NLMK

ANNUAL
REPORT

2020

ENVIRONMENTAL
PROTECTION

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ENVIRONMENTAL PROTECTION

MAJOR THEMES

WATER
BIODIVERSITY
ATMOSPHERIC EMISSIONS
WASTE
SUPPLIER ENVIRONMENTAL ASSESSMENT
ENVIRONMENTAL COMPLIANCE

KEY EVENTS IN 2020

- Major overhauls of Blast Furnaces No. 4 and No. 6 and BOFs No. 2 and No. 3 completed at NLMK Lipetsk BOF Shop No. 2 with a total emission reduction of 9,000 tonnes
- Upgrade of the NLMK Lipetsk local treatment facilities and a set of projects to reduce wastewater discharge completed; at 2020 year-end, the volume of domestic wastewater discharge into the Voronezh River was reduced by 73% (industrial wastewater discharge seized in 2009) compared to the design target values before the upgrade
- A new section for waterless blast furnace slag cooling built at NLMK Lipetsk with a 3.5x hydrogen sulfide emissions reduction at the site

UNITED NATIONS GLOBAL COMPACT PRINCIPLES

- **Principle 7:** Businesses should support a precautionary approach to environmental challenges.
- **Principle 8:** Businesses should undertake initiatives to promote greater environmental responsibility.
- **Principle 9:** Businesses should encourage the development and diffusion of environmentally friendly technologies.

GLOBAL SUSTAINABLE DEVELOPMENT GOALS

$ 430 million
allocated to investment projects with an environmental impact as part of Strategy 2022

$ 183 million
allocated to operational and investment projects with an environmental impact in 2020

97%
of water in production is recycled and reused

99%
of waste recycled

Awards

The NLMK Lipetsk slag dump processing project was shortlisted for the *Excellence in Sustainability* category of the Steelie Awards held annually by the World Steel Association. Thanks to this project 25 hectares of land were reclaimed and 6 million tonnes of recyclables was processed thus avoiding the emission of 85,000 tonnes of greenhouse gases.

NLMK Lipetsk won the *Environmental Culture. Peace and Harmony* international competition, held under the auspices of the Vernadsky Non-Governmental Environmental Foundation, in the Environmental Culture in Industry and Energy category.

NLMK Group was awarded the gold medal of the 26th international industrial exhibition Metal-Expo 2020 for the construction of a dry slag cooling complex at NLMK Lipetsk.

For the fourth consecutive year NLMK Kaluga was a prize-winner in the regional *Eco Organization* competition. In 2020 the company took second place among major corporations in the *Environmentally Responsible Organization of Production* category.

Altai-Koks won the *Metals and Mining Company with High Social Efficiency* industry competition in the *Environmental Protection and Resource Conservation* category.

NLMK Lipetsk won the *Ecology – a Reliable Partner* national competition in the Best Project for Reducing Harmful Emissions into the Air, Ensuring Environmental Safety of the Air category.

NLMK Lipetsk was awarded with a Certificate of Merit of the Vernadsky Non-Governmental Environmental Foundation for active participation in the Green Spring national community clean-up and for supporting environmental initiatives.

NLMK Lipetsk topped the *Best Separate Waste Collection System* category of the *Green Healthy Office* competition.

OUR APPROACH TO MANAGING ENVIRONMENTAL PROTECTION

A responsible attitude towards the environment and the efficient use of natural resources are the key principles of NLMK Group's Sustainable Development Policy. The Group objectively assesses environmental risks and is committed to minimizing them. It allocates significant resources to various environmental programmes and the implementation of innovative technologies. Environmental protection is a top priority of NLMK Group's activities.

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

STRUCTURE

NLMK's management team is actively involved in the environmental management process:

- The Group's CEO and Board of Directors review environmental performance on an annual basis.
- The Strategic Planning Committee under the Board of Directors studies risks related to sustainable development, including those related to environment, atmospheric air, water resources, soil, biodiversity, and climate change (including greenhouse gas emissions), and approves the Environmental Programme and investments in environmental protection projects.
- The Management Board reviews key components of the Environmental Programme, approves its key performance indicators, and signs off on its execution at all the Group divisions.
- The Management Board's Investment Committee is directly involved in reviewing NLMK's Environmental Programme. The Investment Committee includes vice presidents and directors of NLMK companies. The Investment Committee devotes special attention to the results of the annual environmental assessment, approves the investment budget for projects aimed at reducing environmental impacts, and oversees the investment budget for the Environmental Programme and its execution.
- NLMK Vice President for Energy and Environment is responsible for ensuring the efficiency of environmental and energy management, overseeing the execution of the approved portfolio of projects, achieving environmental targets, and resolving key issues in the field of environmental protection.
- The Environmental Department coordinates environmental management, including managing environmental risks and implementing advanced eco-friendly technologies, and organizes activities which aim to reduce the Company's impact on climate. Each of the Group's companies has an environmental protection service, which is responsible for, among other things, daily monitoring of compliance with environmental requirements, supporting production units, assessing environmental risks, supporting the implementation of environmental projects, and implementing systems that assess the maturity of environmental indicators and improve environmental management.
- Laboratories of production and environmental control, which are part of NLMK Group's Environment function, monitor and measure the amount and/or composition of the emission, state of the air at the border of sanitary protection zones, the water quality in surface water, groundwater, industrial and household wastewater, drinking water quality, and soil condition at the NLMK Group production sites and sanitary protection zones, providing reliable data for the environment analysis, performed by the environmental protection services.

TARGETS AND KEY PERFORMANCE INDICATORS

NLMK recognizes the importance of efficient environmental management. As part of its Environmental Programme under Strategy 2022, which is reviewed and supplemented annually following a risk assessment, the following targets have been established:

- Minimizing the impact that the Group's Russian and international companies have on the environment, and complying with all applicable environmental standards and environmental risk management commitments
- Increasing the waste recycling rate
- Reducing specific air emissions
- Reducing the impact on water resources

An important highlight in 2020 was the update of the Group's 2023 target to reduce greenhouse gas emissions. NLMK Group intends to continue reducing greenhouse gas emissions while increasing its steel output by 2023. The specific emissions target is 1.91 tonnes of CO_2 per tonne of steel vs. 2.00 tonnes in 2018.

In 2020, NLMK Group set additional targets for reducing air emissions of selected substances and the impact it has on water, and for increasing the use of overburden, tailings, and iron-containing waste. The target indicators are given in the table.

NLMK Group Environmental Programme envisages the implementation of a portfolio of projects, which aim to achieve the targets mentioned above.

[1] For more details on greenhouse gas emissions see the climate section of the Report.

NLMK GROUP STRATEGIC ENVIRONMENTAL GOALS UNTIL 2023

Target	KPI	Units	2018 (baseline year)	2020	2023 target
Approved earlier					
Compliance of environmental indicators of NLMK Group with best practices	Specific emissions	kg/t of steel	18.9	19.8 (18.6[1])	18.0
	Waste recycling share	%	89	95	92
CO_2 emissions reduction program	Specific CO_2 emissions, stationary sources (Scope 1+2)	t/t of steel	2.00	2.10 (1.98[1])	1.91
Approved in 2020					
Air impact reduction by individual substance (specific emissions)	CO (NLMK Lipetsk)	kg/t of steel	16.3	16.8 (16.0[1])	14.8
	NO_x (NLMK Lipetsk)	kg/t of steel	1.2	1.3 (1.2[1])	1.1
	SO_x (NLMK Lipetsk)	kg/t of steel	1.7	1.7 (1.7[1])	1.6
	Dust	kg/t of steel	1.4	1.4 (1.2[1])	1.2
	1st Class substances RF Group	g/t of steel	0.08	0.08 (0.07[1])	0.07
Reduction of impact on water resources	Specific water discharge (NLMK Lipetsk)[2]	m^3/t of steel	0.8	0.7 (0.7[1])	0.6
	Pollutants discharge into water bodies	'000 t	17.6	12.5 (13.9[1])	13.2
Increased usage of overburden, tailings, and iron-containing wastes	Overburden usage share (Mining Division)	%	26	29	30
	Share of iron-containing waste utilization[3]	%	93	99	101

CERTIFICATION

NLMK works continuously to systematize its environmental management operations in accordance with modern international standards. NLMK Group employs an Environmental Management System, which enables it to identify and monitor environmental issues and the risks of its activities.

The ISO 14001:2015 standard has been implemented at 14 of the Group's facilities.

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

In 2020, NLMK Group was awarded Environmental Product Declaration (EPD) certificates for rebar

EPD certification will boost the competitiveness of NLMK products in the Northern Europe market (in Sweden, Norway, Denmark, and Finland), where special attention is paid to energy efficiency and environmental safety when selecting a product.

The Declaration includes a detailed description of the rebar product and how it impacts the environment throughout its life cycle: from feedstock and other materials used in production to the mode of transport used to deliver the product to consumers. It also discloses the main types of waste generated in rebar production, its amount and how it is disposed of. The volumes of emissions into the atmosphere and water bodies and the methods of handling them are also indicated as well as the recycling possibilities and methods after rebar loses its consumer properties.

The declaration assessment, carried out by an independent expert from the declaration developers, confirmed that the environmental performance in the production of NLMK Long rebar meets international requirements.

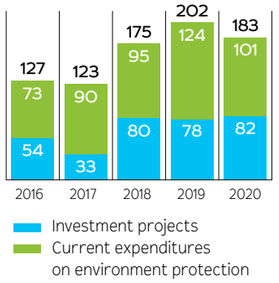
[1] Without the impact of temporary factors, which have to do with lower production.
[2] Industrial and household wastewater, total.
[3] Without overburden and tailings taking into account accumulated sludge.

INVESTMENT IN ENVIRONMENTAL PROTECTION

Each year NLMK Group commits significant resources to ensuring the accident-free operation of equipment and the implementation of investment projects that have an environmental impact. Spending on environmental management over the reporting period totalled more than $183 million, an increase of 44% over the past five years.

NLMK GROUP SPENDING ON ENVIRONMENTAL PROTECTION, $ M

GRI 103-2



In 2020, despite the pandemic, the financing of the Group's environmental investment projects increased by 5% compared to 2019. Due to these capital investments, major overhaul of Blast Furnaces No. 4 and No. 6 and BOFs No. 2 and No. 3 in the NLMK Lipetsk BOF Shop No. 2 was completed with a total impact on emissions reduction of 9,000 tonnes. In addition, local treatment facilities were upgraded, and a new section for waterless BF slag cooling was built, enabling a 3.5x reduction in hydrogen sulfide emissions.

MONITORING, CONTROL, AND COMPLIANCE

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

The Group employs environmental production monitoring procedures with support from accredited laboratories in order to monitor the implementation of resolutions, prevent non-compliance with effluent discharge standards, and monitor sources of emissions and atmospheric quality at NLMK Group companies. These procedures have been agreed with state supervisory bodies and are regulated by legal documents GRI 303-2.

Supervisory bodies conduct regular annual checks, both scheduled and unscheduled, of the Group's companies to ensure they comply with Russian legislation as well as stakeholder expectations. A total of 39 checks were carried out by local environmental supervisory bodies in 2020. No significant fines or non-monetary sanctions were imposed on NLMK Group, and no legal proceedings were brought against the Group seeking compensation for damage to the environment or to third parties. There were no environmental accidents since the beginning of NLMK Group's operations GRI 307-1.

PAYMENTS FOR NEGATIVE ENVIRONMENTAL IMPACT, $ M

Indicator	2016	2017	2018	2019	2020
Entire Group [1]	2.4	2.6	2.3	1.7	1.8
Russian assets	1.6	1.9	1.3	1.0	0.9

The payments have been decreasing over the last five reporting years, which is evidence of the reduction in the negative impact of the Group's businesses on the environment. In 2020, the share of over-limit payments in the structure of payments for the negative impact on the environment of the Group's Russian assets amounted to 19% (compared to 21% in 2018).

In 2020, NLMK Lipetsk implemented a project on video surveillance of the main sources of the company's emissions. A system of 63 video surveillance cameras enables identification of any visible emissions and allows reacting quickly to reduce the possible negative impact on the atmospheric air. Together with the video surveillance system, a system for analyzing NLMK's visible emissions is being developed using machine vision algorithms and deep learning methods. This will enable identification of any atypical emissions into the atmosphere recorded by video surveillance cameras; determine their location, and the estimated volume. Upon receiving the results, the production department experts and the plant's Industrial Environment Department will conduct detailed analysis and determine the causes of emissions. The video cameras cover the main facilities of the plant with significant gross emissions, and companies with a significant visible impact on the atmosphere at the plant border. The cameras also capture the view of the site as seen by Lipetsk residents. This new system will prevent and eliminate the causes of atypical emissions into the atmosphere.

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

The Company also engages its employees in the environmental control process. In 2020, NLMK Group's Lipetsk site launched a rapid response system for environmental incidents. By calling the hotline or leaving a WhatsApp message, the company employees and local residents can report an incident or discrepancy. The hotline for environmental issues helps to quickly record appeals and inform the residents directly about the real state of affairs. In addition, the solution complements the internal environmental improvement system (IEIS), designed to ensure the environmental safety of the plant. As part of this system, shop employees themselves regularly find and eliminate environmental inconsistencies or their root causes.

In 2020, NLMK Group launched a project to equip air emissions and wastewater disposal sources with automated monitoring and data transmission devices. The Company plans to allocate close to RUB 800 million for the implementation of this legislative requirement in the next five years. The programme for creating an automatic control system for emissions and water runoff for NLMK Group's Russian companies was approved by the Group's Investment Committee in November 2020.

NLMK Lipetsk introduced continuous environmental monitoring

The NLMK Lipetsk environmental laboratory successfully confirmed its accreditation following an audit by the Federal Accreditation Service. In addition, the laboratory was able to perform 17 new measurements of substances and compounds, as well as measure the level of industrial noise in line with best international practices.

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

In 2020, the laboratory started testing the systems for online monitoring of air pollution. These are software and hardware complexes for live monitoring of substance concentrations. They include compact automatic measurement modules and information systems with a reporting function. Following the pilot tests, it is planned to install ten monitoring complexes in Lipetsk for continuous monitoring of the state of atmospheric air by meteorological parameters and 21 pollutants. The installation of online monitoring systems will enable NLMK environmental experts to obtain the most objective and complete information about the state of the city's atmosphere, respond to changes, and take necessary measures in case of deviations.

Also in 2020, the industrial and environmental control laboratories began implementing the Ecology Laboratory Information System (ELIS), which is expected to automate processing, storing, and creating reports based on the measurement results. In the ELIS, measurement data are received directly from laboratory equipment, measurement protocols are automatically generated, and data on previous measurements are stored. The implementation of ELIS will reduce the probability of errors in calculations, confirm the transparency and reliability of laboratory tests for the regulator, and increase labour productivity by 10%. In 2020, the project was implemented in three of the six laboratories of the Group's Russian companies.

TRAINING

NLMK devotes special attention to fostering a culture of environmental awareness among employees at its companies and in communities in the regions where it operates. A series of educational courses, including the Key Rules for Protecting the Environment document and Protecting the Environment distance training course, have been developed for the benefit of all the Group's staff. Special environmental protection training consists of modules covering the use of dust and gas cleaning facilities and treatment equipment, how to eliminate situations which could lead to environmental issues, and waste handling. At least 10% or 5,000 of employees go through environmental training sessions and development courses every year.

NLMK Lipetsk arranged Green City environmental seminars

The project aimed to raise awareness among residents of Lipetsk about the current environmental situation in the city and the Company's projects to reduce its impact on the environment. Several important topics were covered at these seminars: health of the residents, areas affected by the industry, programmes for improving the environment at the plant and in the city, as well as sustainability tools. In 2020, 15 training sessions were arranged to reach a wide audience, including representatives of government authorities, the press, entrepreneurs, students, and schoolchildren. Open communication between NLMK Lipetsk and the city is key to building an effective partnership in the field of environmental safety. The Company also plans to hold interactive meetings on ecology for students of all schools and universities of the city.

Online training is also available on the corporate portal. Two videos are currently available: 'Environmental Initiatives' and 'Handling Class I and Class II Hazardous Waste'.

NLMK Group has been running the Green Office Programme for several years already. It aims to enhance the environmental commitment of the Group's employees and teaches people about how they can contribute to reducing emissions into the air, water, and soil, and also reduce fuel costs in the process. In 2020, the programme was extended to all the Group's Russian companies and standard Green Office activities became available for over 30,000 employees of the Group.

SUPPLIER ENVIRONMENTAL ASSESSMENT

Starting from 2007, all suppliers of NLMK Group have been subjected to audits, which cover compliance with environmental standards. All providers of raw materials, supplies, and equipment to NLMK Group as well as suppliers of services (contractors), undergo a qualification procedure, which also includes assessments for compliance with environmental requirements. The environmental criteria for assessing suppliers include compliance with legal requirements, availability of necessary permits and Environmental Management Systems.

The qualification, assessment, and audit procedures are set out in NLMK Group's regulatory documents. In 2020, the Company updated its Regulations on the Qualification of Contractors for Compliance with the Management Systems Requirements and the Regulations on the Contractor Management in the field of Occupational Health, Industrial and Fire Safety, Environmental Protection and Road Safety.

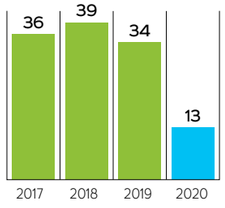
Contractors who have been found not to meet the established criteria following the qualification and audit procedures are not permitted to supply raw materials, supplies, or equipment or to provide services to NLMK Group companies. In 2018–2020, 100% of new service providers were screened using the environmental criteria. In addition, all products supplied to NLMK companies come with safety data sheets that regulate potential hazards associated with the handling of products and prescribe the respective necessary precautions.

For contractors, the assessment is carried out on the basis of internal corporate documents through a specially developed qualification questionnaire GRI 308-1. They are obliged to sign the Agreement on occupational health, industrial and fire safety, work performance, environmental protection as well as onsite and access control for relations with its counterparties, which will also enable the Group's enterprises to deal efficiently with suppliers and contractors on matters concerning environmental protection and to effectively prevent environmental violations from their side.

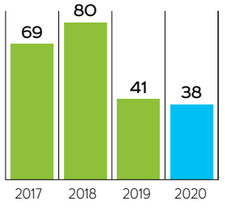
The decline in supplier audits in 2020 is due to the COVID-19 pandemic.

The Group works with its suppliers during the audits to eliminate environmental deficiencies. In particular, in 2020, based on the audit results for two suppliers, measures were initiated to finalize the permitting environmental documentation of the audited facilities in order to ensure compliance with environmental requirements.

SUPPLIERS OF FEEDSTOCK, MATERIALS, AND EQUIPMENT TO NLMK GROUP SCREENED USING ENVIRONMENTAL CRITERIA DURING AUDITS GRI 308-2



SUPPLIERS WITH MEASURES TO IMPROVE ENVIRONMENTAL COMPLIANCE FOLLOWING AUDITS, % OF TOTAL AUDITS CONDUCTED GRI 308-2



MEMBERSHIP AND PARTICIPATION IN ORGANIZATIONS

NLMK works with Russian and international associations to establish an effective dialogue on issues surrounding the sustainable use of natural resources. In particular, NLMK Group is a member of the World Steel Association (WSA), which represents over 170 steel producers across the globe. NLMK is a member of WSA expert groups on the environment, sustainable development and climate, and participates in the Association's events and expert meetings. As part of its collaboration with the WSA, the Group collects and submits data on sustainable development indicators on an annual basis and participates in steel products life cycle assessment. In 2018, NLMK Group signed the Sustainable Development Charter, which spells out the commitment of WSA members to treating steel as a key element in a sustainable world and their willingness to be guided by environmental, social, and economic sustainability principles. In 2020, the Company participated in the Worldsteel Steelie Awards and was shortlisted in the Excellence in Sustainability category.

NLMK Group is also a member of the Russian Steel industry association and takes active part in the work of its environmental committee, which reviews various environmental aspects of steelmaking operations and environmental regulation issues.

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

NLMK Europe is a member of the European Steel Association (EUROFER), which discusses environmental developments in Europe and is particularly active in the EU carbon regulation activities. NLMK Group is committed to the sustainable steelmaking principles promoted by the EUROFER.

In 2020, NLMK Group improved its standing in the World Wildlife Fund (WWF) Russia and National Rating Agency's Environmental Transparency Rating of Mining & Metals Companies. NLMK ranked sixth, improving its standing by three positions compared to 2019. The main purpose of the report published by WWF Russia was to rank Russian companies according to their transparency in matters of environmental responsibility. The research examines the activities of 40 major companies and has been published since 2015, with the support of the UN Development Programme, the Global Environment Facility, and the Russian Ministry of Natural Resources and the Environment.

In 2020 NLMK Group took on the role of a strategic partner for the accelerator, GreenTech Startup Booster, organized by the Skolkovo Foundation, with the support of the Russian Ministry of Natural Resources and the Environment. More than 150 companies participated in the project, organized by the Skolkovo Foundation, with the support of the Russian Ministry of Natural Resources and the Environment, Ministry of Construction, Ministry of Energy, and industrial partners. Experts from NLMK, the official industrial partner of the programme, evaluated their projects. NLMK experts were primarily interested in solutions to respond to the current environmental and climate protection challenges of the Company. These include efficient dust suppression systems, emission control systems, air and water monitoring systems, resource conservation, and waste recycling projects. Among the finalists of the accelerator, NLMK singled out a technology for producing marketable products from liquid metal slags for the construction of roads and housing, production of compact gas treatment plants, and digital solutions for optimizing waste management processes. These solutions will be further analysed and the companies may be offered the opportunity to develop their pilot projects at NLMK Group sites.

NLMK Group also cooperates with other steelmaking companies in exchanging best practices and promoting sustainability principles. In 2020, NLMK Group established regular contacts with voestalpine, Tata Steel Group, and SSAB. At regular meetings, the companies discuss their main environmental indicators, approaches to environmental protection, implemented and planned projects to reduce the impact on the environment. NLMK Group is open about environmental issues, recognizing that environmental protection is a common cause, free from competition.

NLMK joined the international Competence Centre for the development of advanced metallurgical and environmental processes

NLMK Group became an industrial partner of K1-MET, a leading European Competence Centre for the development of advanced metallurgical and environmental processes.

The first joint project of NLMK, voestalpine, and K1-MET was launched in January 2021. The project aims to develop a technology for processing zinc-containing waste from electric arc furnaces and BOF steelmaking. The new technology will enable the production of materials with higher contribution margins from recyclables with the involvement of thousands of tonnes of iron in the production cycle of the Group companies. An important environmental impact of using this technology is the replacement of primary raw materials with secondary resources, which reduces the volume of storage of associated products and helps to reduce greenhouse gas emissions.

WATER RESOURCES

GRI 303-1, GRI 303-2

NLMK Group is committed to reducing the volume of water that it consumes, and devotes considerable efforts to lowering its water intake volumes in favour of reusing water. The Group's companies are likewise focused on reducing the volume and improving the quality of wastewater produced, which is in line with the IMS Policy of NLMK Group.

As part of the climate risk assessment initiated in 2020 by Carbon Trust Advisory Limited, an independent, competent third-party organization, which has relevant experience with commercial companies and government organizations since 2001, a risk assessment of water availability in the areas where NLMK Group operates was carried out. Based on the results of the assessment, it was found that in the short and medium term, this risk has a low probability of affecting the Group's activities.

In March 2020, NLMK Lipetsk joined the initiative to discuss the state of urban sewage treatment plants and their potential upgrade with the Lipetsk city administration and the Lipetsk municipal WWTP. As part of this initiative, an upgrade programme was developed together with NLMK experts, which aims to improve the quality of wastewater at the outlet and reduce the emission of substances with an unpleasant smell, a source of discomfort for residents of nearby areas. In December 2020, the main design solutions for the upgrade of the structures at two sections of the Lipetsk WWTP were developed. NLMK experts' participation in this work allowed finding the most efficient solutions for the city and significantly optimizing the amount of investment while maintaining the cleaning targets.

WATER WITHDRAWAL

GRI 303-1, GRI 303-2

NLMK companies withdraw a small proportion of their water from external sources for production and drinking purposes (less than 4% of the Group's total water consumption). Maintaining the same low level of freshwater intake as production volumes grow is an important objective of NLMK Group. For industrial water supplies, the companies use water from surface water bodies, underground sources, and rainfall. NLMK Group companies do not use wastewater from other organizations.

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

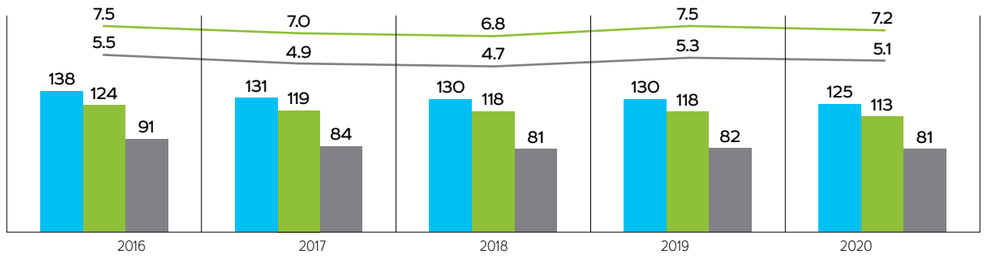
The water bodies that supply NLMK companies are assessed as being not particularly vulnerable given their size, role, or status as being rare, threatened, or endangered.

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

The Group's companies are focused on reducing the volume and improving the quality of wastewater produced, which is in line with the IMS Policy of NLMK Group. In 2020, the Lipetsk site started working on a project for feeding treated household wastewater back into the company production water supply, which will reduce the intake of fresh natural water by 2 to 8 million m³.

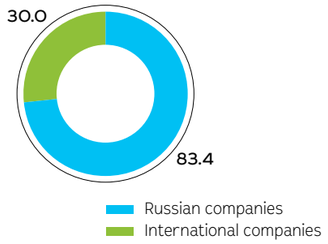
TOTAL VOLUME OF WATER CONSUMED BY NLMK GROUP

GRI 303-3, GRI 303-5



TOTAL VOLUME OF WATER WITHDRAWN FOR NLMK GROUP PRODUCTION NEEDS BY REGION, 2020, M M³

GRI 303-3



In 2020, there was a downward trend in water consumption volumes compared to 2019, and a five-year low of natural water consumption for industrial and household needs was reached, thanks to operational measures to control water consumption and eliminate leaks.

At the same time, 74% of the water consumed for production needs by the Group's international companies is direct-flow water for cooling equipment, which is not polluted during use and is fully returned to the natural environment unchanged.

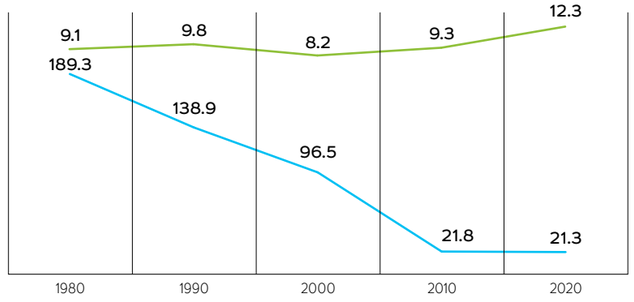
Over the last 40 years the annual withdrawal of fresh water from the Voronezh River by the Group's core site in Lipetsk has been reduced by over nine times down to 21 million m³/year (from the level of 189 million m³/year in 1980 when production output was merely 9 million tonnes).

TOTAL VOLUME OF WATER WITHDRAWN FOR NLMK GROUP PRODUCTION NEEDS BY SOURCE, 2016–2020, M M³

GRI 303-3

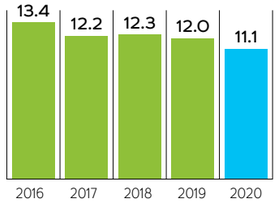
Indicator	2016	2017	2018	2019	2020
Surface water	61.5	60.9	60.1	60.9	58.4
Ground water	62.6	58.1	58.0	57.1	54.9
Rainwater collected and stored by organization	0.1	0.1	0.1	0.1	0.1
Group total	124.3	119.1	118.2	118.2	113.4
Group total excl. direct-flow water for cooling equipment and mine drainage water (not used in the water loop)	57.0	54.6	537	54.1	53.1

WATER WITHDRAWAL FROM THE VORONEZH RIVER, LIPETSK SITE



WATER WITHDRAWAL (CONSUMPTION, INCL. FROM WATER UTILITIES) FOR POTABLE WATER SUPPLY AT NLMK GROUP'S COMPANIES, M M³

GRI 303-3



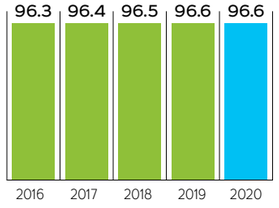
RECYCLED AND REUSED WATER

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

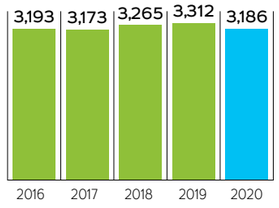
Water recycling solutions have been put in place at 14 NLMK Group assets. These solutions include both local systems for individual facilities and entirely self-contained subsidiary-wide systems. This helps to reduce water withdrawal and effluent discharge into surface water bodies. The share of recycled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

The figures provided for recycled water supply show the additional water consumption by NLMK Group that would have occurred if no water recycling had been in place at its enterprises.

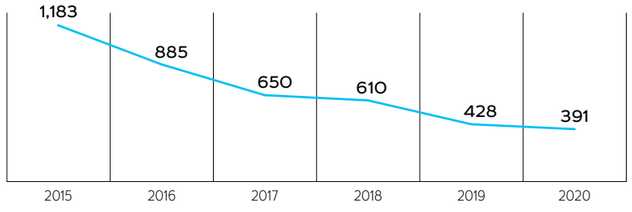
SHARE OF RECYCLED WATER IN NLMK GROUP'S TOTAL WATER CONSUMPTION, %



VOLUME OF WATER RECYCLED AT NLMK GROUP COMPANIES, M M³



POTABLE AND PUBLIC WATER CONSUMPTION AT STOILENSKY, '000 M³



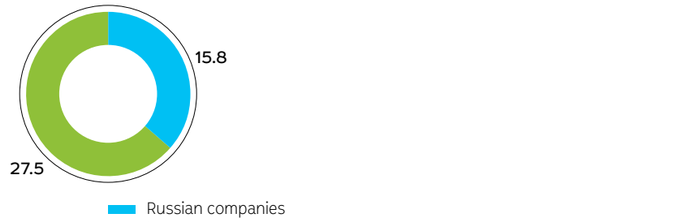
The regions where the Group operates offer a high availability of water resources. The Group has no operations in water-stressed areas. According to the UN methodology, a region or country is considered water-deficient if its annual water supply is below 1,700 m³ per person. The regions where NLMK Group companies are located are not water-deficient. Only one location, namely the Belgorod Region where Stoilensky is situated, is exposed to a local water shortage as related to potable and household water supply in some areas of the region during dry years (not in the area where Stoilensky operates). Recognizing the importance of preserving the water resources in light of shortage risks, Stoilensky is implementing projects to cut down potable water consumption and taking action to protect water resources from the harmful effects of operations, including though better safety and the reliability of hydraulic structures. A dedicated certified laboratory regularly samples and checks the quality of water withdrawn, sewerage and water bodies in the area of potential impact. In 2020, Stoilensky started working on a roject to redirect pumped clean mine drainage waters directly into the water body without using them in the water-loop cycle, this way the company plans to return a valuable resource in the form of non-polluted water to the natural environment.

DISCHARGE

Monitoring of discharge into water bodies at all sites is an important environmental aspect of NLMK Group's operations.

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

TOTAL VOLUME OF WATER DISCHARGE BY NLMK GROUP, INCLUDING RUSSIAN AND INTERNATIONAL COMPANIES, 2020, M M³ GRI 303-4, GRI 306-1



TOTAL VOLUME OF DISCHARGE BY RECEIVING WATER BODY, M M³

GRI 303-4, GRI 306-1

Indicator	2016	2017	2018	2019	2020
Total volume of water discharge for NLMK Group[1]	**46.5**	**47.3**	**49.0**	**47.7**	**43.3**
Water discharge as % from total water supply	**1**	**1**	**1**	**1**	**1**
Into surface water bodies, including rivers, lakes, reservoirs, and canals	44.4	45.2	46.8	45.7	41.6
including into seas and oceans	0.2	0.2	0.3	0.3	0.3
Transferred to third-party organizations for treatment	2.1	2.1	2.1	2.0	1.7
Specific water discharge[1], m³/t of steel	7.5	7.0	6.8	7.5	7.2

[1] Source: Ministry of Natural Resources and Environment of the Russian Federation, http://www.mnr.gov.ru/en/

[1] Industrial and household wastewater, total.

ACTIONS TO REDUCE DISCHARGES OF HOUSEHOLD WASTEWATER INTO THE VORONEZH RIVER

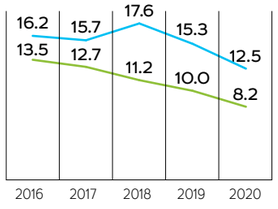
Actions	Environmental improvement
Overhaul of mechanical treatment facilities of NLMK's LWWTP, local wastewater treatment plants (repair of the sand traps and grease traps)	
Improving the efficiency of NLMK's LWWTP (optimizing the process performance)	
Reduction of water disposal through LWWTP due to the redistribution of flows in the plant's water supply system and restoration of the tightness household sewerage wells	**At 2020 year-end compared to 2019:** • Volume of wastewater disposal reduced by **0.7 million m³ (-8%)** • Inflow of pollutants into the water body reduced by **1,900 tonnes (-19%)**
Monitoring of the state of networks and structures of NLMK's household sewerage system (detection and prevention of unauthorized discharges of wastewater into the plant's sewage networks)	
Interaction with the Lipetsk municipal sanitation agency (improvement of wastewater quality and minimization of residential wastewater discharges to the plant's sewage networks)	

In 2020, actions were taken at the main site in Lipetsk to reduce discharges of household wastewater into the Voronezh River.

Each company makes use of water purification and treatment technologies that ensure the quality of wastewater as well as water used for industrial and domestic purposes meets the standards set by applicable regulations. The appropriate methods are applied according to the type of wastewater in question (mechanical purification, oil/water interceptors, biological purification, decontamination). All discharged materials have a mineral content of less than 1,000 mg/L. No untreated discharges are made into water bodies GRI 304-4.

The Company's Environmental Strategy sets the goal of reducing the discharge of pollutants with wastewater into water bodies by 25% compared to 2018. The Group companies develop and implement projects aimed at achieving this target.

POLLUTANTS DISCHARGED INTO WATER BODIES WITH WASTEWATER, '000 T



NLMK Lipetsk implemented a project to reduce the discharge of pollutants into water bodies

NLMK Lipetsk implemented an investment project to upgrade local wastewater treatment facilities. In line with the project, the cleaning units (aerotanks) were upgraded and a pontoon pumping station was built to reduce the unbalanced water and use it for BF slag processing. The goal of the project was to achieve the standards for 13 substances out of 19 released into the Voronezh River. The total investment in the project amounted to RUB 118 million. The project helped to reduce maximum concentrations for all substances, while average annual concentrations reached the established standards for 15 out of 19 indicators.

Over the last five years, the volume of water disposal at the Lipetsk site was reduced by 4.2 million m³ (-34%), the mass of substances going into the river was reduced by 5,300 tonnes (-39%).

Going forward, NLMK Group is considering the possibility of using wastewater treated in LWWTPs in the technical water supply system to seize the discharge of household wastewater into the Voronezh River.

AIR EMISSIONS

NLMK Group devotes considerable efforts to reducing its air emissions. The Group's Strategy 2022 includes a target of reducing specific air emissions from 18.9 kg/t in 2018 to 18.0 kg/t of steel by 2023.

In order to attain this target, the Environmental Programme 2022 envisages over 30 investment projects that aim to reduce the impact on the atmosphere. When upgrading its purification equipment, NLMK seeks to integrate and utilize best available technologies (BAT).

In 2020, NLMK Group made an inventory of all existing de-dusting systems to check their compliance with the requirements of environmental protection and dustiness at the workplace. Following the inventory, deficiencies were identified and a long-term de-dusting system upgrade programme was developed. The Company plans to start working on priority projects under this programme already in 2021.

As part of the four-way Cooperation Agreement between NLMK Group, the Russian Ministry of Natural Resources and the Environment, the Federal Supervisory Natural Resources Management Service (Rosprirodnadzor), and the Administration of the Lipetsk Region, signed in summer 2019, by the end of 2020 NLMK Lipetsk implemented 5 out of 9 activities planned by 2024. They are aimed at implementing the Ecology National Project and reducing gross air emissions in the atmosphere. The total emissions reduction was 9,000 tonnes. Substantial environmental investment of $1.3 billion since 2000 reduced NLMK Group's specific emissions by more than a half: from 43.3 to 19.8 kg/tonne of steel. Overall, with almost a two-fold increase in production the amount of cumulative impact on the environment was reduced by 10%.

Lipetsk: one of Russia's cleanest steelmaking centres

Since 2014 the city of Lipetsk, which is home to NLMK Group's largest asset, has been officially recognized as the 'cleanest' steelmaking city in Russia, according to data from Russia's Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet). Thanks to environmental protection measures implemented at the Lipetsk site, the Integrated Air Pollution Index (IAPI)[1] in Lipetsk decreased almost ten-fold from 2000 to 2020.

[1] The IAPI indicator, which was developed and calculated by Roshydromet, is used by the Russian Ministry of Natural Resources and the Environment to conduct scientific assessments of air pollution in Russian cities.

ENVIRONMENTAL PROGRAMME EMISSION REDUCTION PROJECTS IMPLEMENTED IN 2019–2020

Site	Measure	Effect
NLMK Lipetsk	Revamp of de-dusting systems, replacement of hot-blast stoves and re-tooling of slag granulation plants during overhauls of Blast Furnace No. 6	• Reduction of H_2S, SO_2, dust, and CO, elimination of visible emissions • Achieving a 99.9% purification rate, returning 100% of the captured dust to production • Total effect – 5,663 tpa
	Upgrade of de-dusting systems during the overhaul of Blast Furnace No. 4	• Dust emissions reduction, elimination of visible emissions • Achieving a 99.9% purification rate, returning 100% of the captured dust to production • Total effect – 234 tpa
	Reconstruction of off-gas ducts at BOF No. 2 and 3 and construction of secondary emission treatment systems at BOF Shop No. 2	• Reduction of dust and CO, elimination of visible emissions • Achieving a 99.9% purification rate, returning 100% of the captured dust to production • Total effect – 3,096 tpa
	Revamp of the de-dusting unit (ATU-24) in the refractory shop	• Over 90% reduction in dust emissions at the facility • Performance of de-dusting system up by 20% to 240,000 m^3/h • Total effect – 81 tpa
	Revamp of by-product collection facilities, including merging of coke gas flows from coke batteries	• Reduction of phenol by 66%, H_2S by 31%
	Construction of a new section for waterless slag cooling of all slag generated in BF Shop No. 1	• Full transition to waterless slag cooling, reduction of H_2S emission • The overall effect is a 3.5x reduction in hydrogen sulfide emissions at the site
Stoilensky	Technical re-equipment of the crushing and screening area de-dusting unit (DU-1), Beneficiation Plant	• Additional capture of 700 tonnes of dust was implemented. The risk of exceeding the maximum permissible emissions at the source is eliminated, four-fold reduction in dust concentration at the workplace ensured • Emission purification level increased from 35% to 96%

Blast Furnace No. 4 becomes cleaner

NLMK Lipetsk completed an upgrade of Blast Furnace No. 4 with a capacity of 2.1 million tonnes of pig iron per year.

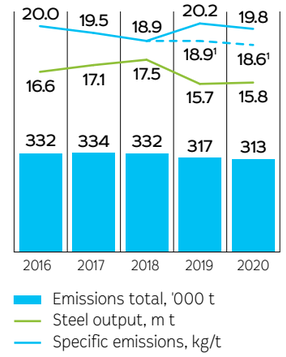
The project includes an environmental upgrade of the furnace infrastructure. All the dust generated during hot metal production will be captured by a highly efficient de-dusting system. The system ensures a purification efficiency of 99.9%, which is in line with the best available technologies. The new equipment will also enable more efficient blast furnace gas treatment for it to be utilized as a secondary energy source. Filtered dust will be utilized in the production of iron-containing briquettes, or fed back into the blast furnace process. As part of the project, the furnace was equipped with a new lining, special refractory blocks that will enhance the resistance of the furnace's internal surface to thermal loads. Technical solutions and advanced materials will ensure stable operation of the furnace for the next 20 years.

After the furnace overhaul, emissions are expected to reduce by 200 tonnes per year. After the associated upgrade of air heaters is completed in 2022, the reduction in gross emissions will total 7,700 tonnes per year.

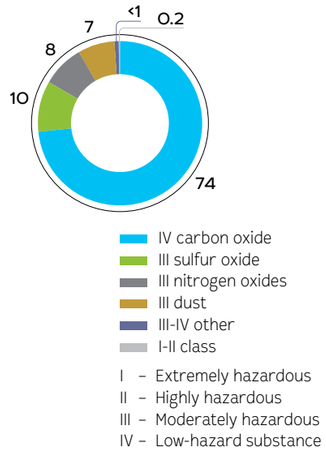
In 2020, gross emissions decreased by 4,000 tonnes (by 1.3%) compared to 2019. Specific emissions per tonne of steel were also reduced, driven by implemented investment projects. Specific emissions display a planned decline towards the target of 18.0 kg/t of steel in 2023 with production output kept flat.

74% of NLMK Group's emissions consist of carbon monoxide, a low-hazard substance of hazard class IV, which is not regulated as a harmful substance in many countries, and cannot harm human health, since it comes from high pipes, is 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.

SPECIFIC VOLUME OF AIR EMISSIONS BY NLMK GROUP



NLMK GROUP'S EMISSIONS BY HAZARD CLASS, %



Road sweeping machines for NLMK and the city of Lipetsk

In the summer of 2020, NLMK Lipetsk purchased two road-sweeping machines. They will be used to clean industrial roads with high dust content on the territory of the plant and in the city of Lipetsk. They are able to remove up to 2,000 tonnes of dust from the plant's roads annually.

Sergey Evseev, Head of NLMK's Industrial Ecology Department, said: "The new equipment was delivered to the plant as part of measures to reduce dust content on site. Dust from production facilities settles on roads and secondary dusting is possible in windy weather. The new road-sweeping machines will reduce the dustiness of the plant's roads and improve the air quality on its territory and in the city."

Swiss Aebi Schmidt sweepers work as a washing vacuum cleaner and suck all the dust into a special hopper when cleaning. The efficiency of road surface cleaning is 98–99%, which is significantly higher than the usual dry and wet cleaning methods.

The sweeper has a high level of dust suppression. This is achieved through filters for additional air purification and swirling dust flows. When the machine is running, the amount of fine dust particles released into the air is significantly lower than the established standard.

The new sweepers are also equipped with a recirculation system for water, which can be reused after filtration.

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

VOLUME OF SIGNIFICANT AIR EMISSIONS BY NLMK GROUP BY SUBSTANCE TYPE GRI 305-7

Indicator	2016	2017	2018	2019	2020
Total, '000 t	**332.4**	**333.8**	**331.5**	**317.0**	**313.3**
NO_x emissions, '000 t	24.8	27.1	27.2	26.2	26.1
per unit of production, kg/t	1.5	1.6	1.6	1.7	1.7
SO_2 emissions, '000 t	28.9	31.8	31.7	29.5	31.0
per unit of production, kg/t	1.7	1.9	1.8	1.9	2.0
Particulate matter emissions, '000 t	25.2	25.7	24.4	22.5	23.0
per unit of production, kg/t	1.5	1.5	1.4	1.4	1.4
CO emissions, '000 t	249.6	245.9	244.8	235.3	230.1
per unit of production, kg/t	15.0	14.4	14.0	15.0	14.5
Volatile organic compounds, '000 t	2.6	2.6	2.7	2.8	2.6
Hazard class 1 substances[1], t	1.4	1.2	1.3	1.2	1.2
per unit of production[1], g/t	0.09	0.07	0.08	0.08	0.08
Hazard class 2 substances[1], t	560	552	547	514	480
per unit of production[1], kg/t	0.04	0.03	0.03	0.03	0.03

The increase in the specific SO_2 emissions compared to previous periods is due to a change in the coking charge mix: the share of additives with a high sulfur content was increased. This did not lead to exceeding the maximum permissible concentrations. The SO_2 emission standards are met. In order to minimize the consequences of the increase in the sulfur content in the charge, NLMK Group started developing a project for the construction of a desulphurization plant.

NLMK Lipetsk cuts H_2S emissions

NLMK Lipetsk has launched an anhydrous cooling system for blast furnace slag as part of its environmental upgrade programme. This will enable it to reduce hydrogen sulfide emissions in the corresponding area by 3.5x and keep the smell from this chemical compound to a minimum.

The implementation of the complex marks the full transition of NLMK Lipetsk's Blast Furnace Shop No. 1 (three blast furnaces) to dry slag cooling technology. The complex was built in place of a slag dump that had been accumulating since the 1970s. Close to 6 million tonnes of various materials were processed and more than 300,000 tonnes of iron were fed back into steel production in the course of the project.

[1] Russian assets.

WASTE HANDLING AND SOUND USE OF NATURAL RESOURCES

WASTE MANAGEMENT

NLMK Group's waste-handling operations are orientated towards key modern steelmaking trends: minimizing waste generation and increasing the proportion of waste that is processed, reused, and safely disposed of. For example, a priority of the Environmental Programme 2022 is to increase waste utilization and recycling at NLMK Group to 92% (not including such mining waste as overburden and beneficiation tailings). Utilization includes reuse, recycling, and disposal.

NLMK Group utilizes some of the waste generated at its sites in the course of its own activities, and transfers some for reuse by specialized organizations that hold relevant licences.

The potential environmental impact is minimized through compliance with safe waste-handling standards and by implementing corresponding measures.

In 2020, total waste generation increased by 14% (by 7.8 million tonnes) due to increased mining output at Stoilensky. The share of recycled waste in 2020, excluding overburden and tailings, increased by 3% compared to 2019 and by 6% compared to the baseline in 2018, thanks to the processing of iron-containing sludge at the Briquetting Plant built in 2019. The share of processed sludge increased from 47% in 2018 to 87% in 2020. Going forward, the Company plans to process the entire volume of generated sludge at the plant and start processing the accumulated sludge.

TOTAL WASTE GENERATED AND UTILIZED BY NLMK GROUP, M T GRI 306-2

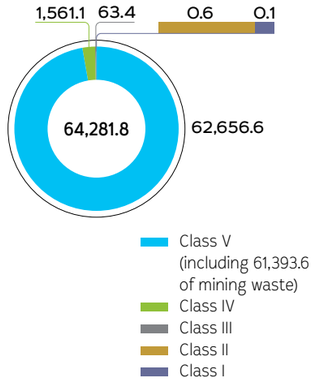
Indicator	2016	2017	2018	2019	2020
Waste generation[1]	1.0	1.5	1.5	1.5	1.4
Secondary raw materials recycled by the companies	2.2	1.9	1.8	1.9	2.0
Secondary raw materials recycled by third-party organizations	0.7	1.0	1.2	1.2	1.2
Waste disposal at third-party landfills, %	4	5	4	4	3
Recycling of secondary iron-containing raw materials, %	90	91	93	99	99

OVERBURDEN AND BENEFICIATION TAILINGS GENERATED AND UTILIZED BY THE GROUP, M T GRI 306-2

Indicator	2016	2017	2018	2019	2020
Stoilensky overburden and beneficiation tailings	55.3	53.9	46.6	53.7	61.4
Overburden generation[2]	50.3	48.5	39.8	51.3	60.5
Share of utilized overburden, %	26	25	26	29	29
Generated beneficiation tailings	17.6	18.2	19.5	20.5	21.4
Utilized beneficiation tailings, %	25	25	25	26	24

[1] Without taking into account secondary raw materials recycled by the companies.
[2] The total volume of generated overburden is indicated. For Stagdok and Dolomit, overburden is not waste and is used for backfilling post-mining areas of the mine, as it is developed 'to the side', 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.

WASTE GENERATED BY NLMK GROUP BY HAZARD CLASS, 2020, '000 T GRI 306-2



99.8% of the waste generated by NLMK Group in 2020 was non-hazardous.

97.5% of the waste generated by the Group's Russian sites is classified as Hazard Class 5 (non-hazardous). This waste category has virtually no impact on ecosystems and requires no special handling measures, including licensing.

Currently the Group companies process the absolute majority of secondary resources. In order to attain its targets, the Company instituted a recycling programme with over 15 projects.

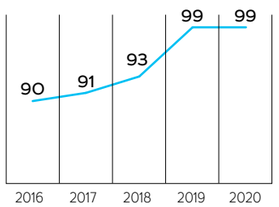
NLMK Lipetsk increased recycling of secondary raw materials

As part of its Environmental Programme, NLMK Lipetsk continued to implement projects to utilize recyclables and reduce the impact on the surrounding areas. The plant processed a 25 ha slag dump with the total weight of accumulated slag exceeding 5 million tonnes.

The slag dump started to accumulate when the first blast furnace was launched on the left bank of the Voronezh River in 1934. Blast furnace slag was drained at a special site far from the residential sector and gradually accumulated, some of it was processed for the needs of road construction. Targeted processing of the slag dump began in 2018 and was completed in just two years.

About a tenth of the recyclables in the dump are metal scrap, varying in size, which was extracted by magnetic separation during processing. The resulting raw materials were used in ironmaking and steelmaking, while the remaining waste rock was utilized in construction.

RECYCLING OF SECONDARY IRON-CONTAINING RAW MATERIALS[1], %



The Company's approach is to minimize waste generation, recycle as many secondary resources as possible in its own process cycle, and ensure that the remaining unused materials are processed, either internally or by third-party companies. The implementation of the recycling programme will ensure an increase in the rate of internal processing of secondary raw materials at the Lipetsk site from 81% to 94%.

Each company of the Group annually develops measures aimed at reducing waste generation, increasing its upcycling in the companies' operations, and reducing waste disposal at landfills.

Crushed stone and crushed stone mixtures obtained during the processing of steelmaking slags are an example of upcycling material. Construction companies widely use this type of materials for the construction of roads, reclamation of disturbed land, and strengthening the banks of reservoirs.

In the reporting year, NLMK Kaluga implemented an initiative to sift the residues from the cleaning of wagons to obtain man-made soil, which will be used as a material for reclamation. This will reduce the volume of waste placed at landfills by 7,000–8,000 tonnes per year.

In 2020, together with its partners NLMK Group managed to produce carbonized bricks from steel slag with a compression strength of 10 MPa (M100). The properties of this material enable it to be used in the construction industry, at the same time reducing greenhouse gas emissions. The Company continues to develop the project for the transition to industrial production of this material.

Production lifecycle

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

All steel produced by NLMK Group companies can be recycled and reprocessed. About 35% of the liquid steel output is produced from ferrous scrap. NLMK Group's operations are part of the circular economy.

[1] 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.

Vtorchermet NLMK – a leader in scrap ferrous metal reprocessing

One NLMK Group asset, torchermet NLMK, is an industry leader in scrap metal processing technology. It collects and processes scrap ferrous metals, and supplies NLMK Ural, NLMK Kaluga, and NLMK Lipetsk with 85% of the high-quality scrap metal they need for steelmaking. The scrap metal that arrives at Vtorchermet NLMK is given a second life in the form of products that are in high demand across various industries: rebar, steel duct, brackets, wire, fixing products, and flat-rolled products. Processing scrap metal helps both rid the environment of scrap and significantly reduce consumption of natural resources and energy.

Vtorchermet NLMK is a member of RUSLOM.COM, an organization whose mission and objectives include safeguarding Russia's access to raw materials and environmental safety by returning recycled resources to the economy and creating a high-tech and efficient sector for handling scrap metal and industrial and consumer waste.

TAILINGS DAMS AND HYDRAULIC ENGINEERING STRUCTURES

The organizational structure of NLMK Group includes dedicated services and units responsible for the safety of hydraulic structures.

The Stoilenskoye iron ore deposit is mined using the open-pit method. NLMK Group's sole tailings dams are located at Stoilensky. They were established in 1984, and are being built on the upstream slope. Throughout their operation, no environmental incidents related to the tailings dam systems and structures have been recorded.

The safe operation of the tailings dam is ensured by means of a number of internal and independent inspections, including:

- Water level control at least twice a day.
- Visual inspection of engineering structures at least once a day.
- Quality control of tailings at least once a quarter.
- Quality control of tailings at least once a quarter.
- Control of water filtration at the dams at least once a month.
- The facility's safety is checked weekly by inspectors from the Federal .
- Service for Environmental, Industrial and Nuclear Supervision Service (Rostechnadzor).
- Environmental compliance assessment twice a month.
- Geological survey is carried out annually.
- Planned inspections of the dam's technical condition and safety are performed annually involving specialized government agencies.
- Hydraulic engineering structures at the tailings dam are checked involving government organizations, the general designer, and expert organizations at least once every three years.

In September 2018, a comprehensive survey of Stoilensky TMF hydraulic engineering structures was conducted together with representatives of Rostechnadzor, EMERCOM, and other specialized government agencies and entities. The survey assessed the ultimate safety level of the Stoilensky tailings hydraulic engineering structures as 'normal' (the best possible option).

There is a local warning system in place at Stoilensky and its operability is checked monthly by Stoilensky's own staff and Rostechnadzor specialists. A contingency plan for hydraulic structures at the tailings dam has been drafted and is updated each year. Staff training is administered at least once a month. In April 2019, training sessions were held with participation of experts from EMERCOM. There is no need to monitor seismic activity in the area according to the appropriate determination of a specialized state committee.

The water level in the tailings dam is maintained at the level more than 2 m below the crest of the dams, which meets the current safety criteria. In 2020, 762,000 m^3 of tailings, rock soil, and crushed stone were used in the construction of the tailings storage facilities, 5,840 m of slurry pipelines were installed, and 4 ha of the dam slopes were reclaimed. In order to further increase the height of the dump protection dam, the necessary amount of engineering and geological surveys and a verification calculation of the dam stability were carried out, according to which the structure design provides a stability coefficient higher than the standard one. The cost of the tailings storage maintenance programme amounted to RUB 241 million.

In accordance with the regulatory requirements, a survey of the hydraulic complex of the tailings storage facility is planned for 2021 with the involvement of state agencies, the general designer, and expert organizations.

The Group duly informs local communities about the existence of the tailings dam and holds regular public hearings regarding the development of the facility.

Stoilensky has introduced an Environmental Management System in accordance with ISO 14001:2015.

EFFICIENT TAILINGS STORAGE TECHNOLOGY

Stoilensky, one of Russia's leading iron ore producers, uses an efficient and environmentally friendly treatment process for the beneficiation of waste rock. It involves liquid extraction followed by the forced transfer of thickened tailings to storage. This process returns 80% of industrial water used during transportation back into the beneficiation process. Additionally, the better resilience of thickened tailings to weathering significantly reduces the dust levels at the tailings dam. As there is no way for excessive water to come into the facility, the overflow risk is mitigated and pressure on the dams is reduced. Thus, given that the tailings are thickened and measures are taken to ensure the safety of hydraulic structures, the risk of dam failure at Stoilensky is under control and has a conditionally acceptable level. Estimates indicate that a transition to fully dry storage of tailings at Stoilensky would inevitability lead to strong dusting, and it would be impossible to completely curb dust, especially in summer. In light of this, the Group considers dry tailings storage to be an unacceptable environmental risk and considers tailings thickening to be the most effective technology for managing environmental risks.

The perfect recipe to get rid of dust

In 2021, Stoilensky plans to carry out dust collection activities on the dry beaches of the tailing dump. It plans to build a flexible hose irrigation system. RUB 135 million were allocated for the project implementation. The current system was based on a rigid metal frame. As a result, as the compartments were filled, some of the pipelines were flooded and could not be used, and the emerging new beaches were not irrigated.

During the construction of the new system, an innovative 'recipe' for dust suppression will be used on dry beaches of the tailing dump. Its main 'ingredient' is a special reagent that was tested during a pilot experiment.

The tailings storage facility occupies an area of 1,000 hectares, where processing waste, tailings, which are basically fine sand, is stored. Over time, influenced by the sun and wind, it will dry up and dust in dry, windy periods.

NLMK experts were able to successfully apply the method of spraying a solution of a special reagent that binds the surface, turning the fine sand into a crust. The effect after applying the solution persists for three months. The reagent itself is a kind of non-toxic glue that binds the surface of the material, forming a dense top layer. At the same time, it makes it possible for water to penetrate through it, so that there are no puddles and there is no flooding.

Next year, according to the programme for the development of the tailings workshop, it is planned to treat 120 hectares of the tailings storage facility with the reagent solution.

BIODIVERSITY

NLMK Group conducts operations on both industrial lands and residential areas in line with applicable law. The Company's activities have no direct significant impacts on biodiversity GRI 304-2.

In 2020, the area of NLMK Group's companies decreased by 2 hectares. Fluctuations in the area over the years are insignificant and are associated with the opening and closing of NLMK Vtorchermet scrap collection sites.

NLMK Group production sites are not located on sites that are situated on environmentally protected land or on land with a high biodiversity value. NLMK Group's activities do not pose any threat to animal or plant species registered on the IUCN Red List or in the Russian Red Book, or to species threatened with extinction GRI 304-1, GRI 304-4. With a view to preserve biodiversity on the territory of the Group companies, it is prohibited to destroy or damage greenery, build fires, hunt, and fish. These requirements are the same for both personnel and employees of contracting organizations. All places of water intake from surface water bodies are equipped with fish protection devices. The sites' location does not prevent the movement of migratory birds.

NLMK Group organized comprehensive assessment of possible involvement in biodiversity conservation projects. NLMK Lipetsk, Stoilensky, and Altai-Koks developed programmes for biodiversity conservation.

In 2020, NLMK Group invested close to RUB 4 million into biodiversity research and conservation, including compensatory measures.

AREA OCCUPIED BY GROUP COMPANIES AND REHABILITATED LAND, HA GRI G4-MM1

Indicator	2019	2020
Area	11,898	11,896
Land rehabilitated	15	10

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

Swan Lake Environmental Park was created by NLMK employees in 1978. It is the only bioindicator in Russia and the former Soviet Union that is situated on the territory of an industrial site. The lake is filled with process water from the Lipetsk site that has undergone treatment following its use in production. The environmental park occupies more than 5 hectares of land situated between the BOF shops of the Lipetsk site. It is home to come 500 birds of over 40 species, including 20 rare species. The lake is also inhabited by fish (common and bighead carps), which helps ensure that the waterfowl have a natural diet. Many bird species can only live in natural or near-wildlife conditions. The quality of the environment in the park allows these picky and demanding birds to enjoy long lives and reproduce regularly.

In 2020, joint activities were carried out with the Oka State Natural Biosphere Reserve, a nursery of rare crane species, as part of the Eurasian Regional Association of Zoos and Aquariums' programme for conservation of cranes of Eurasia.

The Conservation of Cranes of Eurasia programme involves determining the sex of all cranes kept in captivity and drawing up a genetic ID for each captive bird. In addition, genetic studies of cranes in Russia are being conducted in order to identify subspecies, genetic features of individual populations that will help both breeding in captivity and reintroduction into nature. Under the programme, the Company sent for research six blood samples from the Japanese crane and the belladonna crane, both Red Book species, living on the Swan Lake. Thanks to the genetic database of cranes kept in zoos in Russia, created by the Oka Reserve, NLMK hopes to find a male Daurian crane not related to NLMK's female, for mating.

Swan Lake works closely with other leading Russian zoos and nature reserves to grow and replenish the animal populations. As part of this cooperation, in 2021, 127 new birds belonging to 21 different species will move from the Vorob'i (Sparrows) and Malinki (Raspberries) bird parks, and the Penza and Lipetsk Zoos to a new place of comfortable residence in Swan Lake.

Representatives of Belogorye Nature Reserve conducted research at Stoilensky

Stoilensky cooperates with the Belogorye Nature Reserve in the study and conservation of the biodiversity of terrestrial and aquatic ecosystems. Reserve experts have compiled a list of animals and plants that are found in the area of the floodplain of the Chufichka River, where the head dam of the company is located, and forest areas close to the Stoilensky territory.

Scientists note that foxes, hare, weasel, as well as roe deer and wild boar inhabit these lands, while in the floodplain of the Chufichka River there are minks, beavers, and river otters.

Among the birds, the common turtledove, quail, and crake, rare species that are included in the new lists of the Red Book, have been noticed. As for the Red Book plants, forest anemone, whole-leaved clematis, spring primrose, and grasshopper can be found on this territory.

Following the results of the study, the reserve's researchers will develop measures to rehabilitate the environment and preserve its biodiversity.

Altai-Koks replenishes fish stocks at the Verkhneobsky basin

NLMK Group's company located in Zarinsk, Altai Territory has developed a six-year programme for the conservation of aquatic biological resources and their habitat. As part of this programme, the company plans to release more than 100,000 juvenile carp into the rivers. In 2020, about 27,000 juvenile fish were already released to the Verkhneobsky basin within a radius of 30 km from Barnaul as compensatory measures to offset water intake from the Chumysh River.

The Group regularly implements measures that aim to rehabilitate land disturbed by the operations of its extractive companies. The treatment of deposit sites includes phased rehabilitation work to restore the landscape and its plant cover and to enable plants to grow again in the soil GRI 304-3. Reclamation programmes have been developed and are publicly available on the websites of the Mining Division companies. The programmes are being implemented as planned. In 2020, rehabilitation was carried out on 10 hectares of disturbed land. More than RUB 10 million was spent on reclamation and improvement works.

NLMK Lipetsk finished autumn planting of greenery

NLMK Lipetsk completed the autumn stage of its territory landscaping programme.

With a view to maintain an environmentally efficient green barrier, almost 1,100 trees and about 4,600 shrubs were planted on the industrial site and along the internal roads, and about 3,000 square meters of lawns and flowerbeds were arranged and renovated. The territory of the site was decorated with new seedlings of poplar, maple, and birch, as well as spirea bushes.

The works are carried out as part of a 5-year programme for the inventory and renewal of the plant's greenery, developed with the participation of the Voronezh State Forest Engineering University. Experimental plantings recommended by the university for the renewal of the green fund of trees are planned for 2021.

In 2019–2020, 140,000 tree seedlings were planted at NLMK Group's production sites.

PLANS FOR 2021–2023

NLMK Group is planning to implement significant environmental protection initiatives in future reporting periods under its Environmental Programme 2022. The initiatives seek to minimize our environmental impact, including by revamping major production facilities in line with the best available technologies.

MAIN PROJECTS SCHEDULED FOR 2021–2023

Company	Project	Effect
NLMK Lipetsk	Upgrade of Blast Furnace No. 4 air heaters	Reduction of carbon monoxide emissions by 7,500 tonnes per year
NLMK Lipetsk	Construction of a waterless slag cooling unit at the Blast Furnace No. 7 BF slag processing section	Reduction of hydrogen sulfide emissions at the section
NLMK Lipetsk	Upgrade of Blast Furnace No. 3 foundry yard de-dusting unit	Reduction of dust emissions by 200 tonnes per year
NLMK Lipetsk	Reconstruction of the de-dusting system for capturing unorganized emissions of the BOF Shop No. 1 mixing department	Reduction of dust emissions by 100 tonnes per year
NLMK Lipetsk	Technical re-equipment of the Mill 2000 regulating tank	Elimination of the risk of soil contamination with petroleum products on an area of 400 m^2
Stoilensky	Technical re-equipment of the beneficiation plant's medium and fine crushing department de-dusting system	Reduction of dust emissions by 791 tonnes per year
NLMK Lipetsk	Construction of the de-dusting system for capturing unorganized emissions of the BOF Shop No. 1 mixing department	Reduction of dust emissions by 100 tonnes per year Elimination of the risk of visible emissions
NLMK Lipetsk	Equipment of the storage area for waste from wagon cleaning	Eliminating the risk of soil contamination on an area of 1000 m^2
NLMK Lipetsk	Upgrade of the sludge drying scheme of sludge dewatering unit No. 6	Eliminating the risk of soil contamination on an area of 59,800 m^2
NLMK Lipetsk	Elimination of the risk of dusting when liming oiled scale	Eliminating the risk of soil contamination on an area of 120 m^2
Altai-koks	Reconstruction of the dust-free coke distribution unit's dust collection system on Coke Batteries No. 3 and 4	Reduction of dust emissions by 254 tonnes per year
Stoilensky	Reconstruction of the plant's storm sewer	Eliminating the risk of soil contamination on an area of 1100 m^2
NLMK Indiana	Installation of a waste storage warehouse	Eliminating the risk of soil contamination on an area of 500 m^2

CLIMATE CHANGE

MAJOR THEMES

CLIMATE CHANGE
AIR EMISSIONS

KEY EVENTS IN 2020

- NLMK Group's climate-related risks and opportunities are estimated for the first time
- Scope 3 estimates indicating the Company's other indirect emissions related to its upstream activities are disclosed for the first time
- Improved detail and completeness of data disclosure under Scope 1 and Scope 2: emissions are presented by activity and country, data on CO_2 emissions are supplemented with data on methane (CH_4) and nitrous oxide (N_2O) emissions
- Memorandum of Cooperation to reduce climate impact signed with NOVATEK
- Greenhouse gas emissions reduction target through 2023 updated (Scope 1+2): targeted specific emissions stand at 1.91 tonnes of CO_2 per tonne of steel (with previous target of 1.94 tonnes of CO_2 per tonne of steel)

UNITED NATIONS GLOBAL COMPACT PRINCIPLESH

- **Principle 7:** Businesses should support a precautionary approach to environmental challenges.
- **Principle 8:** Businesses should undertake initiatives to promote greater environmental responsibility.
- **Principle 9:** Businesses should encourage the development and diffusion of environmentally friendly technologies.

GLOBAL SUSTAINABLE DEVELOPMENT GOALS

[1] Specific emissions without the influence of temporary factors associated with a decrease in production.

1.90[1] t (–1% yoy)

of CO_2-eq. per t of steel and commercial pig iron (Scope 1+2)

–158 thousand t

of CO_2 through projects implemented in 2020 (Scope 1+2)

OUR APPROACH

Climate change is one of the greatest threats facing the world today, impacting society, the economy, and security globally. The main drivers of climate change are greenhouse gas emissions. Under the Paris Agreement, almost 200 countries made commitments to reduce their emissions, and over 100 countries announced their carbon neutrality goals.

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

NLMK Group is fully committed to climate change action and takes meaningful steps towards decreasing greenhouse gas emissions, progressively reducing the carbon footprint of its products. Moreover, the Company's products (such as steel for wind energy and energy-efficient electrical steels) enable a broad range of consumer industries to reduce their climate impact substantially and attain their decarbonization goals. Steel produced by NLMK Group consists of 35% of recycled ferrous scrap on average. For the Lipetsk site, where BOF steel is produced, this indicator is 17%. Specific CO_2 emissions from scrap steelmaking are approximately four times lower than from primary raw materials.

This year NLMK Group published its first report in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)[1]. Going forward, this report will be further expanded to provide stakeholders with the fullest and timeliest information possible about the Company's progress in the matter.

NLMK Group recognizes the importance of matters relating to climate change and the transition to a low-carbon economy. We are progressively reducing our greenhouse gas emissions by cutting our consumption of fossil fuels, increasing energy efficiency, and introducing innovative decarbonization solutions.

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

Our climate impact reduction targets are determined by the Strategic Planning Committee of the Board of Directors *(see the Committees of the Board of Directors section for more detail)*. By addressing this issue on an annual basis, the Committee ensures that the Board of Directors pays close attention to the matter. NLMK Director of Environmental and Climate Affairs is in charge of managing the Company's impact on key environmental components, including atmospheric air, water resources, and climate change. The functional area as a whole is curated by NLMK Vice President of Energy and Environment, who is a member of the Management Board.

CLIMATE COOPERATION

The Company actively enhances environmental and climate cooperation with its Russian and international partners.

NLMK Group participates in global decarbonization initiatives

In 2020 NLMK Group joined the dialogue on the Mission Possible Platform, a World Economic Forum coalition aimed at accelerating the decarbonization of global industries that account for 30% of greenhouse gas emissions. Through this platform NLMK engages in discussions of an initiative to reduce the climate footprint of the iron and steel industry.

The matters discussed include target-setting for impact reduction, the necessary regulatory base, the market conditions, and key technologies for the decarbonization of steelmaking.

In 2020, Step Up, a joint project with the WSA, was launched at the Group's flagship site in Lipetsk to identify potential areas for reducing greenhouse gas emissions and implement appropriate measures.

NLMK joins the Net Zero Steel Pathway Methodology Project[1]

This project was initiated in 2020 to assist iron and steel companies in developing a realistic and reliable approach to setting decarbonization targets, which would be in line with climate science and the Paris Agreement target, while also taking into account the way the industry works and interacts with other sectors.

NLMK participates in the project's Technical Working Group along with approximately twenty other organizations from the iron and steel industry, including the World Steel Association and ResponsibleSteel.

A special methodology was deemed necessary because the existing sectoral approach to decarbonization (SBTi SDA[2]) doesn't fully take into account or makes it impossible to take into account such factors as different steelmaking routes (the possibilities of decarbonizing integrated steelmaking and EAF steelmaking differ significantly); metallurgical by-products replacing primary materials in other industries, which significantly reduces their carbon footprint; emission reduction at side projects, etc. The objective of the updated methodology developed as part of the project is to adequately factor in all the nuances of ferrous metallurgy, enabling the creation of a realistic 'road map' for its decarbonization.

NLMK and NOVATEK sign Memorandum of Cooperation to reduce climate impact

In January 2021 NLMK Group and NOVATEK, the largest independent natural gas producer in Russia, signed a Memorandum of Cooperation in the field of mitigating adverse climate impacts.

Cutting greenhouse gas emissions is the key focus of cooperation. NLMK Group and NOVATEK plan to jointly test CO_2 capture, use, and storage technologies, to develop and improve hydrogen production technologies and transportation methods, as well as the use of hydrogen fuel to reduce GHG emissions. NLMK and NOVATEK are also exploring the development of new products required to implement low-carbon technologies.

NLMK Group takes part in first EU-Russia Climate Conference

Sergey Chebotarev, NLMK Group Vice President, and Nikita Vorobyev, Director of Environmental and Climate Affairs, took part in the EU-Russia Climate Conference organized by the EU Delegation to Russia and the SKOLKOVO Business School. Business representatives, officials and experts from Russia and the EU discussed possible solutions to climate change.

Participating in the "Decarbonization of energy-intensive industries" session, Sergey Chebotarev talked about NLMK Group's efforts to reduce its carbon footprint. NLMK follows a diversified approach to the climate agenda, using traditional and innovative tools to cut greenhouse gas emissions. In the coming years, the Company plans to launch a new power plant, which will be fuelled by recovered steelmaking gases. The project will cut greenhouse gas emissions by 650,000 tonnes annually. NLMK is also implementing a portfolio of research projects that focus on the use of hydrogen in the production process, and CO_2 recovery and utilization.

Nikita Vorobyev participated in the "Prospects for the Hydrogen Economy" section, where he shared his outlook on the prospects of using hydrogen in steelmaking and the necessary conditions for such a scenario. In addition, NLMK took part in the "Carbon border adjustment mechanism" session, which involved European Commission representatives, and outlined its vision of the regulation mechanism planned in Europe for imports of carbon-intensive products. NLMK believes that any regulation should take into account each company's individual performance and avoid creating discriminatory conditions within the industry.

NLMK Group supports first Franco-Russian forum on low-carbon industrial development

The forum was organized by the Nauka Innov Centre for Technological Cooperation of the Franco-Russian Chamber of Commerce (CCI France Russie), the trade mission of the Russian Federation in France, the Climate Partnership of Russia, and the Russian Ministry of Economic Development.

NLMK Group, a partner of the forum, participated in a session dedicated to green steelmaking. Nikita Vorobyev, NLMK Group Director of Environmental and Climate Affairs, presented the Company's vision of decarbonization prospects and spoke about current and future projects in the sphere. The session's participants included numerous Russian industry leaders and the French companies Fives, Air Liquide, and Dassault Systèmes, which presented their innovative technological solutions that can assist Russian manufacturers in reaching their climate impact reduction targets.

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

[1] See https://netzerosteelpathwayproject.com/
[2] Science-Based Targets initiative, Sectoral Decarbonization Approach.

IMPACT ON STRATEGY

GRI 201-2

Climate change implies a number of risks and opportunities for the iron and steel sector, which need to be identified in order to manage them and minimize the industry's climate impact. Timely identification of climate risks and opportunities will make it possible to take them into account when developing projects for NLMK Group's next strategy cycle beyond the 2023 horizon.

In the reporting period NLMK partnered up with Carbon Trust (United Kingdom), an independent sustainability consultant, to analyse risks and opportunities related to climate change and NLMK Group's activities for the first time. At the initial stage, the team identified 140 risks and opportunities, and later analysed 90 of them. The risks and opportunities were grouped by similar root causes and then classified by TCFD categories. For every group the team analysed the probability of materialization on the 2030 horizon for various scenarios of global temperature growth, including the Paris Agreement scenario (temperature increase limited to 2°C). The Company believes that Strategy 2022 is highly resilient to climate change according to preliminary assessments.

Physical risks (extreme weather events, temperature change, availability of water resources) have little impact on NLMK Group's activities. The risks of water resource availability only emerge on the long-term horizon after 2030.

In 2021 the list of risks and their impact on the Company can be specified once the project is complete and the climate strategy is approved by the Board of Directors.

TCFD DEFINITIONS OF TRANSITION AND PHYSICAL RISKS

Transition Risks

Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations.

Physical Risks

Physical risks resulting from climate change can be event-driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. Organizations' financial performance may also be affected by changes in water availability, sourcing, and quality; food security; and extreme temperature changes affecting organizations' premises, operations, supply chain, transport needs, and employee safety.

Carbon border adjustment in Europe

Since late 2019 the EU is considering the introduction of an additional import charge for products whose manufacturing is associated with CO_2 emissions. This measure could become the first instance of a cross-border carbon price in the world.

NLMK Group shares European environmental values and closely monitors the initiative's development, participating in consultations and promoting the principles of fairness and non-discrimination. The Company works towards step-by-step greenhouse gas emission reduction, convinced that the mechanism can only be efficient and accepted politically at all levels if it employs a differentiated approach based on the 'polluter pays' principle, which takes into account every individual supplier's actual level of carbon intensity. In addition, the Company believes that any carbon tax should take into account the practices and mechanisms used in other countries for emission regulation, which include pricing among other methods. For instance, not only the mechanism of internal carbon pricing should be taken into account, but also the entire spectrum of carbon neutrality measures used by companies and economies, including measures to increase carbon sequestration via efficient forest management, investment in renewables, and measures to improve energy efficiency.

Considering the complexity of the issue and the high cost of a mistake, we believe it would be practical to integrate the mechanism step-by-step, starting with sectors with the least sophisticated configuration (including in terms of project portfolios) and with the least inclusion in international trade flows.

RISK MANAGEMENT

The internal control and risk management system employed by NLMK is designed to ensure reasonable certainty that the Group's strategic and operational goals will be achieved, to create and protect value for the Group, and to ensure sustainable development by rapidly identifying, assessing, and effectively managing risks and opportunities.

The NLMK Board of Directors, which determines the principles and approaches to the organization of the risk management system and regularly reports on the status of the Company's risks, plays a key role in the risk management process.

NLMK Group classifies climate change-related risks (regulatory, market, reputation) as evolving risks. All processes to manage such risks are integrated into NLMK Group's overarching risk management system (see the Operational Control and Risk Management section for more detail).

The process of analysing NLMK Group's climate-related risks and opportunities began in 2020 as an independent project. The idea is to integrate such risks into NLMK Group's risk management system more actively as new information becomes available.

PERFORMANCE AND TARGETS

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

We are constantly enhancing the level and quality of greenhouse gas emission disclosures. In 2020, we made our disclosures on Scope 1 and Scope 2 more detailed and complete, breaking down emissions by type of activity and by country, and providing data on methane (CH_4) and nitrous oxide (N_2O) emissions in addition to CO_2. Moreover, we presented Scope 3 estimates for the first time, indicating the Company's other indirect emissions related to its upstream activities.

NLMK Group employs recognized international and industry standards and methodologies for GHG emission reporting and calculation, including The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. WRI and WBCSD, 2004 (revised); 2006 IPCC[1] Guidelines for National Greenhouse Gas Inventories / 2019 Refinement; WSA CO_2 Data Collection User Guide; Methodological guidelines on calculation of greenhouse gas emissions by organizations engaged in economic or other activities in the Russian Federation approved by order of the Russian Ministry of Natural Resources and the Environment dd. 30/06/2015 No. 300; EU Emission Trading System: The Monitoring and Reporting Regulation – General guidance for installations, and others.

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

Since early 2020, the carbon content of each incoming batch of coal, coke, and other carbon-containing resources is continuously measured at NLMK Lipetsk and Altai-Koks via laboratory tests. This has enabled higher precision of CO_2 emission calculations using the carbon balance method. NLMK is the first Russian steel company to conduct such a detailed analysis of incoming raw materials in order to determine their carbon footprint.

[1] IPCC – Intergovernmental Panel on Climate Change.

For an adequate comparison with 2020, we adjusted CO_2 emission data for the preceding few years (2016 to 2019) and added data on emissions from mobile facilities, as well as CH_4 and N_2O emissions. The adjustments are due mainly to more precise information about carbon content in coal used. Voluntary reporting standards provide the possibility of reviewing and specifying emission data for previous years.

In 2020, direct and indirect energy GHG emissions (Scope 1 + Scope 2) totalled 33.6 million tonnes of CO_2 equivalent across NLMK Group, which is 4% higher compared to the previous year. The main reason for this growth was higher pig iron output. Meanwhile, compared to 2018, the baseline year of the strategy cycle, emissions were 5% lower.

The overall contribution of additionally calculated emissions from mobile units and CH_4, N_2O emissions to NLMK Group's total direct GHG emissions is less than 1% in CO_2 equivalent.

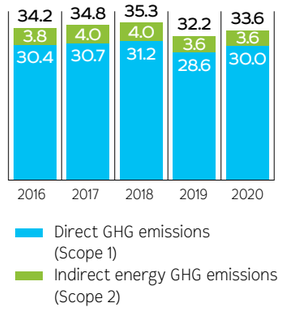
We also evaluated CO_2 emissions from biomass combustion (wood chips and charcoal), which is used at the Lipetsk site for ferroalloy production. These emissions are climate-neutral, provided for reference only, and are not included in the overall sum of reported emissions. The Company is currently considering the prospects of using sustainable biomass in its key steelmaking processes.

NLMK GROUP DIRECT AND INDIRECT ENERGY EMISSIONS, '000 T OF CO_2-EQUIVALENT GRI 305-1, GRI 305-2

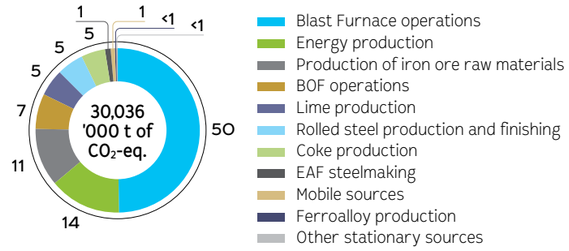
Indicator	2016	2017	2018	2019	2020
Direct GHG emissions (Scope 1)	**30,356**	**30,740**	**31,232**	**28,601**	**30,036**
CO_2	30,280	30,665	31,158	28,531	29,964
Including from stationary sources	30,071	30,459	30,956	28,311	29,753
CH_4	47	47	46	42	44
N_2O	28	28	28	28	28
Indirect energy emissions (Scope 2)[1]	**3,810**	**4,025**	**4,032**	**3,621**	**3,552**
Total (Scope 1 + Scope 2)	**34,166**	**34,765**	**35,264**	**32,222**	**33,587**
Including stationary sources of CO_2	**33,879**	**34,481**	**34,985**	**31,929**	**33,302**
CO_2 emission from biomass combustion (for reference)	20	16	17	25	25

[1] Emissions from fuel combustion in the production of electricity received from the external grid for the needs of the Group's sites (regional method). For the Group's sites in the United States, CH_4 and N_2O emissions are taken into account in addition to CO_2.

GHG EMISSIONS (SCOPE 1 + SCOPE 2), M T OF CO_2- EQUIVALENT



DIRECT GHG EMISSIONS BY TYPE OF ACTIVITY (SCOPE 1) IN 2020[1, 2], %



GHG EMISSIONS (SCOPE 3) UPSTREAM ALONG THE CORPORATE VALUE CHAIN, M T OF CO_2-EQUIVALENT GRI 305-3

TOTAL DIRECT AND INDIRECT GHG EMISSIONS (SCOPE 1+SCOPE 2) BY COUNTRY, '000 T OF CO_2-EQUIVALENT

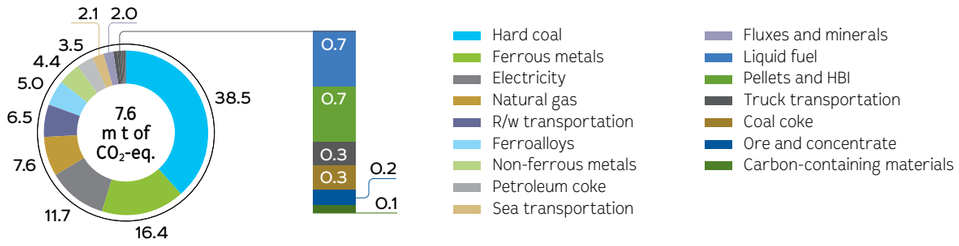
By type of activity, blast furnace operations (50%) and energy production (14%) are the largest contributors to direct greenhouse gas emissions (Scope 1).

For the first time, the analysis includes other indirect greenhouse gas emissions associated with the production of the main types of external resources used by NLMK Group companies (upstream emissions) and their delivery to the companies' gates, as well as the transportation of raw materials and semi-finished products between the Group companies. Calculations are made for the last three years. Estimated coverage is at least 95%. Emissions associated with the transportation of finished products shipped to customers, as well as emissions generated during the use, processing, and disposal of the Company's products, were not considered at this stage. Regarding purchased electric energy for Scope 3 disclosure, we took into account emissions from the extraction, processing, and delivery of fuel to power plants, as well as losses in transmission networks, but did not take into account emissions from fuel combustion at the power plants themselves, since Scope 2 covers the latter.

[1] The CO_2 emissions from the combustion of process gases (blast furnace and coke oven gases) outside the sources of these gases, but within the Group's facilities, are considered equal to the emissions from the combustion of an energy equivalent amount of natural gas, adjusted for the combustion efficiency. The corresponding CO_2 deduction is made for the production sources of process gases.

[2] The "Energy production" category includes emissions from the production of thermal, mechanical, and electrical energy, hydrogen, as well as auxiliary fuel combustion in the energy, gas, and water supply shops.

OTHER INDIRECT GHG EMISSIONS (SCOPE 3) UPSTREAM ALONG THE CORPORATE VALUE CHAIN BY TYPE OF RESOURCE IN 2020, %



The largest amount of other indirect greenhouse gas emissions, 38% of the total, is associated with coal production. These are mainly methane emissions from coal mining. The ferrous metals[1] emissions are mainly related to the production of slabs purchased from third parties for NLMK USA, due to current restrictions (Section 232).

SPECIFIC CO_2 EMISSIONS, STATIONARY SOURCES[2], T CO_2-EQ./T GRI 305-4

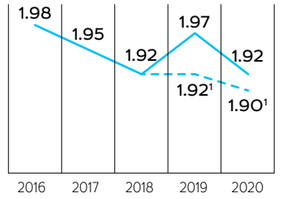
Indicator	2016	2017	2018	2019	2020
Direct emissions (Scope 1)					
Steel + commercial pig iron, t	**1.76**	**1.73**	**1.70**	**1.75**	**1.72**
Steel, t	1.81	1.78	1.77	1.80	1.88
Specific indirect energy emissions (Scope 2):					
Steel + commercial pig iron, t	**0.22**	**0.23**	**0.22**	**0.22**	**0.21**
Steel, t	0.23	0.24	0.23	0.23	0.22
Specific total emissions (Scope 1 + Scope 2):					
Steel + commercial pig iron, t	**1.98**	**1.95**	**1.92**	**1.97(1.92)[3]**	**1.92(1.90)[3]**
Steel, t	2.04	2.02	2.00	2.03(2.00)[3]	2.10(1.98)[3]

In addition to specific emissions per tonne of steel, a common indicator among steel companies, our analysis includes the specific emissions of steel production, including commercial pig iron, as the production of commercial pig iron accounts for a significant share in the total output of the Group. At the same time, most of CO_2 emissions (about 75% for the entire Group) are generated in the operations upstream of and including pig iron production. Due to that, the Company decided to prioritize disclosing the joint indicator for steel and pig iron, since it reflects the Group's actual emissions and the rate of their reduction more accurately.

The increase in specific CO_2 emissions per tonne of steel in 2019 and 2020 compared to previous periods was due to a temporary decrease in steel output during the upgrade programme at the NLMK Lipetsk BF and BOF operations. In addition, 2020 figures were impacted by the output decrease at the Company's European and US companies amid the COVID-19 pandemic. Taking corresponding output normalization into account, the Company's level of specific emissions has been decreasing throughout the 2016–2020 period.

[1] Emissions associated with large-capacity deliveries of ferrous metals mainly from third parties for smelting and rolling at NLMK Group sites.
[2] Consistent with the corporate approach for setting CO_2 emission targets.
[3] Specific emission without the impact of temporary factors, which have to do with lower production.

SPECIFIC CO_2 EMISSIONS (SCOPE 1 + SCOPE 2) FROM STATIONARY SOURCES GRI 305-4



The Group will continue to further slash specific GHG emissions in the period leading up to 2023. Specific emission (Scope 1 + Scope 2) target is 1.91 tonnes of CO_2 per tonne of steel versus 2.0 tonnes in 2019 (5% reduction), per tonne of steel with commercial pig iron – 1.84 tonnes of CO_2 versus 1.92 in 2019 (4% reduction).

In 2020 the Company reviewed and expanded its portfolio of projects aimed at reducing greenhouse gas emissions. These include both standard projects to increase energy efficiency and reduce fuel consumption in blast furnaces and innovative solutions for the use of secondary carbon-based raw materials and biofuel in BF operations, as well as new decarbonization technologies of carbon dioxide capture and utilization. A number of projects has already been launched, and their status and progress are being monitored regularly.

In 2019–2020 we completed a range of previously planned projects aimed at reducing CO_2 emissions. The effects of each project were calculated based on the achieved technical effects for the reviewed period (reduction in the consumption of natural gas, coke and coke fines, energy, oxygen, limestone, dolomite, etc.).

Our new recovery cogeneration plant, which will be launched at NLMK Lipetsk in 2023, will run on by-product gases from blast furnace and steelmaking operations, thus cutting CO_2 emissions by 650,000 tonnes (35 kg per tonne of steel) annually. The step-by-step introduction of new ore beneficiation technologies at Stoilensky in 2020–2023 will increase Fe content in the charge and reduce fuel consumption at the blast furnaces in Lipetsk, which will bring an additional 790,000-tonne reduction in CO_2 emissions (43 kg per tonne of steel) annually. Besides, NLMK is also implementing a portfolio of research projects that focus on the use of hydrogen in the production process, CO_2 recovery and utilization, and other decarbonization areas.

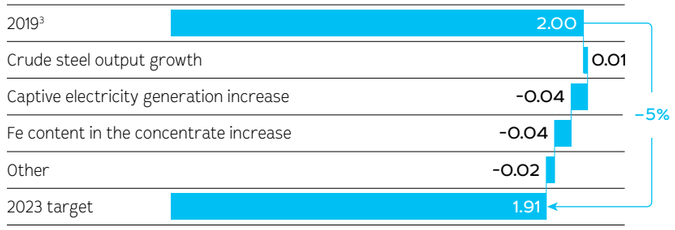
ACTUAL 2020 CO_2 EMISSION REDUCTIONS FROM PROJECTS INCLUDED IN THE 2023 STRATEGIC TARGET GRI 305-5

Project (implemented)	Start-up date	CO_2 emission reduction (Scope 1 + Scope 2), '000 t	CO_2 emission reduction (Scope 1 + Scope 2), kg/t
Construction of co-generation boiler-houses at NLMK Ural in Nizhniye Sergi and Beryozovsky	November 2019	27	1.7
Construction of a water-heating boiler-house at NLMK Ural in Revda	November 2019	7	0.5
Construction of an additional beneficiation section at Stoilensky[1]	July 2020	81	5.1
Turbine blower for Blast Furnace No. 7	November 2019	30	1.9
Use of dynamic stacking model when forming iron ore stacks and the APCS when metering out fluxes in coal preparation sections	December 2020	8	0.5
Stopping the converting process in BOF at set carbon value (for part of the product mix)	August 2020	2	0.1
Other	2019–2020	3	0.2
Total		**158**	**10.0**

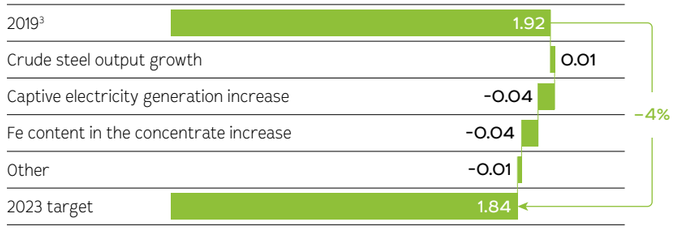
[1] Specific emissions without the impact of temporary factors, which have to do with lower production.
[2] Including effects of operational efficiency associated with the project

At the Lipetsk site, the specific direct CO_2 emissions per tonne of steel in 2020, calculated on the basis of the guidance document[1] of the European Union Emission Trading Scheme (EU ETS), amounted to 1.72 t CO_2/t steel. Compared to the estimated EU ETS benchmark[2] (calculated based on the top 10% of companies in the EU), this gap is already only 8% today. NLMK's goal is to close the gap with the current benchmark to 6% within the current strategic cycle.

NLMK GROUP'S TARGET FOR SPECIFIC EMISSION REDUCTION FROM STATIONARY SOURCES (SCOPE 1 + SCOPE 2), T CO_2/T OF STEEL



NLMK GROUP'S TARGET FOR SPECIFIC EMISSION REDUCTION FROM STATIONARY SOURCES (SCOPE 1 + SCOPE 2), T CO_2/T OF STEEL AND COMMERCIAL PIG IRON



CO_2 EMISSIONS AT THE LIPETSK SITE ACCORDING TO EU ETS (SCOPE 1), T OF CO_2/T OF STEEL

[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 indicator for converter steel under the ETS is not separately established, but there are established benchmarks for coke, sinter, pig iron, lime, dolomite. The given data per ton of steel are calculated at the given consumption factors

[3] Specific emission without the impact of temporary factors, which have to do with lower production

[4] Using the same coke and iron ore consumption rates as at NLMK Lipetsk in 2020

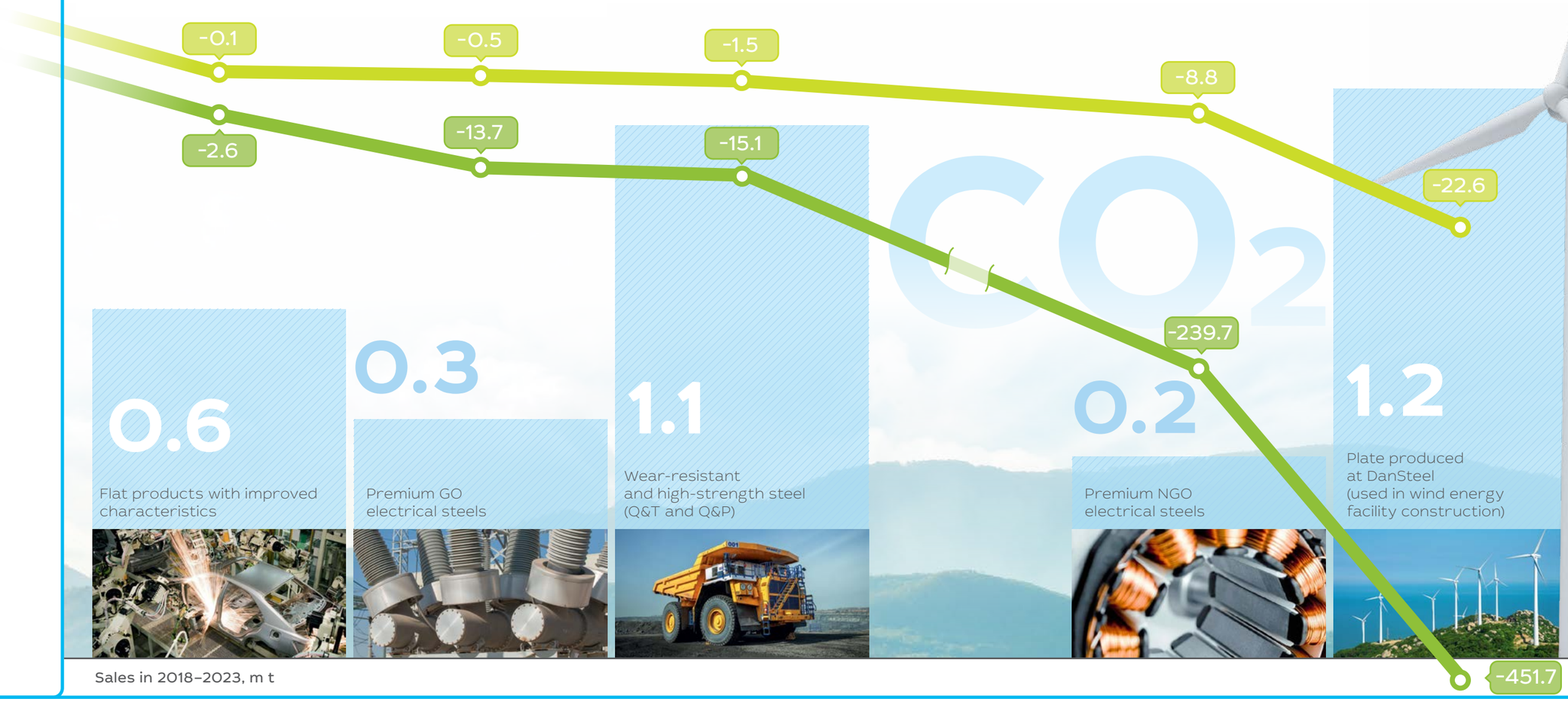
NLMK PRODUCTS CONTRIBUTE TO THE TRANSITION TO A LOW-CARBON ECONOMY

Forests are the largest carbon sink on the planet, they absorb more CO_2 than they release into the atmosphere. However, even in the energy industry, there are sectors that contribute to reducing greenhouse gas emissions in their own way. For example, solar and wind energy are replacing fossil fuels.

Calculating the impact of consumers using certain product categories on curbing CO_2 emissions is a common practice and is widely used in steel and other industries.

NLMK Group produces plate, which is used in the construction of wind power facilities, and premium electrical steel, thanks to which consumers are able to reduce specific magnetic losses in transformers and electric motors. NLMK also produces high-strength and wear-resistant steel grades that contribute to improving safety in a number of applications and lightening the weight of steel structures, which, in turn, leads to lower consumption of fuel and steel itself (replacing lower-quality grades), and, ultimately, contributes to the transition to a low-carbon economy. The Company estimates that the target sales volume of such steels during the 2018–2023 strategy cycle will allow it to prevent approximately 34 million tonnes per year of CO_2 emissions on the consumer side. This volume exceeds the Company's emissions from steel production. Taking into account the life cycle of the same steel volume (20–30 years), it can prevent over 700 million tonnes of emissions.

REDUCTION OF CO_2 EMISSIONS
ON THE CONSUMER SIDE THROUGH NLMK PRODUCTS



Total

CO_2 emission reduction on consumer side, annualy

-33.5 m t

CO_2 emission reduction on consumer side, life cycle

-722.8 m t

Sales in 2018–2023

3.4 m t

NLMK DanSteel supplies steel heavy plates for next-generation floating offshore wind farm

NLMK DanSteel, NLMK Group's plant in Denmark, supplied its heavy plate for the Wind Float Atlantic project. Wind Float Atlantic is the first semi-submersible floating wind farm in the world located off the north coast of Portugal. NLMK DanSteel's high-quality steel heavy plates are used in the production of floating platforms and foundations.

Wind Float Atlantic comprises three wind turbines 8.4 MW each, mounted on floating platforms. The third platform was installed in July, and the wind farm will start operating at full capacity. The wind farm will be able to generate enough energy to supply 60,000 households in Portugal. Wind Float Atlantic will save almost 1.1 million tonnes of CO_2 emissions per year.

In 2020, NLMK DanSteel delivered more than 150,000 tonnes of steel for the manufacture of onshore and offshore wind farms, which can generate close to 3 GWh of 'green' electricity per year. The Company's customers are such industry leaders as Ørsted, Vattenfall, Equinor, Siemens Gamesa, Vestas, GE Renewable Energy.

The Company's share on the European offshore wind energy market has already reached 14%, and 20% in the onshore segment, attesting to its leadership in supplies to a key renewable energy sector.

NLMK Verona supplies special steel for wind power

NLMK Verona, the Group's Italian plant, supplies steel for the manufacture of wind turbine flanges. The flange of a wind turbine is its central connecting part and is manufactured by a limited number of companies in the world due to strict product requirements. NLMK Verona supplies about 15,000 tonnes of steel per year for the wind power generation sector, including for such projects as Beatrice, Galloper, Mercure, Hywind, etc. The company's key customer is euskalforging, the world's largest manufacturer of offshore wind turbine flanges.

NLMK steel in superpower transformers for Krasnoyarsk HPP

In the reporting year NLMK supplied premium laser-treated electrical transformer steel to SVEL Group, a leading Russian manufacturer of electrotechnical equipment. NLMK steel was used to make a 630 MVA three-phase potential transformer for the Krasnoyarsk Hydro Power Plant.

Currently, the hydroelectric power plant is undergoing a comprehensive upgrade to install superpower transformers. By 2024, NLMK plans to supply close to 2,000 tonnes of steel to SVEL for the production of six more transformers. NLMK steel properties will enable a reduction in specific magnetic losses in transformers of up to 15% compared to commercial grades.

TCFD INDEX

TCFD recommendations	Annual report 2020	Page
GOVERNANCE		
Disclose the organisation's governance around climate-related risks and opportunities		
Describe the board's oversight of climate-related risks and opportunities	Information is presented in sections Sustainability management and Our approach to managing environmental protection	p. 26, p. 28
Describe management's role in assessing and managing climate-related risks and opportunities.	Information is presented in sections Sustainability management and Our approach to managing environmental protection	p. 26, p. 28
STRATEGY		
Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material		
Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term	Information is presented in sections Climate change and Impact on strategy	p. 26, p. 30
Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning	Information is presented in sections Climate change and Impact on strategy	p. 26, p. 30
Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	Information is presented in sections Climate change and Impact on strategy	p. 26, p. 30
RISK MANAGEMENT		
Disclose how the organisation identifies, assesses, and manages climate-related risks		
Describe the organisation's processes for identifying and assessing climate-related risks	Information is presented in sections Climate change and Risk management	p. 26, p. 31
Describe the organisation's processes for managing climate-related risks	Information is presented in sections Climate change and Risk management	p. 26, p. 31
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	Information is presented in sections Climate change and Risk management	p. 26, p. 31
METRICS AND TARGETS		
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material		
Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	Information is presented in sections Climate change and Performance and targets	p. 26, p. 31
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks	Information is presented in sections Climate change and Performance and targets	p. 26, p. 31
Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	Information is presented in sections Climate change and Performance and targets	p. 26, p. 31

PLANS FOR 2021 AND THE MEDIUM TERM

In 2021, the Company plans to start the development of NLMK Group's long-term climate change programme and to continue assessing the Company's risks and opportunities taking various climate change scenarios into account. Additionally, NLMK plans to participate in the Carbon Disclosure Project (CDP) programme in 2021 for the first time.

ENERGY EFFICIENCY

MAJOR THEME
ENERGY

KEY EVENTS IN 2020

- The fourth recovery CGP power unit was launched, with a steam turbocharger for the air blast supply at Blast Furnace No. 7.
- A project to switch walking beam furnaces in the Hot Rolling Shop to natural gas was completed.
- K-1500 and K-500 compressors in the NLMK Lipetsk Oxygen shop were upgraded.
- A 220 kV substation was commissioned at the Revda plant (NLMK Ural).
- Supplies of medical oxygen from NLMK Lipetsk to clinics and hospitals in nearby regions reached record highs amid the COVID-19 pandemic.
- A daily-average record was set in energy generation at NLMK Lipetsk captive facilities (co-generation plant – 346.5 MW, recovery plant – 160.1 MW).
- NLMK Lipetsk halved its purchases of hot water heat energy by optimizing its power resource supply arrangements.
- NLMK Ural sites purchased 15 times less heat energy due to using cogeneration units.

UNITED NATIONS GLOBAL COMPACT PRINCIPLES

- **Principle 7.** Businesses should support a precautionary approach to environmental challenges.
- **Principle 8.** Businesses should undertake initiatives to promote greater environmental responsibility.
- **Principle 9.** Businesses should encourage the development and diffusion of environmentally friendly technologies.

GLOBAL SUSTAINABLE DEVELOPMENT GOALS

396.4
PJ
(+3.6% yoy)
NLMK Group's total energy consumption in 2020

0.094
Gcal/t
(–1.7% yoy)
reduction in specific energy intensity of steel production at NLMK Lipetsk

Our project to boost the energy efficiency of lighting at NLMK's NGOES Shop won **the Golden Photon Award** in the international electrotechnical industry competition of the Eurasian Economic Community.

OUR APPROACH TO MANAGING ENERGY EFFICIENCY

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

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

The Group's commitments under the IMS Policy go beyond introducing advanced energy-efficient technologies and solutions that reduce the consumption of natural and secondary energy resources.

The Group is additionally committed to developing power generation capabilities that utilize metallurgical gases and other secondary energy resources, and to supporting the use of renewable energy sources where applicable and reasonable (for more information on our IMS Policy, please follow the *link*).

The Unified Technical Policy on Energy Complex Management has been in effect at NLMK Group's Russian companies since 2014. The objective of this policy is to introduce the most advanced technical solutions, machinery, and technologies that bolster the reliability, efficiency, and safety of the Group's energy complex. The policy sets out priorities and rules for applying technical solutions related to the utilization of energy facilities, the implementation of investment programmes for new construction, the re-tooling of core equipment, overhauls of energy assets belonging to NLMK Group companies, and the innovative and promising development of these companies.

NLMK Group Vice President for Energy and the Environment and the units reporting to him work to frame the principles and strategic goals for improving the energy efficiency of production and developing the Group's energy facilities in addition to setting energy consumption KPIs and tracking them. Each year we create and implement a portfolio of energy efficiency projects aimed at attaining our energy resource use targets.

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

CERTIFICATION

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

The system encompasses nine core production sites:

1. NLMK Lipetsk
2. VIZ-Steel
3. Altai-Koks
4. Dolomit
5. NLMK Kaluga
6. NLMK Metalware
7. NLMK Ural
8. Stagdok
9. Stoilensky

NLMK DanSteel is also certified under ISO 50001.

In 2020, NLMK Group successfully completed a cycle of recertification audits of the energy management system at its sites. A certificate was issued to confirm their compliance with ISO 50001:2018. Additionally, a project was launched in 2020 to consolidate the management systems of all Group companies into an integrated management system (IMS).

MEMBERSHIP AND PARTICIPATION IN ORGANIZATIONS

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

NLMK Lipetsk is a member of the NP Market Council organization, which ensures the Company's participation in the wholesale electricity and power market.

In November 2010 NLMK Lipetsk joined the non-commercial partnership SRO Union of Independent Energy Audit and Energy Expert Organizations.

ENERGY RESOURCE CONSUMPTION IN 2020

In 2020 total energy consumption within the Company stood at 396.4 PJ, which is 14 PJ higher than in 2019. The increase is due to the commissioning of new production capacities at the Lipetsk site (Basic Oxygen Furnace No. 3 in BOF Shop No. 2) and a new batch annealing furnace at NLMK Metalware.

Non-renewable energy consumption totalled 394.7 PJ.

NLMK Group uses a variety of non-renewable energy resources in its production activities: 26.0% of all energy consumed comes from natural gas, and 59.9% comes from coal and coke products (minus marketed coke products).

In addition, we use renewable energy sources (RES), wood chips, and charcoal to produce ferroalloys.

In 2020 the share of electricity from renewable sources totalled 5.2% of all purchased electric energy. The share of renewable electric energy in all NLMK Group energy consumption was 0.42%.

RENEWABLE ELECTRIC ENERGY CONSUMPTION ACROSS NLMK GROUP

GRI 302-1

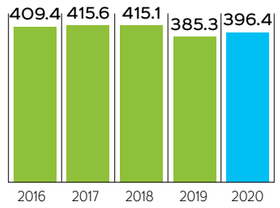
Indicator	2016	2017	2018	2019	2020
Share of renewable electric energy in purchased energy, %	4.79	4.81	4.86	5.10	5.15
Total share of renewable electric energy in total energy consumed, %	0.35	0.36	0.36	0.37	0.42
Total renewable electric energy consumed, PJ	1.42	1.50	1.51	1.43	1.68

NLMK Group sites made no direct purchases from renewable energy suppliers. The share of generation from renewables is shown as assumed for Europe and the US as of the end of 2019 according to the Monthly Energy Review US report by the Energy Information Administration and The European Power Sector in 2019 report (available *here* on p. 120 and *here* on p. 7).

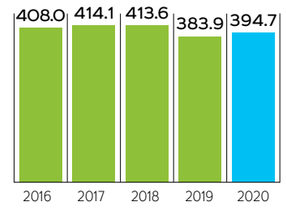
SHARE OF RENEWABLE ELECTRIC ENERGY IN TOTAL PURCHASED ELECTRICITY BY REGION, WITHOUT TRANSIT FLOWS, %

Region	Share of renewable energy	Source	Companies
Russia, Central Unified Energy System zone (Central and Northwestern Federal Districts)	1.9	Hydro	NLMK Lipetsk, Stoilensky, Stagdok, Dolomit, NLMK Kaluga
Russia, Ural Unified Energy System zone (Ural and Volga Federal Districts)	2.8	Hydro, wind, solar	NLMK Ural, NLMK Metalware, VIZ-Steel
USA	17.6	Hydro, wind, solar, biofuel	NLMK Indiana LLC, NLMK Pennsylvania LLC, Sharon Coating LLC
Belgium	20.6	Wind, solar, biofuel	NLMK La Louvière S.A., NLMK Clabecq S.A.
France	20.5	Hydro, wind, solar, biofuel	NLMK Strasbourg S.A.
Italy	40.1	Hydro, wind, solar, biofuel	NLMK Verona SpA
Denmark	83.9	Wind, solar, biofuel	NLMK DanSteel A/S

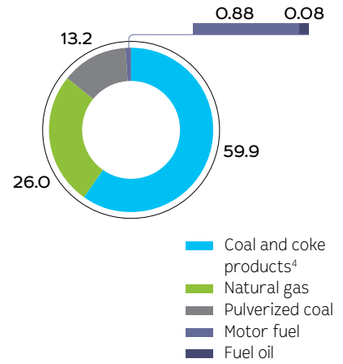
GROSS ENERGY CONSUMPTION BY NLMK GROUP[1], PJ GRI 302-1



CONSUMPTION FROM NON-RENEWABLE SOURCES BY NLMK GROUP[2], PJ GRI 302-1



BREAKDOWN OF NON-RENEWABLE FUEL CONSUMPTION BY NLMK GROUP IN 2020[3], % GRI 302-1



NLMK GROUP CONSUMPTION OF NON-RENEWABLE FUELS[3], PJ GRI 302-1

Fuel type	2016	2017	2018	2019	2020
Coal and coke products[4]	218.37	216.52	207.94	184.30	196.94
Natural gas	99.409	91.645	87.750	91.262	85.499
Pulverized coal	18.10	28.40	43.30	36.15	43.36
Motor fuel (petrol, diesel, liquefied gas)	2.81	2.76	2.79	2.91	2.90
Fuel oil	0.26	0.04	0.04	0.21	0.27
Total	**338.93**	**339.37**	**341.83**	**314.92**	**328.97**

[1] The methodology for calculating the Company's energy consumption was adjusted: purchased energy minus sold energy (sales, shipment, transfer) at every production site; total across all sites.

[2] The methodology for calculating non-renewable energy consumption has been adjusted: total energy consumption by the Company minus renewable electric energy.

[3] Consumption of coke products and motor fuel has been adjusted because data sources have changed (added diesel fuel consumption by the Mining Division in '000 litres and coke fine consumption by NLMK Ural). Consumption of non-renewable fuels is shown net of fuel sales/shipment as products.

[4] Consumption of coal and coke products is shown net of sales/shipments of coke products (coke breeze, lump coke, coke nut, pitch coke) to 3rd parties.

CONSUMPTION, GENERATION, AND SALE OF ELECTRICITY AND THERMAL ENERGY BY NLMK GROUP, PJ GRI 302-1

Indicator	2016	2017	2018	2019	2020
Electricity and thermal energy obtained for consumption					
Electrical power obtained	83.06	87.32	87.30	78.47	77.68
Thermal energy obtained as steam	0.45	0.51	0.50	0.48	0.48
Thermal energy obtained as hot water	1.64	1.52	1.59	1.33	1.01
Total	**85.15**	**89.35**	**89.39**	**80.28**	**79.17**
In-house electricity and thermal energy generation					
Electricity generation	46.99	46.34	49.36	50.01	49.93
Thermal energy as steam	23.79	23.78	21.90	21.75	22.26
Thermal energy as hot water	8.68	7.96	9.81	7.44	7.59
Total	**79.47**	**78.07**	**81.07**	**79.20**	**79.77**
Electricity and thermal energy sold to external consumers					
Electricity sold and transmitted	11.06	11.78	10.70	8.98	8.60
Heat energy sold and transmitted as steam	0.34	0.36	0.35	0.37	0.40
Heat energy sold and transmitted as hot water	2.69	2.56	2.76	2.36	1.92
Total	**14.08**	**14.70**	**13.81**	**11.71**	**10.92**

SPECIFIC ENERGY INTENSITY[1] AT THE LIPETSK SITE, GCAL/T GRI 302-3

Indicator	2016	2017	2018	2019	2020
Specific energy intensity	5.599	5.491	5.469	5.641	5.546

[1] Specific energy intensity = (energy consumption during steel production / extraction and processing of raw materials, Gcal) / (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 Kaluga), 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, hydrogen, and commercial pig iron.

CAPTIVE ELECTRICITY GENERATION

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

Electricity is generated at the Company's captive power plants, which are chiefly powered by recycled fuel gases from steel production. Approximately 80% of the electricity generated at the Lipetsk site (and used for its production needs only) and 100% of the electricity generated at Altai-Koks is produced using NLMK Group's captive recyclable resources (steelmaking gases).

Maximizing the utilization of available recyclable energy is one of the main challenges faced by NLMK Group. Overcoming this challenge will make it possible to not only minimize costs, but to also reduce our environmental impact by slashing emissions of harmful substances and greenhouse gases.

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

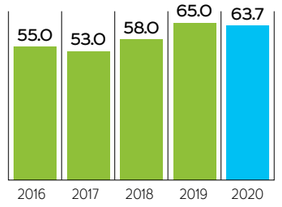
NLMK URAL, 11 MW

- **Mini gas-piston co-generation plant:** fuel – natural gas

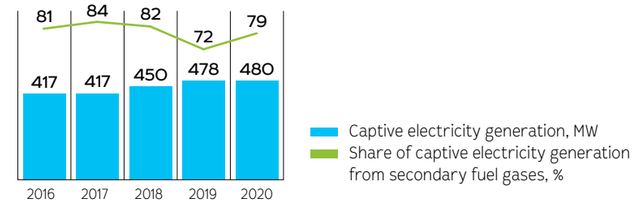
In the reporting period, the total installed in-house generation capacity was 733 MW: 522 MW at the Lipetsk site and 200 MW at Altai-Koks; the installed capacity of gas-piston units at NLMK Ural was 11 MW.

In 2020, NLMK Lipetsk generating capacities set an average daily record in electricity generation: (CGP – 346.5 MW, RCGP – 160.1 MW, total – 506.6 MW).

SHARE OF CAPTIVE ELECTRICITY IN TOTAL ELECTRICITY CONSUMPTION AT NLMK LIPETSK[1], %



CAPTIVE ELECTRICITY GENERATED AT NLMK LIPETSK[2]



[1] The share of captive electricity generation n 2020 is lower than in 2019 because of the increase in overall energy consumption on the site (start-up of new equipment for Basic Oxygen Furnace No. 3 in BOF Shop No. 2).

[2] The share of captive electricity generation from secondary fuel gases went up in 2020 due to increased utilization of BF gases after repairs at Blast Furnaces No. 6 and 7 were completed in 2019.

Construction works are ongoing at a new recovery co-generation plant (RCGP-2) fuelled by secondary energy resources, which will bring NLMK Lipetsk's self-sufficiency in electricity to 94%

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

In 2020, design documentation engineering was completed for the main facilities in the new power plant complex, and the project was approved by the State Environmental Impact Assessment Authority

The 2023 launch of this new power plant running on by-product gases of blast furnace and steelmaking operations will cut CO_2 emissions by 650 kt (36 kg per tonne of steel) annually.

Stoilensky expands energy capacities in open-cast mine

Stoilensky Mining and Beneficiation Plant, an NLMK Group company, has completed construction of the main step-down substation (MSDS-15) at its open-cast mine. The substation generates electricity to power mining machinery, traction units, and drain well equipment. The construction works were part of an NLMK Group Strategy 2022 project to boost the capacity of the open-cast mine to 42 million tonnes of ore annually.

IMPLEMENTING ENERGY EFFICIENCY PROJECTS

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

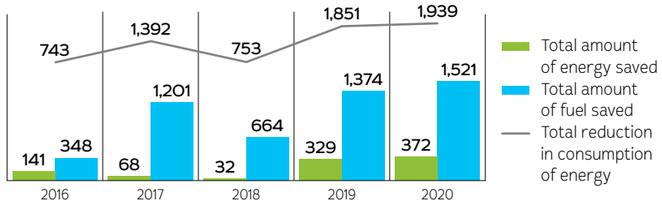
- Increasing the efficiency of fuel gas utilization in electricity generation
- Improving the efficiency of compressor equipment and cooling equipment
- Replacing pumping equipment with more energy-efficient units
- Optimizing process charts for the production of technical gases
- Optimizing the load and configuration of energy transportation networks, optimizing the operation modes of energy equipment

As part of the target-oriented programmes, lighting fixtures at NLMK Group sites were replaced with more advanced and efficient solutions. Previous work to improve efficiency was continued, such as replacement of pumping equipment and projects to improve the efficiency of compressor operation.

OPTIMIZATION INITIATIVES UNDERTAKEN BY NLMK GROUP IN 2020

The energy efficiency and optimization projects carried out in 2020 for the co-generation and recovery plants at NLMK Lipetsk and the co-generation plant at Altai-Koks aimed to improve the operation modes and control algorithms of boilers and turbines, apply a new technology of heating combustion air, increase the surface area of economizers, and optimize equipment repairs.

REDUCTION OF ENERGY CONSUMPTION AS A RESULT OF ENERGY-SAVING INITIATIVES (PROGRAMMES) AT LIPETSK SITE, TJ GRI 302-4



NLMK DanSteel to build the most environmentally friendly reheating furnace in Europe

The new, cleaner furnace will open up new opportunities to expand production. This major investment is part of a larger strategy, aimed, inter alia, at enhancing the quality of plate for offshore wind turbines.

The furnace will reduce emissions of CO_2 and NO_x by 15% and 75%, respectively. NO_x emissions will go down to a quarter of the maximum level permitted by Danish legislation.

PLANS FOR 2021 AND THE MEDIUM TERM

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

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