Lipetsk into the Voronezh River has been eliminated since 2009. The new project will continue the advancement towards zero discharges. It will enable the replacement of river water in local water recycling systems and a self-sufficient water supply system from household effluents following treatment. As a result, consumption of river water will go down by 6.5 m³ per year, the site's municipal discharge into the Voronezh River will be eliminated, and Lipetsk's municipal discharges will decrease by 18% through NLMK Lipetsk's current treatment capacity. The project investment will exceed RUB 700 million

improve its depth. The site will, thus, eliminate discharge of used water from production, return clean water into the environment, and pollutants discharge into the water body will decrease by 100–150 tonnes. In 2024, it is planned to launch construction and installation of water ducts and the drain shaft.

Stoilensky also plans in 2024 to carry out a review of its system for automated monitoring of effluents into the Chufichka River, which is the planned destination for mine drainage water that is not polluted in processing operations. The system will support timely tracking of changes in the chemical composition of ground water for adjustment of well operation as well as acquisition of data for calculation of an average indicator for the next reporting period and an objective assessment of impurities in the water.

VIZ Steel plans to completely eliminate discharges from the production site into the Iset River. Rearrangement of rainwater usage has been ongoing and the evaporator plant project to remove salts from water will be launched in 2024, which should reduce the concentration of dissolved and suspended matter in the recycling loop. Water after treatment will be reused.

In 2024, NLMK La Louvière will install an oil catcher at end-of-pipe near the river. This will reduce the risks of petroleum product contamination of the water body. Investment in the project will amount to EUR 1 million.

Overall, the effort to completely eliminate used-water discharges is a dedicated area in the upcoming strategic cycle

In 2023, Stoilensky's project to eliminate industrial effluents was submitted for state and environmental expert reviews. The project will separate drainage water flows pumped up from the mine, whereby clean water is isolated and fed directly into the Chufichka River near the site. This will make the river cleaner and

Recycling programme

[GRI 3-3] [GRI 306-1] [GRI 306-2]

As a vertically integrated steelmaking company, NLMK faces generation of mining by-products and metal production wastes. Mining waste accounts for 98% of the Group's total waste generation, but has a negligible impact on the environment being a non-harmful inert material in the form of the top soil level which is removed for mining. Out of the remaining secondary resources, 99% of the Company's waste and recyclables is recycled back into production, which prevents environmental impacts.

The Company has minimised generation of chemical waste:

- waste pickling liquors are recovered and reused
- recovery sludge is reused in sinter production
- acidic and alkaline materials used in lab tests or production processes are all neutralized, which prevents formation of liquid chemical waste that contains acidic and alkaline components
- zinc solutions that remain after production of galvanized steel are reprocessed into commodity zinc
- secondary resources generated during application of coatings are sold to recyclers

Handling of hazardous waste by the Group's companies is done in compliance with strict regulations and is being continuously controlled by supervisory authorities.

NLMK Group operates its own scrap collection and processing facilities that advance the circular economy vision. It recycles scrap, recovered dust, and sludges. Construction materials are made from such by-products as slag, chalk, sand, crushed concrete, etc.

Overall, 99.9% of waste generated by NLMK Group's Russian companies in 2023 is non-hazardous. Other types of waste are handed over to specialized federal operators for neutralization and disposal.

Scrap ferrous metal is a valuable raw material that can be reused in steelmaking. This puts NLMK Group's operations into the loop of the circular economy: 100% of its products can be recycled or reprocessed without a deterioration in quality.

19%

More than 19% of the Group's steel output is already with recycled metal inputs

18 million tonnes

The total processing volume of secondary raw materials across NLMK Group

Tailings dams and hydraulic engineering structures

Built in 1984, Stoilensky's tailings dam is the Company's only facility in this category. The Group duly informs local communities about the existence of the tailings dam and holds public hearings regarding the development of the facility. All development projects of the company are coordinated with stakeholders.

The Stoilensky tailings facility uses an efficient and environmentally friendly method of processing waste rock after beneficiation, which involves the extraction of liquid (dehydration) and further forced transportation of tailings in a condensed state. This allows for savings in natural resource management: 80% of process water used for transportation is recycled into processing of ore. Additionally, better resilience of thickened tailings to weathering significantly reduces the dust levels at the tailing dam. As safeguards have been put in place to prevent excessive water from entering into the facility, the overflow risk is mitigated and pressure on the dams is reduced. Given that the tailings are thickening and measures are taken to ensure safety of hydraulic structures the risk of dam failure at Stoilensky is properly controlled and continuously monitored.

Waste generation has reduced by 400,000 tonnes over the last six years (down 40%). Recycling of iron-bearing materials in 2023 was at 100%. The total share of recycling, excluding processing of previously accumulated materials, amounted to 99%

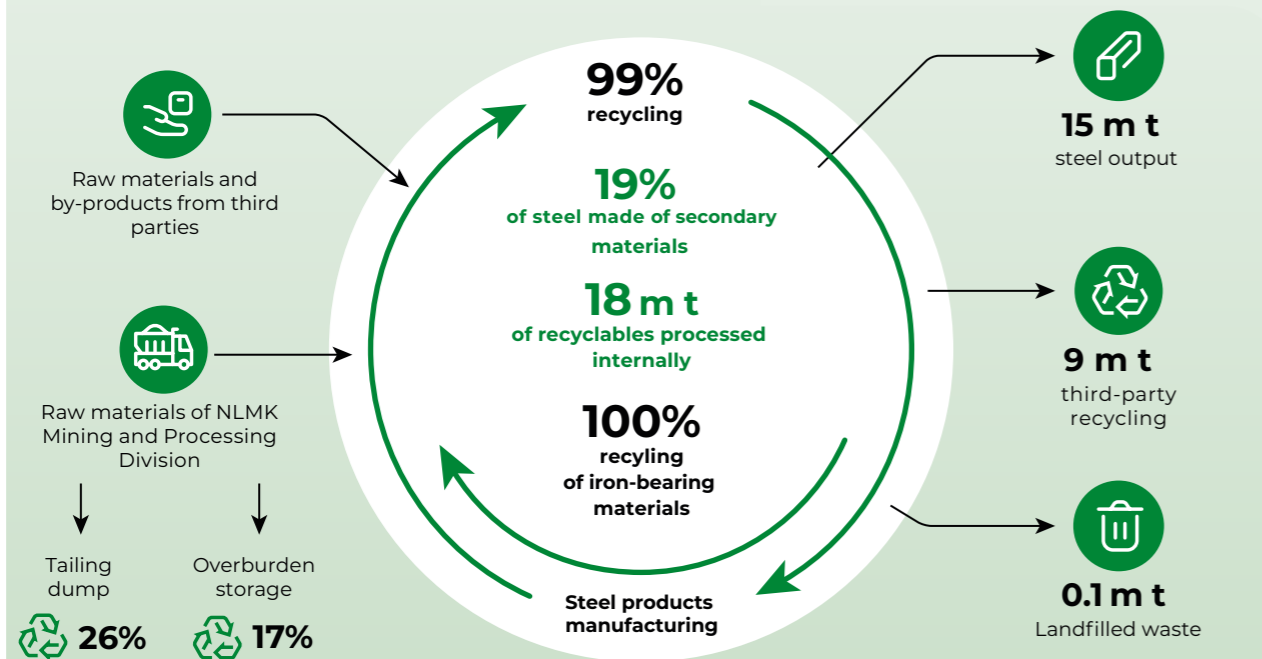
Waste generations scheme is provided in the Appendix to the Report.

Secondary resource handling and recycling performance

NLMK Group's secondary resource-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. The goal of the completed strategic cycle to increase secondary resource utilization and recycling in NLMK Group to over 92% - has been achieved, actual level is 96%.

The Group companies already process the absolute majority of secondary resources. The remaining part is handed over to licensed contractors who hold all the necessary permits. Streamlining of secondary resource handling has driven down the volume of waste stored at NLMK Lipetsk significantly: from 224,000 tonnes in 2017 to 2,000 tonnes in 2023, meaning that more than 200,000 additional tonnes has been processed. By creating a competitive environment that engages both final processors and consumers of secondary raw materials, as well as by optimizing logistical processes, the cost of third-party disposal in 2023 was reduced by 15% compared to 2021.

NLMK Group's map of material flows



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

Generation and usage of waste by NLMK Group's Downstream operations, *m t*
 [GRI 306-3] [GRI 306-4] [GRI 306-5]

Indicator	2018	2019	2020	2021	2022	2023
Waste generation¹	1.0	0.9	0.8	1.0	0.7	0.6
• hazardous ²	0.1	0.1	0.1	0.1	0.0	0.0
• non-hazardous	0.9	0.8	0.7	0.9	0.7	0.6
Secondary resources recycled in-house	1.7	1.8	1.9	1.2	0.2	0.1
• hazardous ²	0.0	0.1	0.1	0.0	0.1	0.1
• non-hazardous	1.7	1.7	1.8	1.2	0.1	0.0
Waste and secondary resources recycled in-house, total	2.7	2.7	2.7	2.2	0.9	0.7
• hazardous ²	0.1	0.2	0.2	0.1	0.1	0.1
• non-hazardous	2.6	2.5	2.5	2.1	0.8	0.6
Secondary resources recovered by third parties	0.7	0.8	0.7	0.9	0.7	0.6
• hazardous ²	0.1	0.1	0.1	0.1	0.0	0.0
• non-hazardous	0.6	0.7	0.6	0.8	0.7	0.6
Waste disposal at third-party landfills	0.1	0.1	0.1	0.1	0.1	0.1
• hazardous ²	0.0	0.0	0.0	0.0	0.0	0.0
• non-hazardous	0.1	0.1	0.1	0.1	0.1	0.1
Waste incineration (in-house + third parties)	0.0	0.0	0.0	0.0	0.0	0.0
Secondary raw materials accumulated at year-end	5.9	5.9	5.9	1.4	1.3	1.2
Recycling of secondary iron-bearing raw materials³, %	98	99	100	100	100	100
Recycling, total⁴, %	98	98	99	99	99	99

Generation and recovery of overburden and beneficiation tailings, NLMK Group's upstream operations, *m t* [GRI 306-3] [GRI 306-4] [GRI 306-5]

Indicator	2018	2019	2020	2021	2022	2023
Generation of overburden and beneficiation tailings at Stoilensky (mining waste)	46.6	53.7	61.4	64.6	72.5	72.0
Share of recovered Stoilensky overburden and beneficiation tailings, %	10	10	8	8	8	9
Generation of overburden at Stoilensky, Stagdok and Dolomit ⁵	39.8	51.3	60.5	60.7	67.6	62.2
Overburden recovery	10.4	14.8	17.3	17.2	15.1	10.7
Share of recovered overburden, %	26	29	29	28	22	17
Generated beneficiation tailings	19.5	20.5	21.4	23.9	24.1	24.4
Utilized beneficiation tailings	4.8	5.3	5.1	5.5	6.0	6.2
Utilized beneficiation tailings, %	25	26	24	23	25	26

¹ Excluding secondary raw materials recovered in-house and Stoilensky's overburden and beneficiation tailings.
² "Hazardous waste" includes I-III hazard class waste.
³ 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.
⁴ Recycling includes waste disposal and by-product recovery, excluding processing of accumulated raw materials.
⁵ The total volume of generated overburden by NLMK Group. 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.

Soil protection and recycling projects completed within the strategic cycle

Construction of a briquetting factory

~
RUB 5 bn
environmental investment

450,000 t per year
utilization of recyclables

100%
of iron-containing secondary raw materials are utilized

150,000 t
Reduction of CO₂ emissions

500,000 t
savings of iron ore raw materials

Slag dump recycling

5 m t
volume

25 ha
area

100%
recycling of secondary raw materials

350,000 t
secondary resources returned to production

444,000 t
savings of fossil raw materials

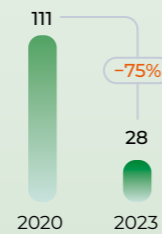
85,000 t
Indirect CO₂ emission avoided through iron extraction



Sales of used refractories

- In 2023 **155,000 t** of used refractories were recycled
- **Previously**, more than 20 types of mixed materials were stored together
- **Today** there are places for separate storage of materials
- **75%** refractory waste is sold to third parties
- **18% & 5%** come from scrap and iron waste, respectively, which are successfully utilized

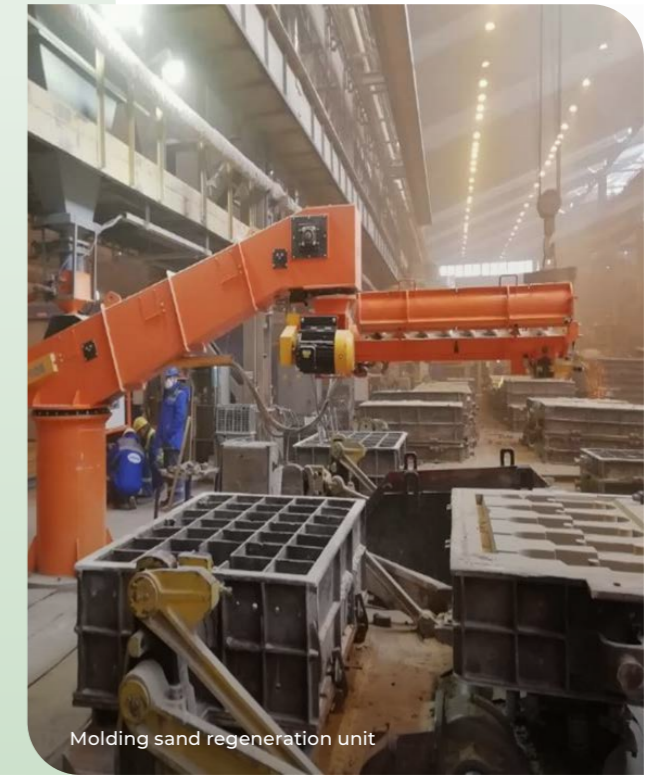
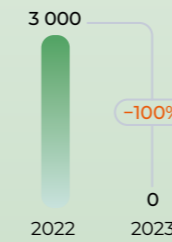
Costly disposal reduced through recycling, '000 t



Molding sand regeneration

- **25,000 t** of molding sand recycled in 2023
- **Previously** used molding sand was sent for costly disposal
- **Today** used molding sand is recycled and returned into production
- Purchased sand is replaced with regenerated sand

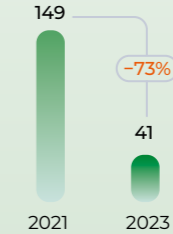
Costly disposal reduced through regeneration, t



Recycling of reinforced concrete

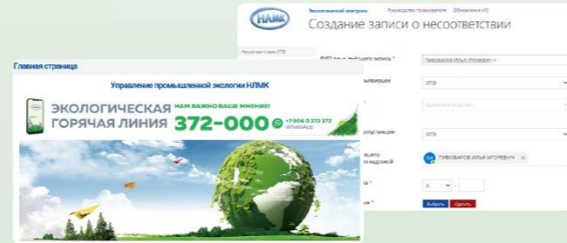
- NLMK Lipetsk has set up a **construction waste recycling site**
- **46,000 t** of concrete and reinforced concrete debris recycled
- The metal is separated and sent for reuse
- Crushed stone is produced for further sale

Costly disposal reduced through recycling, '000 t



Streamlining management of secondary materials

- Encouraging employees to sort low-tonnage secondary raw materials for further sale
- Development of Corporate university **online training programmes**
- Involvement of shop-floor employees in the process of monitoring the condition of the territory
- **Revision of existing documents** to simplify the procedures for handling secondary raw materials
- Development of the system of **internal environmental control of recyclables**
- The use of drones to increase the effectiveness of environmental control



Industrial ecology and internal environmental improvements website portal



Drone-made aerial photos

Interactive map of secondary resources

In 2023, NLMK Lipetsk installed additional 460 containers for separate waste collection (paper, cardboard, plastics, glass, batteries). An awareness raising campaign was mounted with video tutorials and guides as well as an interactive map to locate the nearest recycling collection points. The map can be used both by NLMK staff and its counterparties, e.g., recyclers, buyers of secondary resources. The project seeks to further develop the in-house infrastructure for handling of secondary resources. This one initiative drove annual collection of waste paper up 24%.

QR-code tracking

In 2023, NLMK Group streamlined transportation of secondary resources, such as plastics, waste paper and glass, through deployment of QR codes at all collection stations. The code contains all the necessary details to issue the outbound transfer permit. This has cut shipment time by 44% and made the document flow entirely paperless. Another benefit is that fewer trips are now needed by 3rd-party vehicles, and the economics of secondary resources have improved as well. The project was implemented across all divisions, and drives a more efficient use of secondary resources

and promotes the culture of separate waste collection among staff and contractors alike. Another impetus to the separate collection culture was given in 2023 by introducing rewards for separate collection: employees who have contributed actively to collection and shipment of secondary resources may be entitled to a cash bonus.

New approach to dehydration of iron-bearing sludge

NLMK has successfully introduced a technology for sludge dehydration based on geotextile fabrics. The solution recovers sludge from the settling ponds, making it into a commercial product. Sludge is a secondary raw material that consists of dust captured by production gas cleaning facilities. To make it a marketable product, sludge needs to be separated from excessive water through geotextile tubes. Iron-bearing sludge is pumped into the tubes together with the water and pressurized, which expels the water from the tube to obtain a solid residue. This dehydrated secondary resource can be reused in production of steel products. In 2023, total processing of sludge was 53,000 tonnes, and an additional 200,000 tonnes are to be processed in 2024–2025.

Utilization and sorting of secondary raw materials at Altai-Koks

Altai-Koks launched a pilot for processing of chemical secondary resources from the Recovery Shop. The core technology is thermal airless destruction that yields synthesis gas as a by-product. These materials used to be stored without utilization. In 2024, it is planned to run trial operation of the new installation with integration into production operations.

The site has also set up sorting of scrap from acid-resistant equipment whereby unusable scrap is separated out. Therefore, over 2023, the site recovered and processed over 400 tonnes of secondary raw materials that used to be deposited in local landfills as waste.

Waste to fuel

Annually, NLMK Lipetsk generates around 7,600 tonnes of wood waste, of which 84% (6.4 k t) is disposed of. A project was launched in 2023 to use it for charcoal production that is useful in other production processes. Alongside the economic gains, the project reduced CO₂ emission by 5,400 tonnes per year and drives the share of recycling. Laboratory tests conducted in 2023 corroborated the feasibility of such biofuel for production needs and it is planned in 2024 to launch processing of wood waste into fuel.

Planned projects in soil protection and recycling

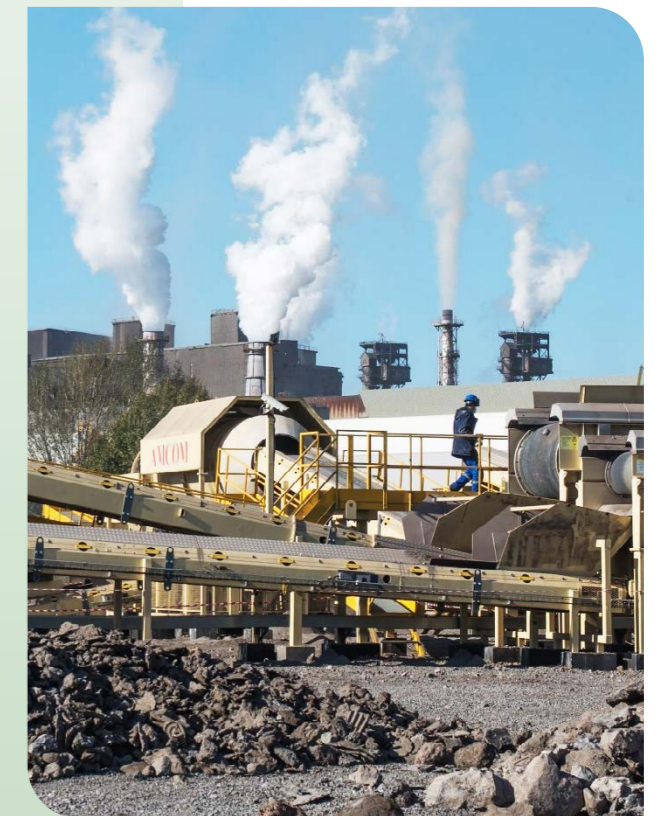
Secondary raw materials recycling

>40

strategic projects on recycling

Key areas of optimization:

- Recycling of wood waste into bio coal
- Recycling of reinforced concrete waste
- Regeneration of the molding sand
- Reuse of all iron-containing sludge in the production process
- Processing of complex categories: tires, sleepres, batteries
- Separate collection and sale of packaging – plastic, pallets, bigbags, etc.
- Separate collection of plastic, paper, and metal as part of the “Green Office” initiative



Fostering eco-friendly culture

Training

[GRI 2-24]

NLMK devotes special attention to fostering a culture of environmental awareness among its employees and local communities in the regions where it operates. The Group developed a series of educational courses for the benefit of various stakeholders, including its staff, local residents, counterparties.

NLMK Group managers annually take part in different public events: conferences, fora, seminars and webinars on the environment and climate, and sustainability, as well as in working groups. Such meetings address the matters related to the sustainable development agenda, including climate, innovations and digitalization for the environment, recycling, and promotion of eco-friendly culture among staff and contractors.

At least **10%**

or approximately 5,000 of employees take environmental training sessions and development courses every year

NLMK at VDNKh

In the spirit of sharing its environmental achievements and practices, and driven by the "Better Environment — Better Self", motto NLMK Group presented a booth called Development Park at the Russia Expo held at VDNKh. NLMK's booth replicates a cosy urban park. The centrepiece of the park is a magic lime tree, the symbol of Lipetsk, where the Group's flagship production site, NLMK Lipetsk, is located. All guests are welcome to make a wish and tie it onto the tree branches. The park's visitors can learn about the charitable, environmental and social projects of the Company. There were instructional interactive games and a VR area where anyone could explore NLMK Lipetsk that is set to celebrate its 90-year anniversary in 2024. As part of the expo programme, the Company also organized master classes: Climate Change and Climate Agenda in the Ferrous Metals Industry, Implementing Circular Economy in Production, Recycling: From Generic to Specific. NLMK's Case Studies, Digital Solutions for the Environment – NLMK's Practical Experience.

The Green Office initiative

Green Office is a comprehensive programme, which aims to enhance the commitment of the Group's employees to eco-friendly culture.



Collection sites for secondary raw materials

- Over **460 containers** installed for the separate collection of waste
- Environment friendly bins made of recycled plastic installed
- **Over 200 trays** are placed for dry used paper
- Rooms for paper accumulation and shredding
- In 2023, **323 tonnes of paper and cardboard** were collected and sent for processing at NLMK Group enterprises
- **Employees are encouraged** to participate in the initiative
- **Incentive system for employees** to sort low-tonnage secondary raw materials

323 tonnes

of paper waste collected and handed over into processing, which is 10% more than in 2022, and equals to 5,500 saved trees

Biodiversity and ecosystem development

[GRI 3-3] [GRI 101-2]

NLMK Group recognizes the importance of preserving biodiversity in the regions where it operates. NLMK Group companies do not operate on environmentally protected lands or in areas of critical biodiversity. 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. Still, industrial sites do have an impact on biodiversity in and around the areas of their perimeter.

The main documents that set out the Company's obligations in the field of reducing the impact on biodiversity are the Sustainable Development Policy and the Policy of the Integrated Management System. In 2023, the Company developed and adopted corporate Regulations of Monitoring and Conservation of Biodiversity. The Regulations establish the procedure for identification of risks and threats to biodiversity, and the process for development of monitoring and conservation programmes for biodiversity. The Company conducts assessment of its environmental effects and regular monitoring of biodiversity, including development of conservation programmes. In cases where negative effects on biodiversity are unavoidable, the Company develops mitigation programmes, including offset activities. [GRI 101-1]

In 2023, NLMK Group partnered with the Institute of Ecology and Evolution of the Russian Academy of Sciences to carry out assessment and monitoring of biodiversity on and around the sites of NLMK Lipetsk and Stoilensky. The study looked at land and water flora and fauna in order to come up with recommendations on prevention, minimisation, rehabilitation or compensation of biodiversity impacts. These efforts have translated into an evidence-based programme for biodiversity conservation. It is planned to set up a network of biodiversity monitoring stations to evaluate the effectiveness of the programme. [GRI 101-4] [GRI 101-5]

Biodiversity impacts of the Group's main site, NLMK Lipetsk, are mostly related to noise pollution and landscape disruption with new industrial build. These impacts are mitigated, however, thanks to large volumes of planted greenery and trees. Even within the site perimeter, the impact on soil biota is moderate. As NLMK Lipetsk is located within the city limits, the impacts generated by the city are actually higher than those of the site. [GRI 101-6]

Stoilensky sits at the intersection of areas impacted by other industrial facilities and large cities that contribute to the burden on biodiversity in the region too. That region is also marked by high pesticide exposure of farmlands, among the highest in Russia, which is another negative factor for the state of biodiversity. The site's own main impacts on biodiversity are dust and noise pollution, and the modification of groundwater conditions. Assessment

of biodiversity has shown that there are no signs of biodiversity depression onsite Stoilensky. This means that its production activities have a minimal impact on flora and fauna or their habitats. The impacts from other sources, especially so from agriculture, exceed and effectively negate the influence of Stoilensky.

NLMK Group pursues biodiversity conservation projects on a systemic basis. Respective measures are in place at all Russian sites of the Group. They include [GRI 101-8]:

- research work
- cooperation with nature reserves
- replenishment of rare bird populations
- release of juvenile fish into rivers and reservoirs
- land reclamation
- planting of trees and shrubs
- maintenance of forest plantations

The Group's total investment in biodiversity conservation in 2023 amounted to RUB 130.7 million

NLMK Group companies offset fish stocks

Every year NLMK together with specialized organizations release juvenile fish into water bodies in order to replenish fish stocks.

In 2023, the Altai-Koks environmental team released over 11,000 juvenile carp into the Ob River, and repaired fish protection devices at the river intake facility. NLMK Lipetsk inspected the operation of its fish protection devices.

NLMK Lipetsk continues renewal of its planted greenery

In 2023, as part of a 5-year programme for the replenishment of the site's greenery, more than 1,400 new trees and 5,800 shrubs were planted on the industrial site and along the internal roads, and over 20,000 square meters of lawns and flowerbeds were arranged and renovated. Plants occupy about 40% of the site's territory.

The stocktaking of green spaces at the industrial site continues for the fifth year now. During this time, scientists have evaluated almost 79 hectares of land. The main goal of the inventory is to maintain a stable ecosystem at the plant's territory.

Cooperation with stakeholders

Stoilensky continues research and monitoring of biodiversity jointly with the Institute of Regional Biodiversity Conservation

In relative proximity to the production site of Stoilensky lies Yamskaya Steppe, one of the sections of the Belogorye Nature Reserve. Since 2020 NLMK has been carrying out biodiversity activities and monitoring there. In 2023, the two parties conducted joint research work and environmental monitoring

of the impact of Stoilensky's south-western tailings dump on biodiversity, including the inventory of biological diversity, assessing the condition of rare and endangered species of plants and animals, validating the monitoring methods and air quality and surface water evaluation, covering also the Yamskaya Steppe.

Swan Lake Environmental Park: a natural indicator of NLMK's commitment to a clean environment and biodiversity

Swan Lake Environmental Park 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 700 birds of 52 species, including eight 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.

In 2023, the park brought in 20 additional specimens from the Divo Ptitsa Bird Nursery in the Moscow Region. Moreover, birds brought to the park in 2022 gave birth to around 150 chicks, contributing to the total brood of 204 chicks of 20 species.

Cooperation continued in 2023 with the Oka Nature Reserve nursery of rare crane species under the Eurasian Cranes Conservation Programme. Experts studied the cranes at the park and entered them into the Russian register of cranes of the Oka Reserve.

Land reclamation and rehabilitation

The Group regularly implements measures 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. The reclamation programmes are being implemented as planned. In 2023, rehabilitation was carried out on 12 hectares of land.

Stagdok restored 27 hectares of land

In 2023, Stagdok reclaimed 27 hectares of land disturbed by mining operations. Stagdok carries out mining and biological recultivation annually as it continues to develop its flux limestone deposits. Biological recultivation of industrial land is also done every year as part of the site's environmental efforts. Once the 5-year biological reclamation is complete, the land is handed over into forestry or farming operations. Over the last five years, Stagdok restored 20 hectares of forests and 31 hectares for crop farming. The newly restored farmlands grow wheat, sunflower and other crops.

Stoilensky reclaims its tailings dumps

In 2023, Stoilensky reclaimed 3 hectares of land on the slopes of its tailings dam. Over six years of reclamation efforts, 63 hectares of land was treated, or 6% of the total dump area. Reclamation of industrial land is done every year as part of the site's environmental efforts. Biological recultivation of dam slopes involves blanketing of land with a layer of fertile soil and planting of grass. This promotes formation of sustainable ecosystems and improves the look and feel of the premises.

The area occupied by the Group companies and reclaimed land, *ha*

Indicator	2019	2020	2021	2022	2023
Area ¹	11,268	11,268	11,257	11,257	11,276
Land rehabilitated	15	10	46	31	12

Planned biodiversity conservation projects

NLMK Group Biodiversity Conservation Programme for 2024 includes such measures as planting tree seedlings, maintenance of planted greenery at Group sites, release of over 5,000 juvenile fish at Altai-Koks

to replenish aquatic biological resources, and continued biodiversity research and monitoring conducted jointly with specialized research institutes.

¹ Data have been adjusted relative to the Sustainable Development Report 2022 following the changes in the asset structure of NLMK Group after divestiture of NLMK Long.