NORNICKEL

2018 Annual report

ADVANCING ON SUSTAINABLE GROWTH

2018 ANNUAL REPORT
MMC NORILSK NICKEL

Reporting period from 1 January 2018 to 31 December 2018

The 2018 annual report of PJSC "MMC "Norilsk Nickel" (MMC Norilsk Nickel, Nornickel, the Company) incorporates the results of MMC Norilsk Nickel and other operations of the Norilsk Nickel Group (the Group). For the purposes of this annual report, the Norilsk Nickel Group shall refer to a group of companies that includes MMC Norilsk Nickel and its subsidiaries. The largest subsidiaries of the Norilsk Nickel Group and their shares in the capital of MMC Norilsk Nickel are presented in the 2018 consolidated IFRS financial statements. The accuracy of information contained in this report was confirmed by the Audit Commission and approved by the Company's Board of Directors and Annual General Meeting of Shareholders.

PRELIMINARILY APPROVED
by the Board of Directors of MMC Norilsk Nickel
Minutes No. GMK/11-pr-bd of 26 April 2019

ACCURACY OF INFORMATION CONFIRMED
by the Audit Commission of MMC Norilsk Nickel
Opinion of 19 April 2019

APPROVED
by the Annual General Meeting of Shareholders
of MMC Norilsk Nicke
Minutes No. 1 of 10 June 2019

Vladimir POTANIN

President,
Chairman of the Management Board
MMC NORILSK NICKEL

Sergey MALYSHEV

Senior Vice President —
Chief Financial Officer
MMC NORILSK NICKEL

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The interactive version of the 2018 Annual report is available at: https://ar2018.nornickel.ru

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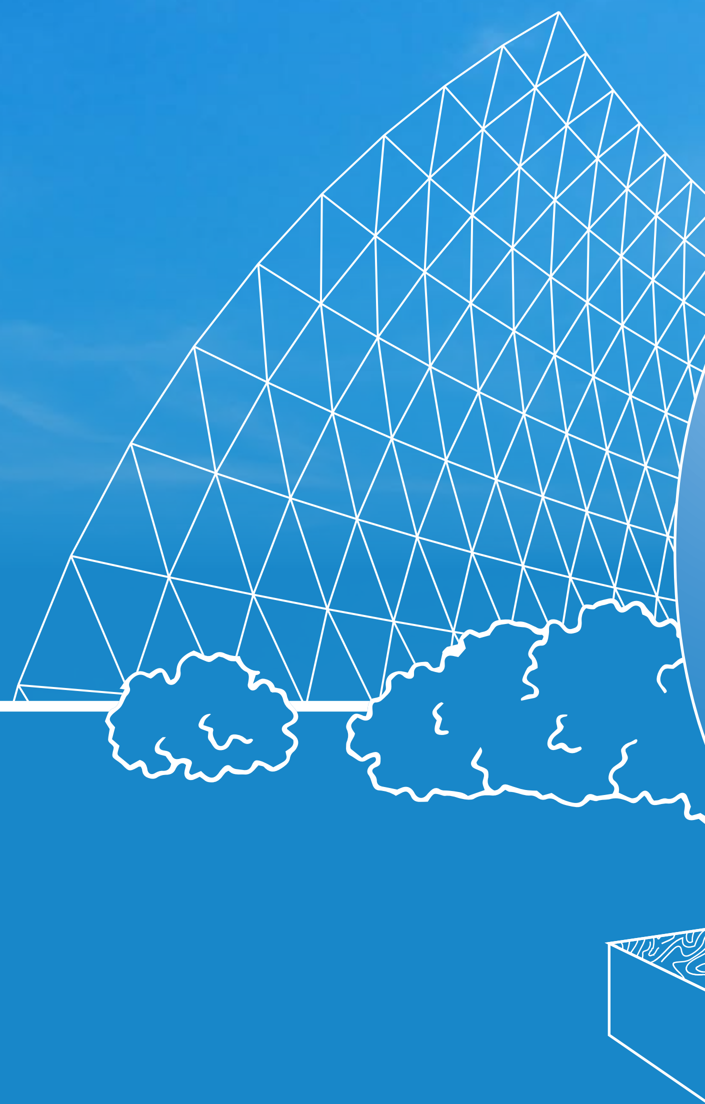
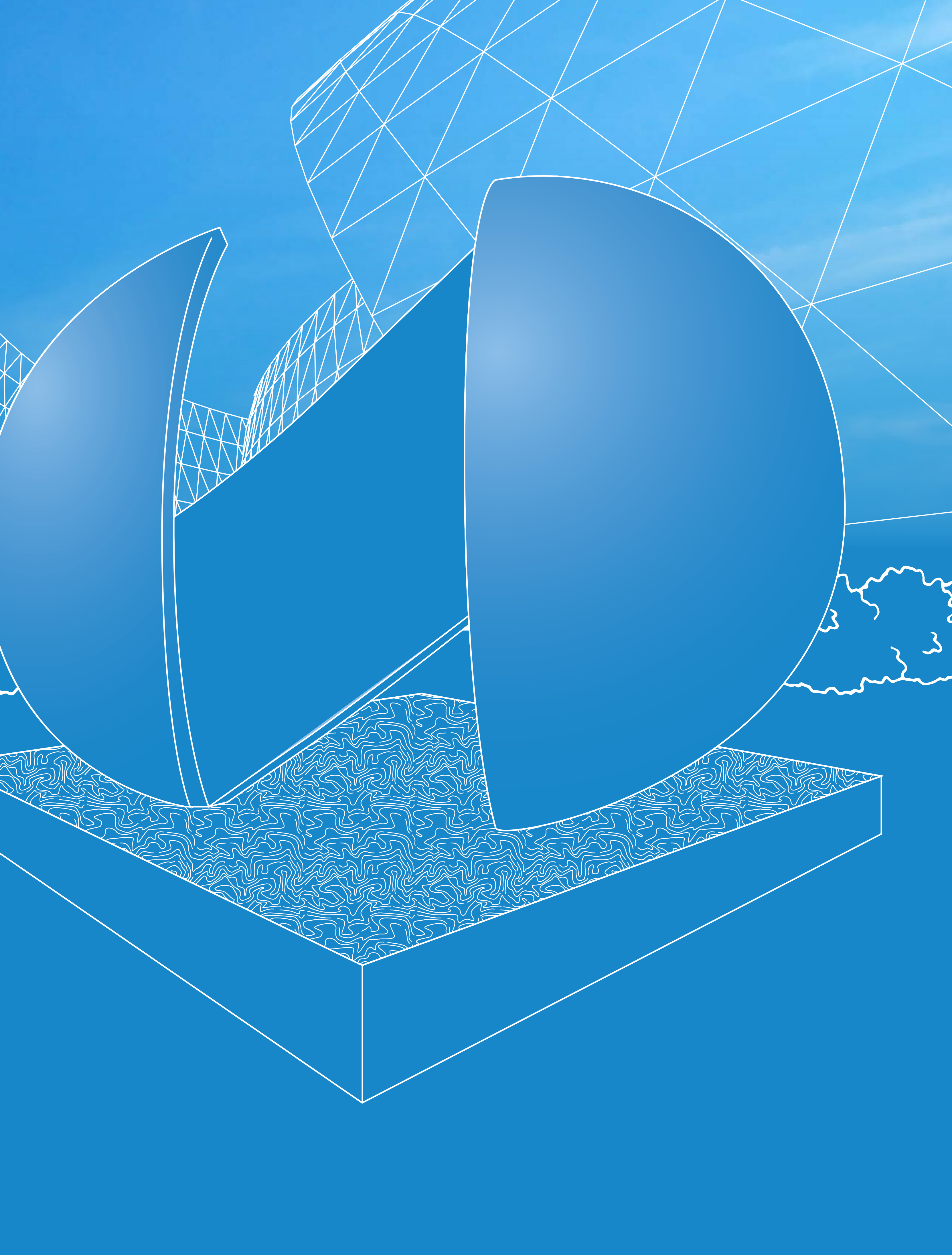
Company overview





Company profile

The Norilsk Nickel Group includes MMC Norilsk Nickel (Nornickel or the Company) and its subsidiaries. MMC Norilsk Nickel is the core (parent) company of the Norilsk Nickel Group.

>>> *For more details on the asset structure, please see*
p. 272–273

The Norilsk Nickel Group (the Group) is Russia's leading metals and mining company, the largest palladium and refined nickel producer in the world, and a major producer of platinum, copper and cobalt. In addition, the Group produces rhodium, silver, gold, iridium, ruthenium, selenium, tellurium, and sulphur.

EXPLORATION

MINING

PROCESSING OF MINERALS

Mineral resources[1]

Nornickel exploits a unique mineral resource base of Tier I mining assets representing one of the world's richest reserves of metals based on size and relative grades. Moreover this resource base is virtually unrivalled in terms of the range of metals such as nickel, copper and a full range of PGMs and other precious metals.

	Proven and probable reserves	Measured and indicated resources
Ore	785 mt of ore	2,209 mt of ore
Nickel	6.9 mt of nikel	15.3 mt of nikel
Copper	12.1 mt of copper	23.5 mt of copper
PGM	3.8 kt of PGM (123 moz)	8.2 kt of PGM (263 moz)

>>> **For more details on the Company's reserves and resources, please see**
p. 276–277

[1] *The Company's reserves and resources as at 31 December 2018 are reported according to the JORC Code, include wholly owned international assets and exclude mineral deposits in Chita region.*

The Group's assets

Russia. Polar Division, Medvezhy Ruchey (100% stake), Kola MMC (100% stake), GRK Bystrinskoe (Bystrinsky GOK, 50.01% stake).

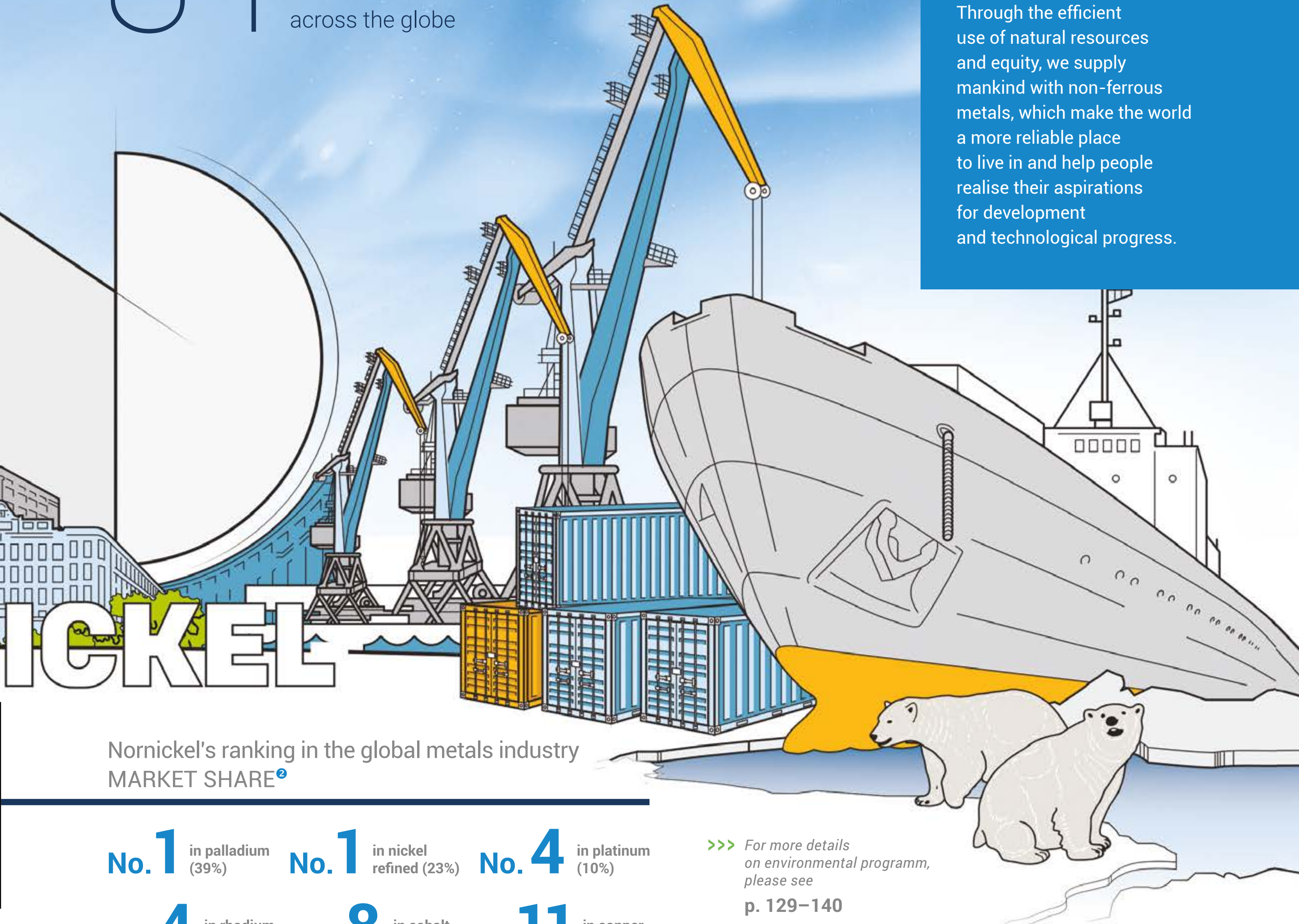
Finland. Norilsk Nickel operates Norilsk Nickel Harjavalta (100% stake), a nickel refinery facility that was acquired by the Group in 2007. The refinery is fully integrated into the Group's production flow, processing the Group's Russian feedstock.

South Africa. The Group owns 50% of Nkomati, which operates a nickel mine of the same name. The co-shareholder of the company is African Rainbow Minerals.

34 The Company's products are distributed to countries across the globe

COMPANY'S MISSION

Through the efficient use of natural resources and equity, we supply mankind with non-ferrous metals, which make the world a more reliable place to live in and help people realise their aspirations for development and technological progress.

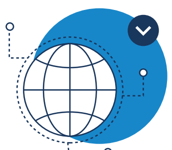


Nornickel's ranking in the global metals industry
MARKET SHARE[2]

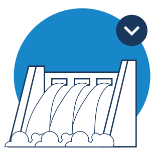
No. 1 in palladium (39%)	No. 1 in nickel refined (23%)	No. 4 in platinum (10%)
No. 4 in rhodium (8%)	No. 8 in cobalt (3%)	No. 11 in copper (2%)

[2] *Market share of palladium, nickel, platinum and rhodium calculated on the basis of production refined metals and of the copper and cobalt – the basis of metals contained in ore mined.*

In addition to the production facilities, the Group operates:

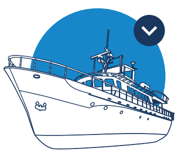


Captive global sales network



Fuel and energy assets

A wide range of R&D facilities



River fleet, river and sea port terminals, and a unique Arctic cargo sea fleet

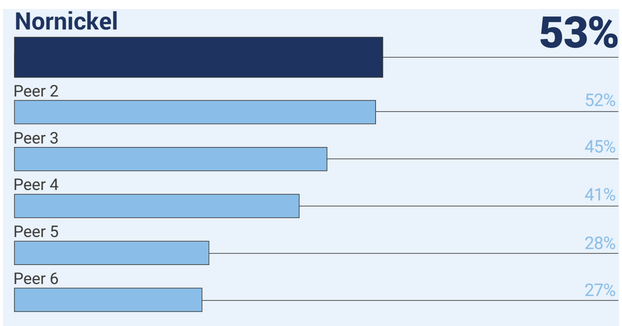
>>> *For more details on environmental programm, please see*
p. 129–140

Nornickel implements an unprecedented **environmental program** aimed at improving the environmental situation in Russia and in the world

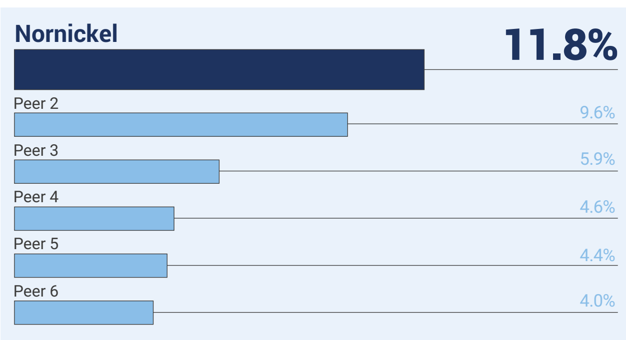
KEY HIGHLIGHTS

The year 2018 was marked by a favourable macro environment and a strong operating performance. The markets of almost all our core commodities except for platinum posted strong price gains, cost inflation was subdued as domestic inflation in Russia was low. Nornickel increased copper and palladium sales volumes by approximately 20% as well a realized tangible results from operating cost savings due to the implementation of a long-term efficiency program, including digitalization projects. Nornickel also generated maiden EBITDA of almost USD 100 million from its newly commissioned Bystrinskoye copper project.

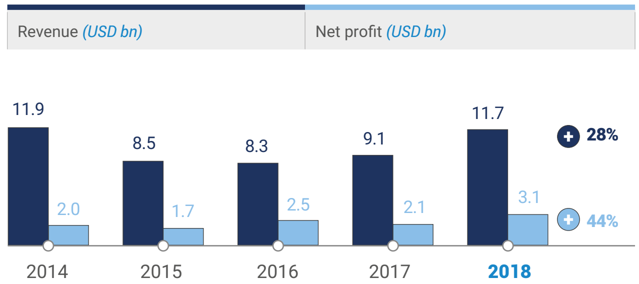
Global industry **leading EBITDA margin** in 2018[1]

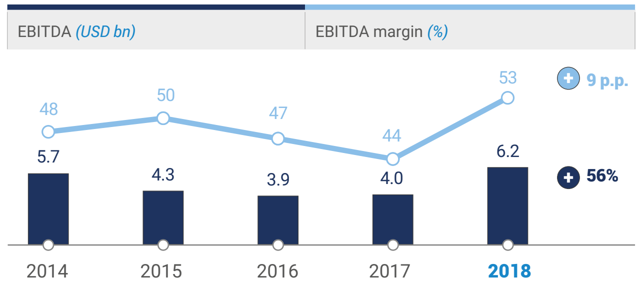


Global industry **leading dividend yield** in 2018[1]

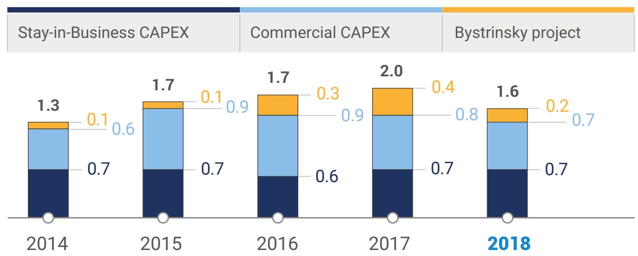


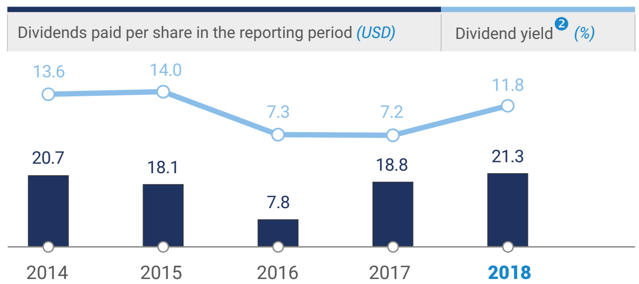
FINANCIAL HIGHLIGHTS

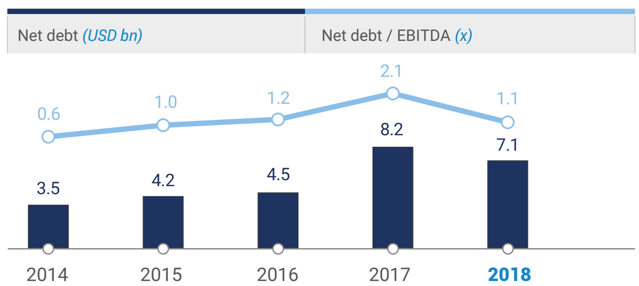




Investments *(USD bn)*







>>> *For more details on financial results, please see the Financial Results (MD&A) section and IFRS Financial Statements on* **p. 102–113, 222–269**

1. *Peer group includes Anglo American, BHP, Glencore, Rio Tinto, Vale.*
2. *Dividend yield for each calendar year was calculated using the amount of dividends recommended by the Board of Directors for this calender year and the average ADR price for this year according to Bloomberg.*

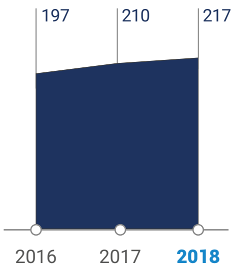
OPERATING HIGHLIGHTS

Volumes of core metals from own Russian feed

For more details on the Company's operating performance, please see the Historical Operating performance section on **p. 274**

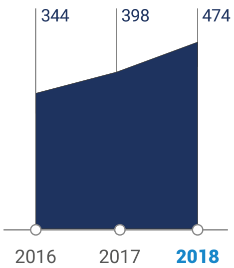
Medium-term production outlook is available in the 2018 strategy update presentation (slide 28) disclosed on Nornickel's website at https://www.nornickel.com/upload/iblock/88f/20181117_Strategy_Update_2018_FINAL_ENG.pdf

Nickel
Ni *(kt)*



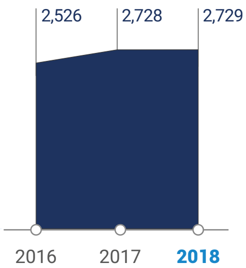
+3%

Copper
Cu *(kt)*



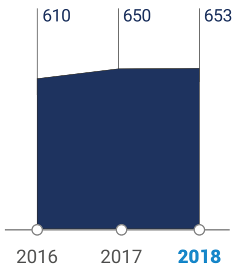
+19%

Palladium
Pd *(koz)*



+0.04%

Platinum
Pt *(koz)*

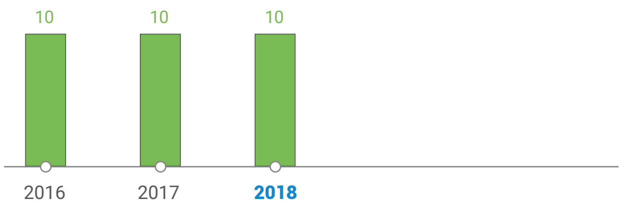


+0.3%

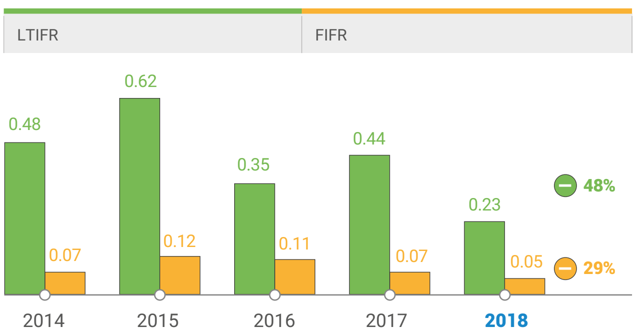
SUSTAINABLE PERFORMANCE HIGHLIGHTS

Nornickel has started the second phase of its environmental programme and launched infrastructure upgrades, digitalisation of data and other initiatives which comply and support with the long term national strategic priorities set by the Russian Federal Government.

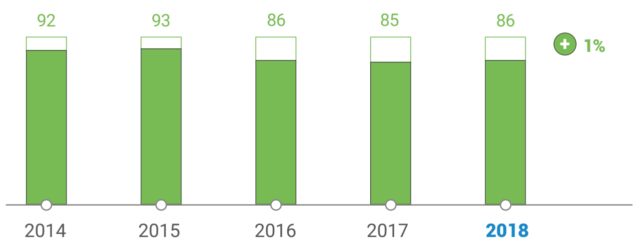
GHG emissions *(mt)*



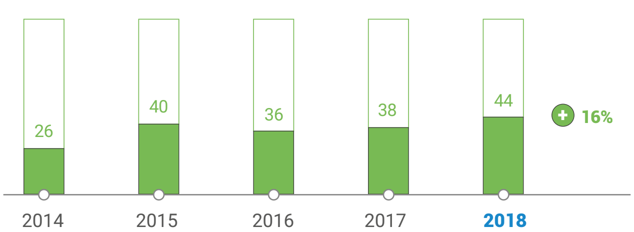
Total number of accidents *(%)*



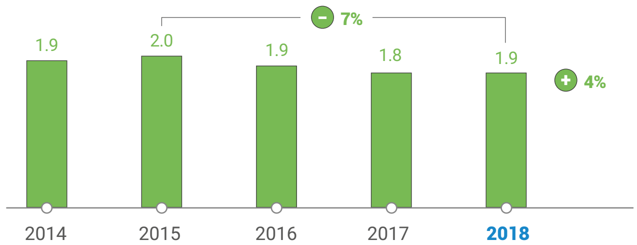
Water reused *(%)*



Electric power generated from renewable sources *(%)*



SO_2 emissions *(mt)*



Global ESG initiatives

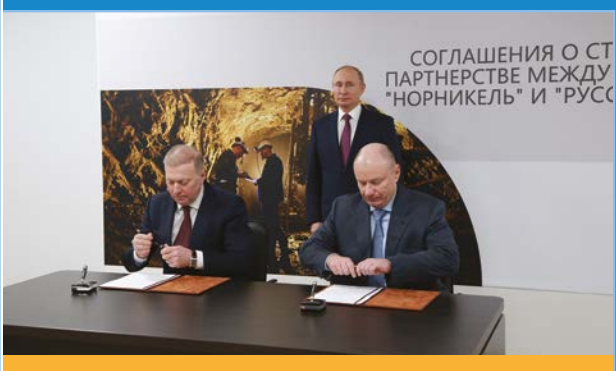
For more details on the Company's sustainability ratings, please see the Strategic Priorities section on **p. 20–27**

2018 MILESTONES

CREDIT RATING UPGRADE

Moody's upgraded Nornickel's credit rating to Baa3 (investment grade) and raised its outlook to positive. The Company's credit ratings from all the three international rating agencies (Fitch, Moody's and S&P Global) currently qualify as investment grade.

>>> *For more details on the initiative, please see*
p. 212



NORNICKEL AND RUSSIAN PLATINUM

Nornickel and Russian Platinum signed a strategic partnership agreement to set up a 50/50 joint venture (JV) with a view of developing the Norilsk Industrial District deposits. The partners' contributions to the authorised capital of the JV will come in the form of a licence to develop the Maslovskoye Deposit held by Nornickel and a licence to develop the southern part of the Norilsk-1 Deposit and the Chernogorskoye Deposit held by Russian Platinum.

LAUNCH OF THE SULPHUR PROJECT

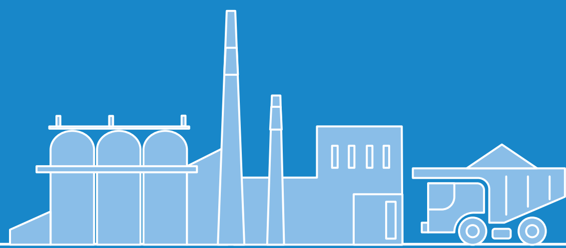
Copper Plant embarked on the Sulphur Project, Nornickel's most ambitious initiative to dramatically improve environment in the Norilsk Industrial District.

>>> *For more details on the initiative, please see*
p. 20, 23, 37, 130, 134

BASF AND NORNICKEL

Nornickel and BASF signed a long-term agreement to supply nickel and cobalt feedstock from Norilsk Nickel Harjavalta. The agreement is part of the Company's ambitious strategy to step up its exports of battery materials to the global market.

>>> *For more details on the initiative, please see* **p. 10–11, 27, 92**



UPGRADE OF AIRPORT RUNWAY

Norilsk Airport completed the runway renovation spanning three summers (2016–2018) amid the airport's continued operation. This was the initiative first of its kind both in Russia and internationally, with the project delivered on schedule and to the highest quality requirements. The new 2,821×45 m runway is fully compliant with all the certification standards. The project also saw the upgrade of two taxiways and partial repairs of the concrete pavement in the apron for civil aircraft.

>>> *For more details on the initiative, please see* **p. 97, 146–147**

START OF PRE-COMMISSIONING AT BYSTRINSKY GOK

The Company started phased hot commissioning at Bystrinsky GOK, with the first batch of copper concentrate shipped to China as early as in April. As at the year-end, the facility produced 19.4 kt of copper concentrate.

>>> *For more details on Bystrinsky project, please see* **p. 32, 84–85**

> We believe in stronger demand for our products going forward and deem it necessary to put together a portfolio of growth projects. During the next few years, we will be exploring potential development of the Southern Cluster, further expansion of Talnakh Concentrator, and the joint project with Russian Platinum to develop disseminated ore fields in the southern part of the Norilsk Industrial District.
>
> **Vladimir POTANIN**
> **President of Nornickel**

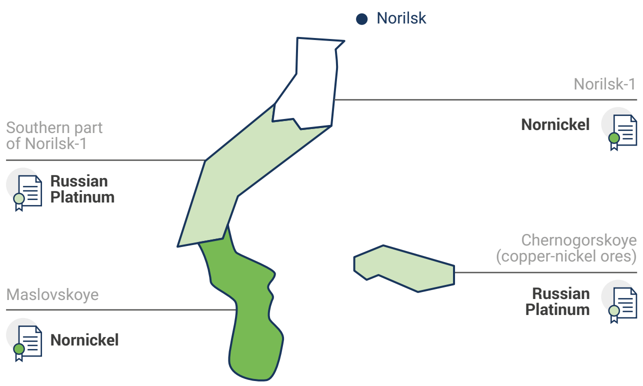
GEOGRAPHY

DEVELOPING THE REGIONS OF OPERATION

Development of the ore mining base

Arctic Palladium – JV with Russian Platinum

As part of the project, Nornickel and Russian Platinum signed a framework agreement on strategic partnership. The partners' contributions to the JV's authorised capital comes in the form of a licence to develop the Maslovskoye Deposit held by Nornickel and a licence to develop the southern part of the Norilsk-1 Deposit and the Chernogorskoye Deposit held by Russian Platinum. The three licence blocks included in the JV perimeter lie in close proximity and are highly complementary in geology and logistics.



Prospective site – developing disseminated ores in the northern part of Norilsk-1

The Southern Cluster project is set to give new life to the mature deposit. The existing infrastructure will enable the Company to start stripping as early as in 2019, with the first batch of ore to be mined in 2021–2022. At the first stage, production will be ramped up by expanding the pit (open-pit operations), and at the second stage – through underground mining. The Southern Cluster also includes secondary resources accumulated at tailings pit No. 1 since 1940s.

Specially protected areas

The Company's Polar Division is located some 80–100 km away from the buffer zone of the Putoransky Reserve (Krasnoyarsk Territory), while Kola MMC's sites are only 10–15 km away from the Pasvik and the Lapland nature reserves (Murmansk Region). Bystrinsky GOK lies 50 km away from the Relict Oaks State Reserve (Trans-Baikal Territory). They are zones untouched by human activities, with their flora and fauna living in harmony with nature. Nornickel assists the local communities and government authorities in effectively protecting and exploring these ecosystems.

Social initiatives for local communities

The World of New Opportunities, a charity programme, seeks to create propitious conditions and opportunities for sustainable development across the Company's footprint. The programme covers the Krasnoyarsk Territory (Norilsk, Taimyrsky Dolgano-Nenetsky Municipal District) and the Murmansk Region (Monchegorsk and Pechengsky District). The Company supports public initiatives and makes sure to impart new skills in social project management to local communities. The programme embraces several major initiatives, such as Academy for Social Partnership and Development, Socially Responsible Initiatives Competition, We Are the City! social technologies forum, Social Entrepreneurship training, FabLab R&D creativity laboratories, and the Arctic Wave festival of R&D discoveries.

LOGISTICS HUBS

1. Murmansk Transport Division (Murmansk)
2. Arkhangelsk Transport Division (Arkhangelsk)
3. Polar Transport Division (Dudinka)
4. Lesosibirsk Port, Yenisey River Shipping Company (Lesosibirsk)
5. Krasnoyarsk Transport Division and River Port
6. Bystrinsky Transport Division (Chita)

CORE OPERATIONS

Polar Division
- Mining
- Concentration
- Metallurgy

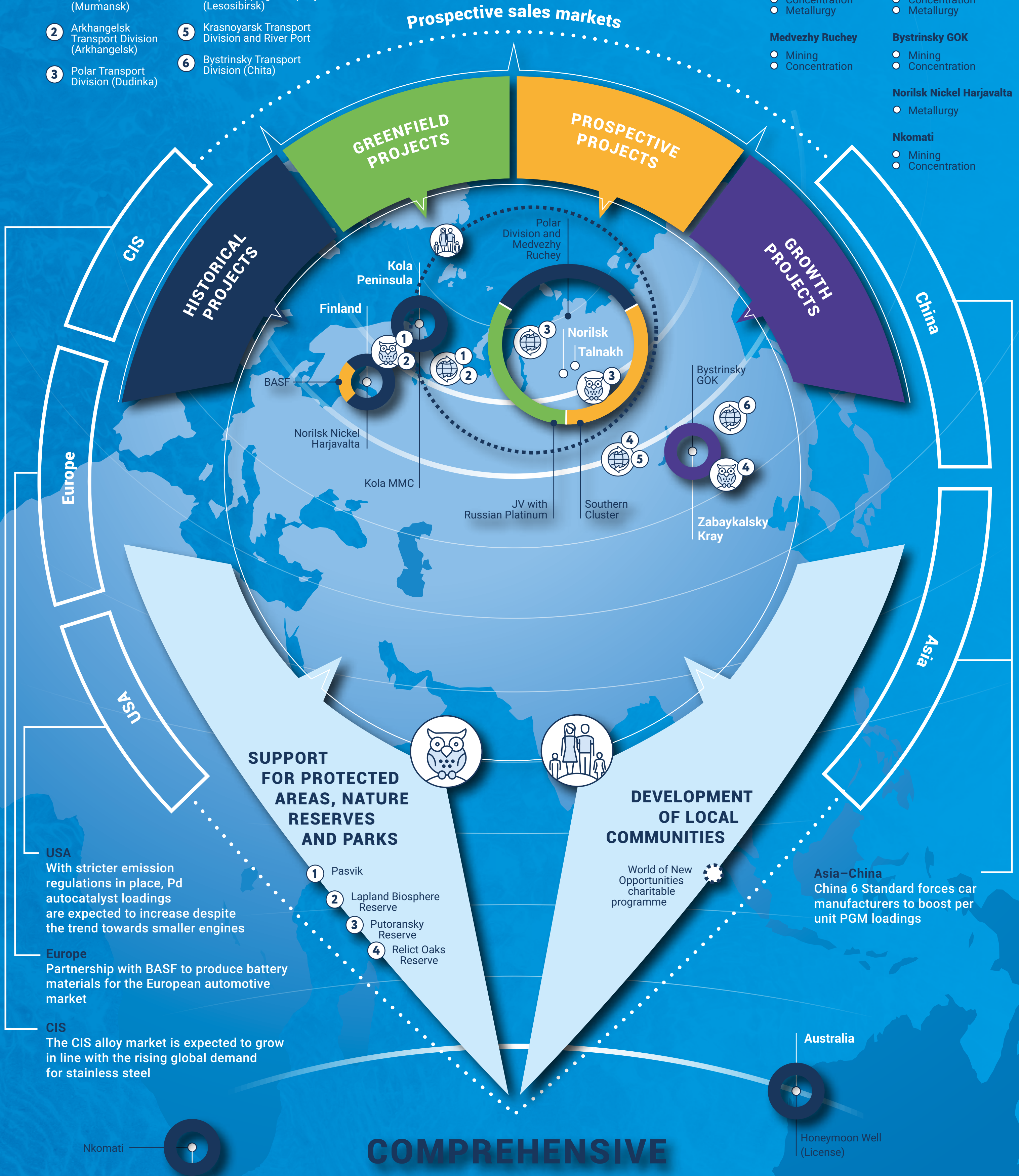
Kola MMC
- Mining
- Concentration
- Metallurgy

Medvezhy Ruchey
- Mining
- Concentration

Bystrinsky GOK
- Mining
- Concentration

Norilsk Nickel Harjavalta
- Metallurgy

Nkomati
- Mining
- Concentration

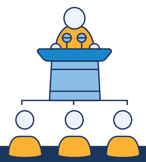


COMPREHENSIVE DEVELOPMENT ACROSS ALL GEOGRAPHIES AS THE KEY FOR ACHIEVING LONG-TERM GOALS

BUSINESS MODEL

> As a public company, Nornickel seeks to incorporate sustainability principles into its corporate governance framework. This goes beyond the pragmatics of investor appeal and shareholder confidence. Having ESG factors in mind at each stage of stakeholder value creation helps us improve efficiency of our operations and maintain our competitive edge.

Andrey BOUGROV
Senior Vice President



A well-balanced Board of Directors with an independent director as its Chairman

- Gareth Penny – Independent Director, Chairman of the Board of Directors
- Out of 13 members of the Board, 6 are independent directors
- Most of the directors on each Committee of the Board of Directors are independent

Focus on sustainable development

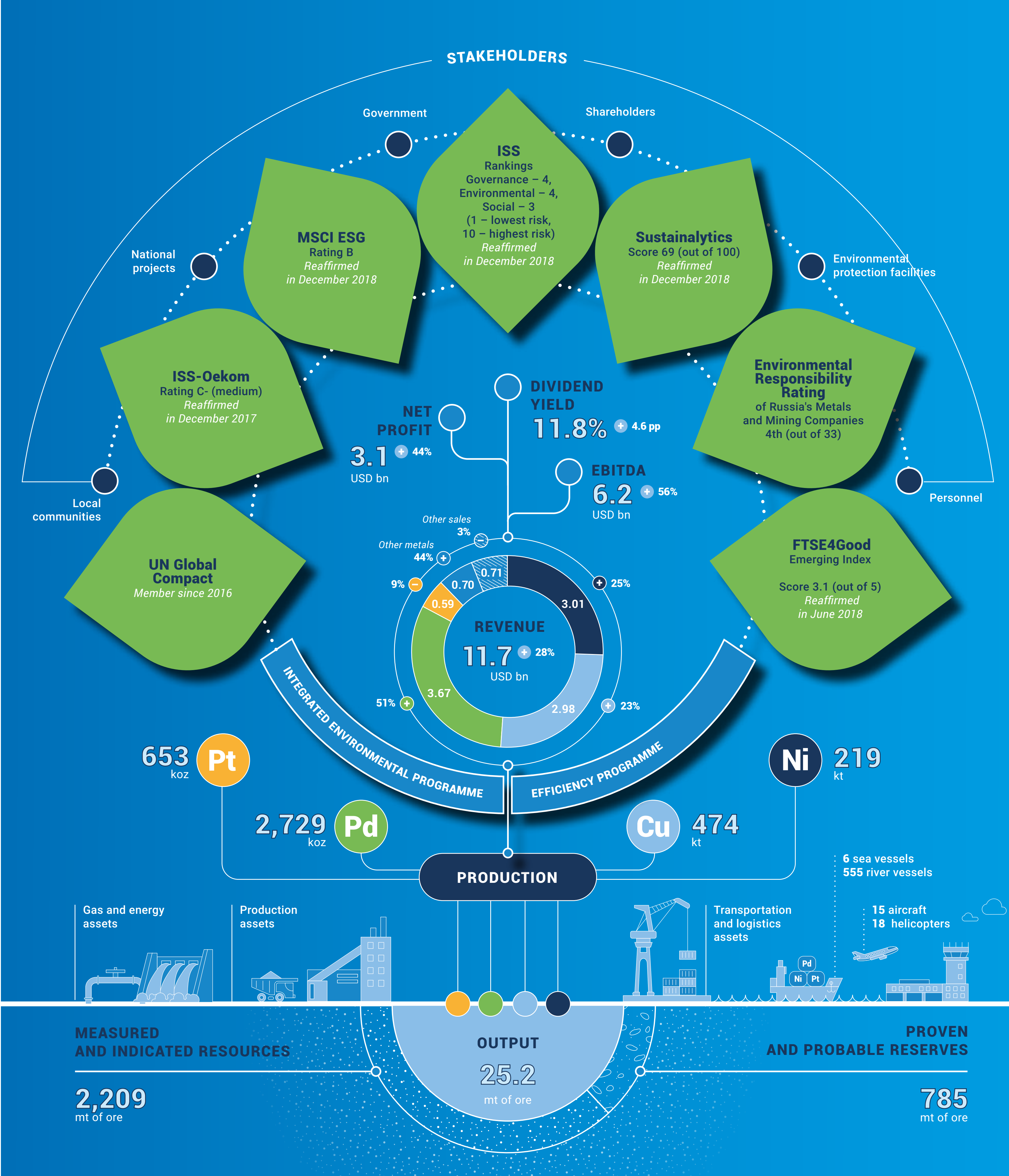
- The Audit and Sustainable Development Committee is chaired by Roger Munnings, Independent Director, member of the Budget Committee of MMC Norilsk Nickel's Board of Directors, Fellow of the Institute of Chartered Accountants in England and Wales, formerly KPMG President for Russia and CIS
- Health and safety matters, the Company's key environmental projects and social initiatives are supervised at the highest level of corporate governance

ESG-based remuneration

- ESG factors are part of the remuneration criteria for top managers
- The bonus part of the executives' remuneration is also linked to the LTIF rate, which accounts for 10–20% on their KPI cards

Improvements in efficiency of disclosure and information exchange

- A dedicated ESG Strategy section at the corporate website, with an overview of the Company's environmental, social and governance practices
- Accelerated IFRS disclosure
- Publication of Sustainability Reports based on GRI standards



SUSTAINABLE BUSINESS MODEL – STRONG CORPORATE GOVERNANCE

2

Strategy

CHAIRMAN'S LETTER

Dear Shareholders,

2018 was a very successful year for the Company. Positive dynamics of metal prices, together with robust operating performance, resulted in exceptionally strong financial results and shareholder returns.

Our revenue increased 28% to USD 11.7 billion, while EBITDA was up 56%, reaching USD 6.2 billion, the highest level achieved in the last seven years. Importantly, we delivered free cash flow of almost USD 5 billion, with an extraordinary revenue to free cash flow conversion ratio of over 40%. We decreased our working capital by over USD 1 billion and reduced our net leverage and this has allowed us to continue paying industry-leading dividends.

Sustainability of our financial performance would be impossible without our relentless focus on health, safety and environment. In 2018, we continued to take a systematic approach to identifying and eliminating unsafe practices in our workplaces. Lost-time injury frequency rate has dropped over 70% during the last five years and is running well below the industry average at the moment. We also achieved substantial progress in decreasing the number of accidents, although we are yet to meet our absolute target of a zero fatality rate across all assets.

We reiterate our commitment to radically decreasing our sulphur dioxide emissions in our smelting operations by more than four times in the Norilsk region by 2023, and by half in the northern Kola Peninsula by 2020. Last year we launched a large reconstruction project for sulphur capturing at the Copper and Nadezhda Plants. We believe that our comprehensive environmental program, costing 2.5 billion dollars over the next four years, should pay off in the long term, as the majority of investors are becoming more environmentally conscious with the increasing use of ESG metrics in their investment strategies.

It has been almost six years since I became Chairman of the Board at Nornickel, during which time the company has transformed in line with new investment and business principles, and successfully converted these into concrete actions and plans. Those actions established a solid base able to withstand volatility and deliver superior returns, even against a negative macro-economic backdrop.

At the same time, the company has been able to create additional value for its shareholders outside of the current operating perimeter and started the transition to a production growth strategy. We estimate that the commodity markets will need more of our key metals in the long-term, and our proven operational model and vast resources in the ground can respond to these growing demands.

As you may know, we are considering the expansion outside of our current footprint via new projects such as South Cluster and Arctic Palladium. The Company is capable of executing large-scale projects, not only on the back of its existing asset base, but also “from scratch”, as it demonstrated with the Bystrynsky copper project. We also see additional opportunities to create value through extending cooperation downstream in the value chain, especially within the battery materials sector. This cooperation should drive further improvements stemming from expected operational synergies. In addition, it should also support the strong, long-term balance for Class-1 nickel products and Nornickel's leading role in this rapidly growing market.

We are working to raise the bar through our digital transformation. Using a combination of existing technologies such as autonomous underground equipment, positioning systems and 3D mine planning, we are incorporating digital technology across our assets. Our goal for these digital applications – mine dispatching, metal accounting, better predictive maintenance planning, as well as the creation of an advanced data analytics centre – will enable our people to unlock their full potential through real-time, data-driven decisions.

The macro-economic situation in the world remains uncertain, but I believe that global megatrends support the future of the metals we produce. Our low-cost structure, focused on sustainable development and a disciplined approach to capital allocation, makes our Company a genuine forerunner in our industry and one of the best propositions for investors. At the same time, our belief in continuous improvement is more crucial than ever, in operations, of course, but as importantly, with regard to corporate social responsibility as well.

GARETH PETER PENNY
Chairman of the Board of Directors,
MMC Norilsk Nickel

Gareth Penny

PRESIDENT'S LETTER

Dear shareholders,

The Company ended 2018 having proudly achieved quite a few accomplishments. We successfully meet our commitments and would like to thank you for supporting the initiatives that help strengthen the Company's investment case and also promote better lives together with Nornickel.
I would like to speak about our performance for the year and share our strategic plans, which, when implemented, will contribute to the Company's sustainable development as well as enhance shareholder value.

FINANCIAL HIGHLIGHTS

The year 2018 was marked by a favourable macro environment and a strong operating performance. The markets of almost all our core commodities except for platinum posted strong price gains, cost inflation was subdued as domestic inflation in Russia was low. Nornickel increased copper and palladium sales volumes by approximately 20% as well a realized tangible results from operating cost savings due to the implementation of a long-term efficiency program, including digitalization projects. Nornickel also generated maiden EBITDA of almost USD 100 million from its newly commissioned Bystrinskoye copper project.
As result, in 2018, our top line surged 28% YoY to USD 11.7 bn, while EBITDA grew 56% to USD 6.2 bn reaching the highest level since 2011. With an EBITDA margin of 53% Nornickel became one of the most profitable global diversified mining companies in the 2018 reporting period.
As promised to our shareholders, we reduced net working capital by nearly USD 1.3 bn to less than USD 900 mln by the year-end. We consider this level quite sustainable in the medium-term.
Capital expenditure reduced to USD 1.6 bn as a number of large capital-intensive projects such as downstream reconfiguration at the Polar Division and the construction of Bystrinsky GOK were completed in 2017.
We are pleased to report that 2018 was also a record year for free cash flow which reached almost USD 5 bn. The Company's leverage returned to mid-cycle average, with net debt/EBITDA ratio falling to 1.1x. Led by Moody's in January 2018, Nornickel was assigned "investment grade" by all three major rating agencies.

OCCUPATIONAL SAFETY AND ENVIRONMENT

Occupational health and safety as well as risk mitigation are among the Nornickel's top priorities. In 2018 we continued our strident efforts to enhance occupational health and safety at our facilities. As a result, the number of workplace injuries reduced from 60 to 32, bringing the lost time injury frequency rate (LTIFR) down from 0.44 to 0.23 which is significantly below the global industry average. Unfortunately, we could not completely avoid fatal injuries, however, their total dropped from 8 to 6. We will continue to make every effort to achieve a zero fatality rate.

Nornickel reiterated its commitment to significantly improve the environmental impact in the regions of operation. Nornickel's main focus is to drastically cut sulphur dioxide emissions at the Russian sites by 2023, by a factor of four at Norilsk and by half within the city of Nikel on the border with Norway.

The completed first stage of our environmental programme has already helped reduce sulphur dioxide emissions by 11% at Polar Division and by approximately 30% on the Kola Peninsula, while emissions within Norilsk's residential area shrank by 30–35%. In September 2018, the Company announced the start of the second stage of the environmental programme and launched the upgrade of sulphur production at Copper Plant. The second stage will also centre around the construction of facilities for capturing sulphur dioxide and neutralising sulphuric acid at Nadezhda Metallurgical Plant along with the upgrade of smelting operations at Copper Plant.

SOCIAL RESPONSIBILITY

Constant improvements in the quality of life of the Company's employees and their family members is another cornerstone of our corporate strategy. Last year, we continued our programmes to provide the Nornickel's employees with housing in Russia's mild climate regions along with encouraging the World of New Opportunities public initiatives.

Our support for sports is becoming more consistent. It is not limited to the financing of occasional sports events, as Nornickel strives to develop a more comprehensive approach by investing in sports facilities, new schools, sports grounds and mass events promoting sports and healthy lifestyles.

I would also like to highlight our sponsorship of the XXIX Winter Universiade in Krasnoyarsk.

STRATEGIC PRIORITIES AND INVESTMENTS

A strong performance in 2018 and a favourable macroeconomic backdrop allow us to confidently plan and commit to continued investments in sustainable development. We have started on the second stage of our ambitious environmental programme and have launched projects to upgrade infrastructure.

At the end of last year, we announced our strategic goals for 2025+ to increase the production of non-ferrous metals by 15% and platinum group metals by 25%. This will be driven by greater mining volumes at the existing mines of the Talnakhskoye Deposit and the development of the Southern Cluster along with the third stage of Talnakh Concentrator expansion project. Investment decisions on these projects are expected to be made in late 2019.

In addition, as the largest global producer of high-grade nickel, we have every chance to take leadership as a supplier of materials for the fast-growing electric car battery manufacturing industry.

Our capital investment over the immediate four-year period from 2019 to 2022 will be USD 10.5–11.5 bn, with USD 1.3–1.5 bn to be spent on promising growth projects, such as the Southern Cluster and capacity expansion of the Talnakh Concentrator.

On a separate note, our investment programme is fully in line with the programme of Russia's strategic development, and our projects for improving the environment and digitalising the regions that host our operational footprint have already become national.

Despite the ambitious capital investment programme, we keep paying our shareholders dividends on a regular basis. We are confident that Nornickel will remain the global mining industry's leader in terms of total shareholder return and reiterate our focus on sustainable shareholder value generation by developing Nornickel's Tier I assets.

VLADIMIR POTANIN
President,
Chairman of the Management Board
MMC Norilsk Nickel

STRATEGIC PRIORITIES

> I believe that we are witnessing the beginning of a new stage in Nornickel's growth story rather than the end of the Company's successful value enhancement exercise. I am positive about this as our Company has its feet firmly on the ground thanks to its robust long-term financial model and strategy focused on value creation fundamentals and underpinned by the sustained competitiveness of the world's best Tier I assets.

Vladimir POTANIN
President of Nornickel

The Company's strategy is fully compliant with Russia's national priorities.

Nornickel leads the charge in Russia's metals and mining sector in terms of its environmental activity, green investments, social and charitable expenses, and contribution to the domestic investment growth. In 2019–2022, total investments in Russia will stand at around USD 11.5 bn. It also stands to note that some of the Company's initiatives are included in the Russian Government's list of national projects.

Focus on safety and environment
- Zero tolerance policy towards workplace fatalities
- 15% occupational injuries reduction each year
- Continued implementation of the comprehensive environmental programme

Focus on operating and financial efficiency
- 5–8% growth in metals output in the short term
- An increase in labour productivity of up to 15% (2020 vs 2017)
- Programme for digitisation and automation of production processes
- Keeping cash costs below the inflation rate

Rollout based on the current assets
- 15–25% growth in metals output in the long term (2025+)
- Production ramp-up at the unique Talnakh ore mining base
- Development of the Southern Cluster and expansion of cutting-edge concentration capacities at Talnakh Concentrator as promising growth projects
- Main stage of renewing the infrastructure and key production facilities

Analysis of new growth opportunities
- Assessment of Blue Sky – a unique partnership project wich Russian Platinum designed to bring on stream Arctic Palladium, potentially the world's largest greenfield PGM cluster
- New products

INVESTMENTS IN 2019–2022

Framework investment programme

6.5–7.5 USD bn

Mining projects	23%
Maintenance of infrastructure assets	18%
Maintenance of fixed assets	16%
Reconfiguration	6%
IT / automation / efficiency improvement initiatives	3%

Promising growth projects

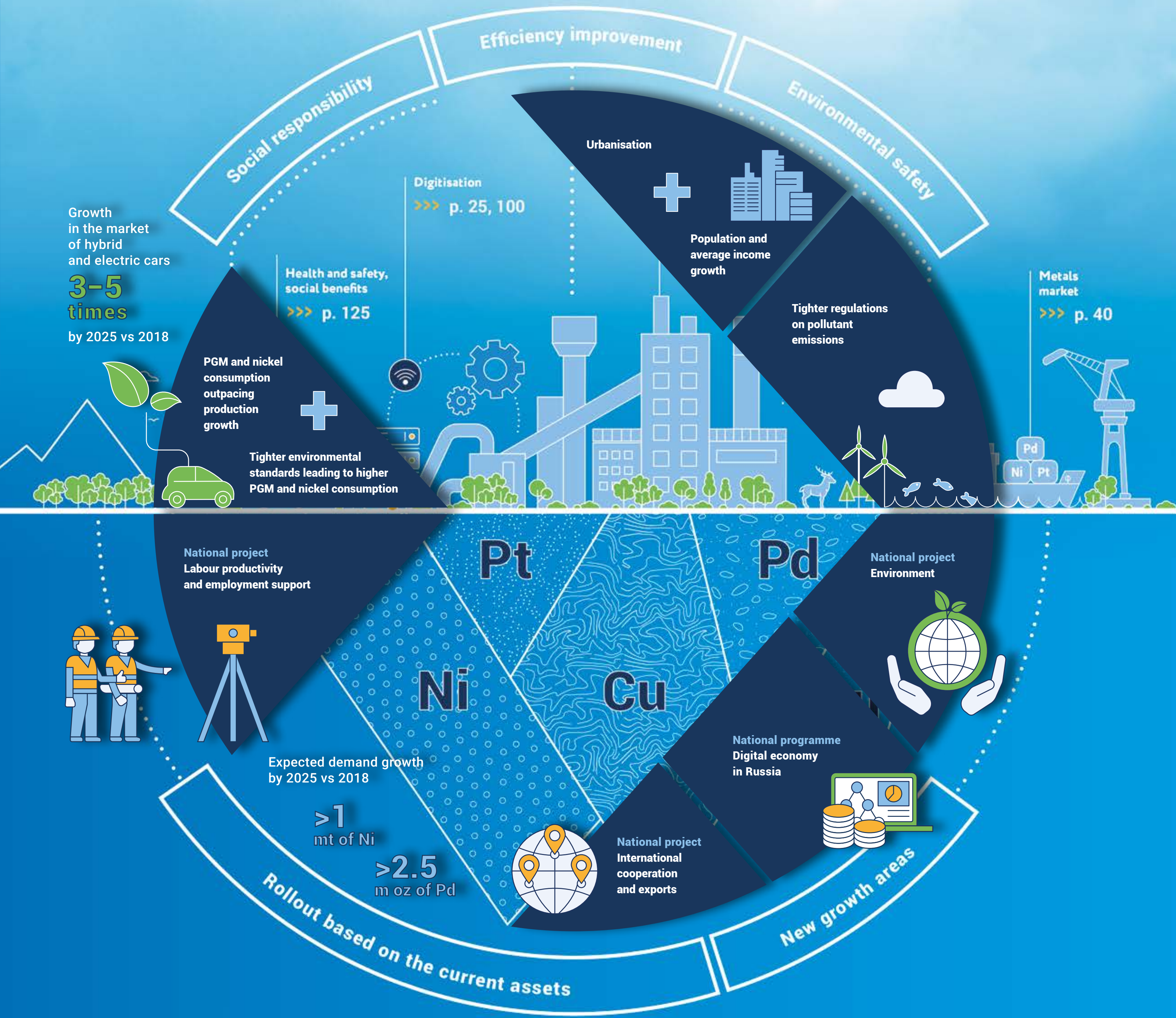
1.3–1.5 USD bn

Growth projects	12%

Sulphur Project

2.5 USD bn

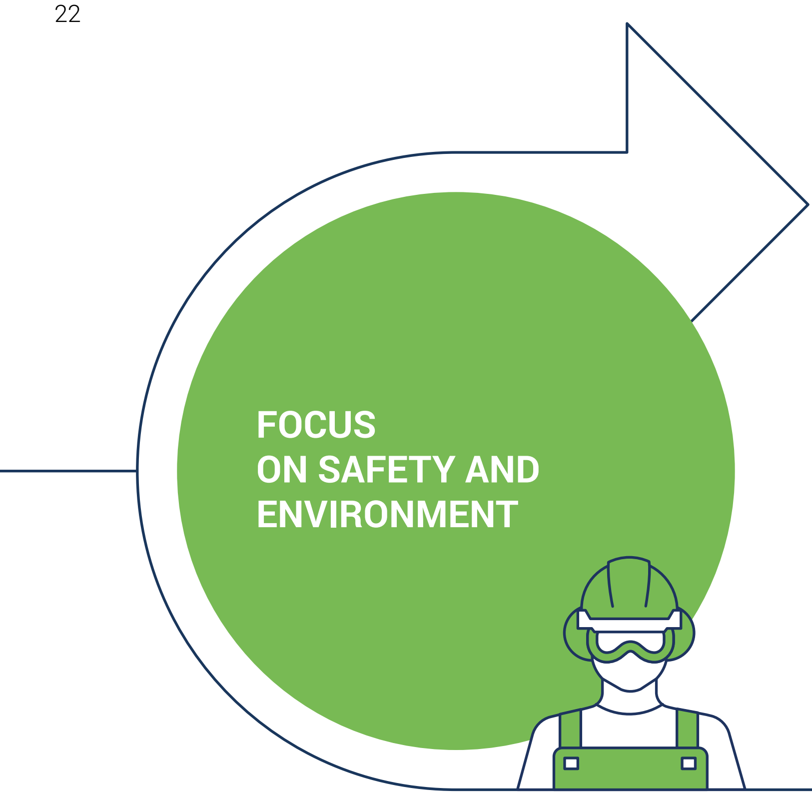
Environmental programme	22%



LONG-TERM TRENDS AS THE DRIVER BEHIND THE GROWTH

<<< Investment programme setup

More details on strategic projects >>>



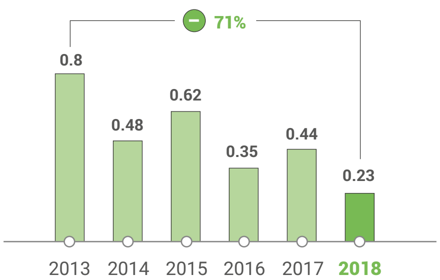
Strategic objective: development of occupational safety culture and zero tolerance policy towards workplace fatalities

LTIFR for 2013–2018
to be reduced by

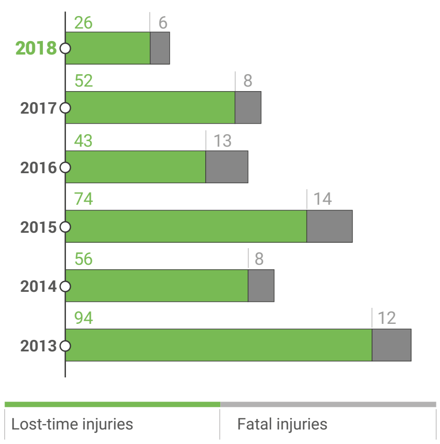
71%

SAFETY

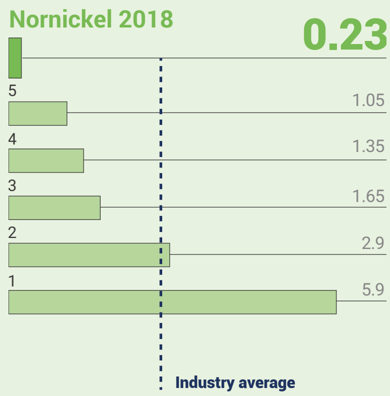
Record low LTIFR *(1*10⁻⁶)*



Reduced number of accidents *(employees)*



LTIFR *(per 1 mln hours)*



Source: *Company data, Renaissance Capital Research*

- The Company reiterates its commitment to developing a strict safety culture in all its business units
- The management sees occupational health and safety as a key strategic priority and remains focused on achieving a zero workplace fatality rate
- Improvements in this area were driven by the implementation of risk mitigation standards, safety communication for employees and dedicated risk mitigation programmes

- In 2018, the number of registered fatalities and lost-time injuries decreased by 47% y-o-y
- In 2018, saw 45 internal audits of the Company's occupational health and safety management system
- 105 employees were fired for the violation of cardinal safety rules (vs 149 in 2017)

LTIFR remains below for the global mining industry average

> The environmental national project is one of the focus areas for Nornickel. It is crucial for the Company to tackle environmental threats to successfully promote its products, improve image and encourage corporate responsibility for the quality of life in the regions of Nornickel's operations. For me, solving legacy environmental issues is of great moral and psychological significance.
>
> **Vladimir POTANIN**
> **President of Nornickel**

Strategic objective: set-up of state-of-the-art green production facilities

ENVIRONMENT

1 Implemented — **Nickel Plant shut down,** with the SO_2 emissions in the Norilsk residential area cut by 30–35%

2 In progress — **Sulphur Project**

Primary Targets

Polar Division (Taimyr Peninsula)

Copper Plant

- Reconstruct copper production chain, including the shutdown of conversion operations
- Expand and upgrade the existing sulphur production shop

Nadezhda Metallurgical Plant

- Launch a new continuous copper matte converting facility
- Implement a comprehensive SO2 capture solution including production of sulphuric acid and its subsequent neutralisation with natural limestone

Kola MMC (Kola Peninsula)

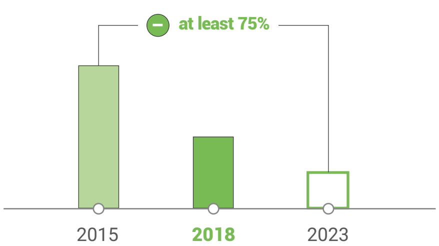
Optimise the smelting capacity utilisation rates at the Metallurgical Shop (the settlement of Nickel) by separating the concentrate produced at Kola MMC

GRK Bystrinskoye (Zabaykalsky Kray)

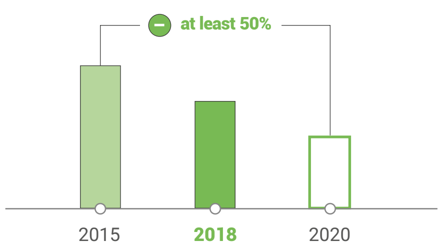
- Rolled out ongoing monitoring of the environmental and radiation conditions
- Built a modern industrial waste landfill completed with seepage water collection and treatment systems
- Equipped flue gas emission areas with cutting-edge gas purification systems

100% compliant with the Rosprirodnadzor requirements

Reduction of SO_2 emissions at Polar Division *(%)*



Reduction of SO_2 emissions at Kola MMC *(%)*



FOCUS ON OPERATING AND FINANCIAL EFFICIENCY

Strategic objective:

comprehensive efficiency improvement programme

The programme includes a package of interrelated initiatives covering the entire production chain

Target outcomes of the programme in the short term

Strict cost controls

Keeping cash costs below the inflation rate (cash costs do not include Bystrinsky GOK and Nkomati)

Increase in labour productivity (2020 vs 2017)

15%

Growth in metals output (2020 vs 2017)

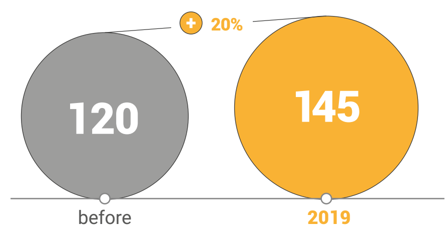
5–8%

Transformation of the corporate culture

1. **Production upgrade, introduction of new production standards and processes**
2. **Introduction of practices and tools for continuous improvement**
3. **Digital transformation of industrial and management communications**
4. **Integration of efficiency improvement KPIs into the employee incentive system**
5. **Production reconfiguration, implementation of innovative management approaches**

Implementation of a cutting-edge chlorine leaching and nickel electrowinning technology with a 20% increase in the nickel refining capacity at Tank-House 2 and higher recovery rates

Refining capacity expansion at Tank-House 2 *(kt)*



Production

Mining

- Initiatives to improve labour productivity and equipment performance
- Planning of mining operations using simulation modelling systems
- Full-scale roll-out of control systems

Concentration

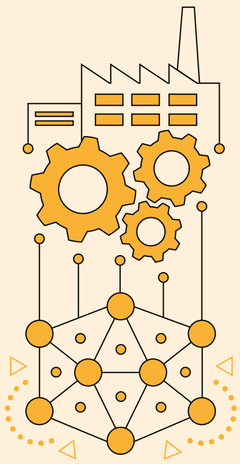
- Ensuring cost optimisation and higher recovery rates by fine-tuning the reagent mixes and modes of equipment operation
- Ore conversion ratio improvements through enhanced enrichment of pyrrhotite tailings at Talnakh Concentrator

Metallurgy

- Debottlenecking across the production chain
- Accelerated processing of additional secondary resources at Copper Plant

Digitisation

- Introduction of artificial intelligence technologies, robotisation systems, and digital twins of industrial facilities
- Putting in place a digital storage layer for all of the Company's data
- Cost optimisation and debottlenecking across the value chain



New IT platform opens up opportunities for **digitising** core operations

IT platform

Infrastructure
- 956 km long fibre optic communication line to Norilsk
- New data centres and data transfer network

Automation
- Production control
- Metal balance
- Detectors/ sensors

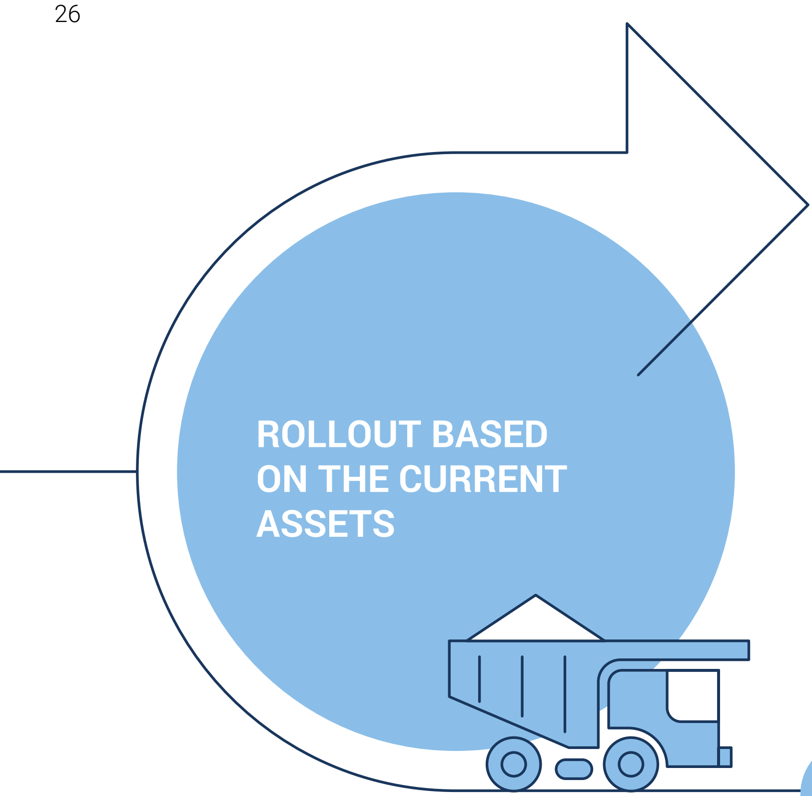
Planning and record keeping
- SAP ERP available at all sites since 1 January 2019
- 3D-modelling of mines

Data analysis
- SAP-based data analysis to improve reporting
- Repairs planning and control

The Digital Economy national project is becoming one of Nornickel's priorities.

We already have over one hundred big data initiatives in place. But we are not going to stop at that. Our ambition is to create a digital platform to disrupt the entire industry.

Vladimir POTANIN
President of Nornickel



Strategic objective:

increase metals output of the current assets by 15–25% over the next seven years.

The Company plans to unlock its potential through long-term growth based on the existing assets and underpinned by the introduction of state-of-the-art technologies, with efforts and resources invested in developing the ore mining base of the Talnakh Ore Cluster and the Southern Cluster and reaching the design capacity at Bystrinsky GOK.

In the long term, the management pins its production expansion hopes on the existing Tier 1 assets. This vision is fuelled by expectations of growth in the commodity markets, with the demand for key metals getting increasingly stronger in the long run. The Company has a robust operational model and extensive geological, technological and human resources that will allow it to successfully meet the growing market demand.

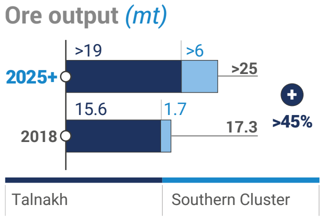
Mineral resources in the Norilsk Industrial District

Resources worth
>USD 700 bn

Resources life at current production rate
>80 years

Growth opportunities at the existing assets

Ore output *(mt)*



Expected demand growth by 2025 vs 2018

Ni	Pd
more than **1mt**	over **2.5 m oz**

Growth in metals output (2025+ vs 2017)

Ni Cu	Pd Pt
+15%	**+25%**

1

Development of the unique Talnakh ore mining base

A unique polymetallic ore mining base with more than 6000 mt of proven and probable reserves and over 1.5 bt of ore in resources.

Production at the Talnakh Cluster *(mt)*

In 2018–2022, investments in Talnakh mines development will total

~2.9 USD bn

Upgrade and expansion at Talnakh Concentrator *(subject to the approval of investment decision)*

As part of the project, the Company plans to increase the capacity at Talnakh Concentrator from 10 to 18 mtpa and introduce a new more efficient concentration technology, which will help process most of Talnakh ores at Talnakh Concentrator, benefit from economies of scale and improve metal recovery rates at the concentration facilities. Total investments will stand at about RUB 40 bn, with the project scheduled for completion in 2023.

2

Promising development projects at the Southern Cluster *(subject to the approval of investment decision)*

Southern Cluster is Nornickel's project to develop reserves in the northern part of the Norilsk-1 Deposit. With the project completion in 2027, total mining capacities are set to rise up to 9 mt. According to the preliminary estimates, investments in the development of the Southern Cluster will exceed RUB 70 bn in the span of 15 years. After reaching its target capacity, the project will yield over 20 tpa of additional PGM supplies, which puts it in the same league as the world's TOP-5 PGM producers.

Strategic objective: identification and creation of new growth areas for expanding the value creation chain.

The Company's management keeps looking for new growth opportunities.

Synergies with the Company's core business come as an important pre-requisite helping to maximize the competencies acquired during the rollout of large-scale projects in unique climatic conditions, optimise capacity utilisation rates at the existing assets and strengthen the Company's position in international markets as part of the approved marketing strategy.

> This new agreement with Russian Platinum fully fits into our strategic vision, which encourages us to share risks by developing large-scale projects jointly with partners. In addition, a joint venture of this scale will give a powerful impetus to the social and economic development of the Krasnoyarsk Territory and Russia's mining industry in general.

Vladimir POTANIN
President of Nornickel

> A strong and stable relationship with one of the largest and most tech-savvy PGM processors is an absolute priority for Nornickel.

Sergey BATEKHIN
Senior Vice President

1 Growth opportunities in the traditional segments

NORNICKEL RUSSIAN PLATINUM

Nornickel and Russian Platinum

In 2018, Nornickel and Russian Platinum signed a framework agreement on strategic partnership to set up a joint venture for developing one of the world's largest PGM deposits located in the Norilsk Industrial District.

2 Partnership opportunities in processing and sales

NORNICKEL BASF We create chemistry

Nornickel and BASF

BASF will build Europe's first site to produce battery components for the European automotive market next to Norilsk Nickel Harjavalta, Nornickel's nickel and cobalt plant. The facility is expected to come on stream at the end of 2020 with the capacity to produce BASF battery components for some 300,000 electric vehicles per year. As part of the project, Nornickel will be looking closely at potential synergies enabling it to improve production efficiency and maintain the right balance in the high-grade Ni product mix.

KEY INVESTMENT PROJECTS

MINING PROJECTS

Skalisty mine forms part of Nornickel's Polar Division and produces ore from the Talnakhskoye and Oktyabrskoye deposits. In 2018, the mine extracted 2.0 mt of rich ore.

Skalisty Mine

Location
Norilsk Industrial District, Krasnoyarsk Territory (Polar Division).

Project overview
Increasing ore production to 2.4 mtpa by 2023 by stripping rich and cupriferous ores at the Talnakhskoye and Oktyabrskoye deposits.

Highlights

Ore reserves: **57 mt**

Average metal content:
Ni – 3.1%
Cu – 3.6%
PGM – 9.7 g/t[1]

2018

- CAPEX – RUB 13.9 bn (USD 218 mln)
- Ore production reached 2 mtpa
- Sinking of ventilation shaft–10 completed (total of 2.1 km)
- 206 m sinking of skip-cage shaft–1 (total of 1.9 km out of 2.1 km)

2019

- Completion of ventilation shaft–10 construction
- Completion of skip-cage shaft–1 sinking

2023

- Reaching design capacity

Taimyrsky Mine forms part of Nornickel's Polar Division and produces ore from the Oktyabrskoye Deposit. In 2018, the mine extracted ca. 3.8 mt of rich ore.

Taimyrsky Mine

Location

Norilsk Industrial District, Krasnoyarsk Territory (Polar Division).

Project overview

Increasing ore production to 4.1 mtpa by 2021 by stripping rich copper-nickel ores at the Oktyabrskoye Deposit.

Highlights

Ore reserves: **139** mt

Average metal content:
Ni — 1.2%
Cu — 1.9%
PGM — 4.5 g/t[1]

2018

- CAPEX – RUB 4.6 bn (USD 71 mln)
- 6.1 km of underground workings completed and underground facilities upgraded

2019

- Production capacity commissioning: 130 kt of rich ore

2020

- Production capacity commissioning: 720 kt of rich ore

2021

- Reaching design capacity

1 *According to JORC standards.*

Oktyabrsky Mine forms part of Nornickel's Polar Division and produces ore from the Oktyabrskoye Deposit. In 2018, the mine extracted 5.2 mt of ore.

Oktyabrsky Mine

Location

Norilsk Industrial District, Krasnoyarsk Territory (Polar Division).

Project overview

Maintaining ore production at 5.2 mtpa until 2025 by stripping rich, disseminated and cupriferous ores at the Oktyabrskoye Deposit.

Highlights

Ore reserves: **219** mt

Average metal content: **Ni** — 0.7% **Cu** — 2.1% **PGM** — 5.9 g/t[1]

2018

- CAPEX – RUB 2.6 bn (USD 40 mln)
- 4 km of underground workings completed
- Shared drainage of Taimyrsky and Oktyabrsky mines commissioned

2019

- Production capacity commissioning: 150 kt of rich ore and 700 kt of cupriferous disseminated ore

2020–2025

- Production capacity commissioning: 300 kt of cupriferous ore

Komsomolsky Mine forms part of Nornickel's Polar Division and produces ore from the Talnakhskoye and Oktyabrskoye deposits. In 2018, the mine extracted 3.8 mt of cupriferous ore.

Komsomolsky Mine

Location

Norilsk Industrial District, Krasnoyarsk Territory (Polar Division).

Project overview

Increasing ore production to 4 mtpa by 2021 by stripping rich, cupriferous and disseminated ores at the Talnakhskoye and Oktyabrskoye deposits.

Highlights

Ore reserves: **185** mt

Average metal content:
- **Ni** — 0.6%
- **Cu** — 2.6%
- **PGM** — 4.8 g/t[1]

2018

- CAPEX – RUB 2.8 bn (USD 44 mln)
- 4 km of underground workings completed

2019

- Production capacity commissioning: 200 kt of cupriferous ore and 226 kt of disseminated ore

2020

- Production capacity commissioning: 175 kt of rich ore

2021

- Production capacity commissioning: 225 kt of rich ore and 185 kt of disseminated ore
- Reaching design capacity

[1] *According to JORC standards.*

PROCESSING PROJECTS

Bystrinsky GOK (Chita Project)

GRK Bystrinskoe (Bystrinsky GOK) is Nornickel's new project for producing copper and gold (as well as iron) concentrates. This is the largest greenfield project in the Russian mining industry, covering ore mining, concentration and shipment of end products to customers. Bystrinsky GOK is the Company's 50.01% subsidiary.

Location
Gazimuro-Zavodsky District, Chita Region, Zabaykalsky Kray.

Project overview
Open-pit mining at the Bystrinskoye Deposit, building the mining and processing plant (MPP) along with all of the associated infrastructure, including a power line, a 227 km Borzya – Gazimursky Zavod rail line, and a camp.

Construction of the open-pit mine and the MPP started in 2013. In 2017, the 220 kV power line were commissioned and a camp for 1,047 people was built. Hot commissioning of the MPP started in October 2017, with the project expected to reach its design capacity by 2021.

Highlights

Ore reserves:
326 mt

Average content:
Cu — 0.7%
Fe_3O_4 (magnetite) — 23%
Au — 0.9 g/t[1]

New jobs:
~2 thousand people

[1] *According to the Russian classification ($A+B+C_1+C_2$).*

2018

- CAPEX – RUB 10.7 bln (USD 168 mln)
- 7.9 mt of ore mined, 19.4 kt of copper concentrate, 3 t of gold concentrate and 0.4 mt of magnetite concentrate produced. EBITDA – USD 96 mln

2019

- Increasing ore production to 8.0 mtpa, producing 40–46 kt of copper concentrate, 6.0–6.5 t of gold concentrate and 1.3–1.4 mt of magnetite concentrate.

2020

- The MPP's reaching design capacity with the following annual concentrate volumes:
  Cu — 65–70 kt;
  Au — 8.5–9.0 t;
  Fe_3O_4 (Fe — 66%) — 1.9–2.1 mt

Upgrade of Talnakh Concentrator

Talnakh Concentrator is part of the Company's Polar Division. It processes rich, cupriferous and disseminated ores from the Oktyabrskoye and Talnakhskoye deposits to produce nickel-pyrrhotite and copper concentrates. In 2018, the plant processed 10.4 mt of ore, with nickel recovery in bulk concentrate reaching 83.2% (+1.5% y-o-y).

Location

Norilsk Industrial District, Krasnoyarsk Territory (Polar Division).

Project overview

Ramping up capacity and implementing a more efficient concentration technology.

The upgrade is rolling out in three stages. Stage 1 included reconstructing existing floatation capacities and replacing flotation cells that were beyond their useful lives in order to maintain the concentration capacity at 7.5 mtpa (completed in 2015). Stage 2 involved the expansion of the main building, reconstruction of the reagent preparation building, and construction of two ball mills 300 cubic metres each and five vertical mills, all of which helped to boost capacity to 10.2 mtpa. This stage also included the building of the first phase of the tailings pit. The project was completed in 2018. Plans for Talnakh Concentrator–3 include capacity ramp-up and implementation of a more efficient concentration technology.

Key Stage 3 parameters

CAPEX:

RUB **40** bn (USD 0.6 bn)

Ramping up capacity:

from **10** mtpa to **18** mtpa

Building **the second phase of the tailings pit**

Commissioning planned for

2023

2018

- CAPEX – RUB 0.8 bn (USD 12 mln)
- Construction site inspection and preparatory work completed
- Design documentation developed

2019

- Obtain the State Expert Review Board's approval

2020–2022

- Construction and installation works, equipment delivery, pre-commissioning

Development of the South Cluster

The South Cluster is comprised of the Norilsk Concentrator (processing capacity of 9.3 mtpa), the northern part of the Norilsk-1 Deposit that is developed by Zapolyarny Mine through open-pit (Zapolyarny open pit) and underground (Zapolyarnaya mine) mining, as well as tailings pit No. 1 and Lebyazhye tailing pit. Norilsk Concentrator processes all disseminated ores from Zapolyarny Mine and cupriferous and disseminated ores from the Oktyabrskoye and Talnakhskoye deposits. In 2018, the plant processed 6.8 mt of ore, with nickel recovery in bulk concentrate reaching 71.9% (+0.2% y-o-y). Zapolyarny Mine produced 1.7 mt of disseminated ore. In 2017, Nornickel established Medvezhy Ruchey, a subsidiary that operates the assets of the Sourthern Cluster.

Location

Norilsk Industrial District, Krasnoyarsk Territory (Medvezhy Ruchey).

Project overview

As part of the Sourth Cluster project, ore production will be ramped up to 9 ktpa. This will be done in two stages: first, by expanding the pit (open-pit operations), and then – through underground mining.

Highlights

Project CAPEX until 2022 RUB **45** bn (USD 0.7 bn)

The project is expected to reach its design capacity starting **2027**

Ore reserves: **165** mt

Average content:
- **Ni** — 0.2%
- **Cu** — 0.3%
- **PGM** — 3.9 g/t[1]

2018
- Feasibility study for further project development completed

2019
- Stripping works
- Completion of design documentation drafting

2021–2022
- Ore production launch

[1] *According to the Medvezhy Ruchey Mine development project.*

Tank-House refurbishment

Tank-House 2 produces cathode nickel as part of Kola MMC's Severonickel Plant, and together with Tank-House 1 made 147 kt of the product in 2018.

Location
Severonickel Plant, Monchegorsk, Murmansk Region (Kola MMC).

Project overview
Tank-House 2 is expected to boost capacity from 120 mtpa to 145 mtpa thanks to upgraded technology and higher recovery.

Tank-House 2 is introducing the technology of nickel electrowinning from chlorine dissolved tube furnace nickel powder, which will help achieve the highest purity of metal.

Highlights

Increasing Tank-House 2 capacity	Increasing nickel recovery from converter matte
from **120** ktpa to **145** ktpa of nickel	by **1%**

2018

- CAPEX – RUB 10.8 bn (USD 169 mln)
- Gradual capacity commissioning completed, progress – 82%

2019

- Reaching the design capacity and performance targets

Construction of a concentrate shipment facility and separating section at Kola MMC

The project will involve the upgrade of Kola MMC's Concentrator and construction of a concentrate shipment facility. Located in Zapolyarny, the Concentrator produces briquetted copper-nickel concentrate. In 2018, it processed 7.9 mt of ore.

Location
Zapolyarny, Murmansk Region (Kola MMC).

Project overview
Construction of an additional floatation section at the Concentrator for separating high grade and low grade concentrate, and a concentrate shipment facility with the capacity of 200 kt of dry concentrate. The new arrangement will see low grade concentrate shipped to third parties, while high grade concentrate will be sent for further processing at the Smelting Shop in Nickel.

Highlights

Project CAPEX:

RUB **4.9** bn (USD 85 mln)

Project completion and launch of finished concentrate production slated

for **2019**

2018

- CAPEX – RUB 1.1 bn (USD 17 mln)
- Construction of the concentrate shipment facility: Outotec has designed basic engineering and signed a contract for equipment supplies
- Thickeners dismantled and utility systems relocated, construction and installation works started on the shipment facility

2019

- Obtain the State Expert Review Board's approval
- Completion of all construction and installation works
- Launch of finished concentrate production and and plant pre-commissioning

ENVIRONMENTAL PROJECT

Sulphur Project at Polar Division

This is a large-scale environmental project designed to achieve a reduction in sulphur dioxide emissions by Nadezhda Metallurgical Plant and Copper Plant (both part of the Company's Polar Division) to the maximum permissible rates.

Highlights

Project CAPEX: up to USD **2.5** bn

Project completion is scheduled for **2022**

Location
Norilsk Industrial District, Krasnoyarsk Territory (Polar Division).

Project overview
Achieving a 75% decrease in sulphur dioxide emissions in the Norilsk Industrial District by 2023.

Nadezhda Metallurgical Plant will have new facilities for disposing of sulphur-rich gases, while Copper Plant will see an upgrade of its capacities that capture sulphur dioxide and produce elemental sulphur. In addition, some of Copper Plant's most polluting facilities that emit off-gas that is hard to capture will be shut down due to their proximity to the residential area. Concurrently, a number of infrastructure projects will be implemented to supply the new facilities with all the necessary materials and power.

2018

- CAPEX – RUB 2.3 bn (USD 36 mln)
- Construction site preparation at Copper Plant

2019

- Finishing the preparation of engineering documents, obtaining regulatory approvals
- Launch of construction and installation operations

2020–2022

- Main phase: manufacturing and delivery of equipment, construction and installation operations, pre-commissioning

3

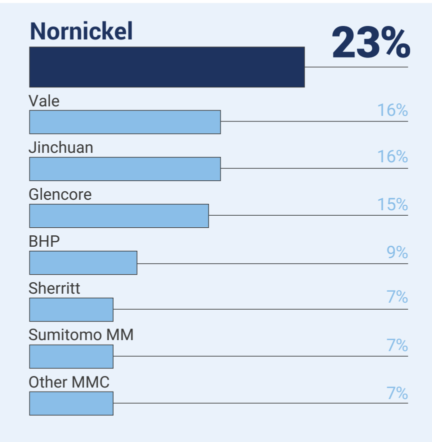
Markets commodity


НОРИЛЬСКИЙ НИКЕЛЬ

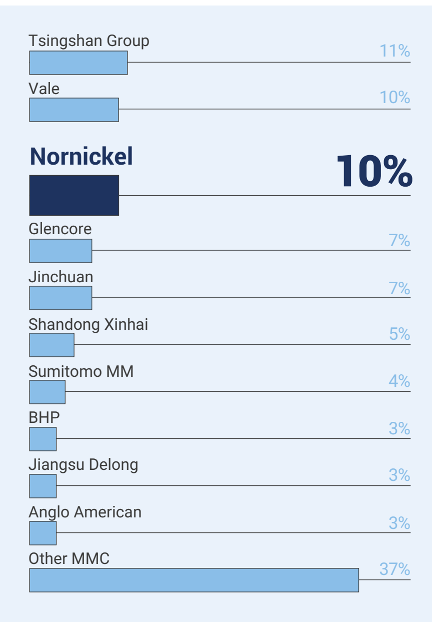
NICKEL

Ni

No. 1 in high grade nickel production



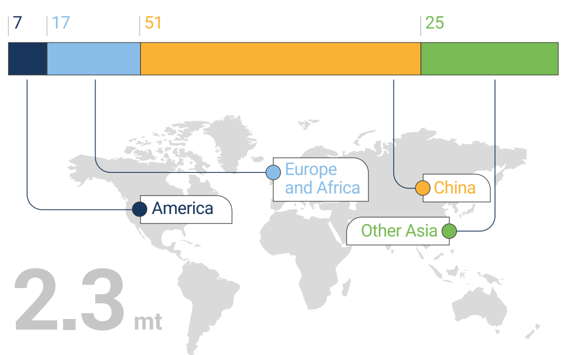
No. 3 in primary nickel production



Key trends in the nickel market

In 2018, the nickel deficit grew on the back of higher demand (primarily for stainless steel production in Indonesia and cathode materials for lithium-ion batteries) and slower production growth. Increased output of NPI, ferronickel, nickel sulphate, and other salts could not offset the deficit stemming from the decline in nickel metal and powder production.

Primary nickel consumption by region *(%)*

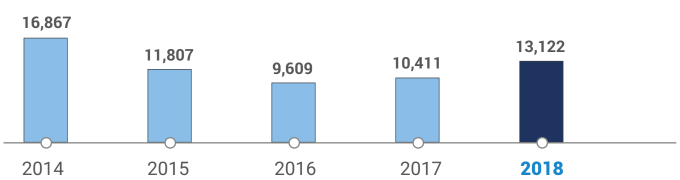


Outlook: cautiously optimistic. In 2019, the market deficit may go down to 50 kt as a result of significant increase in NPI production in Indonesia and China.

Source: *Company data*

An expected boom in the electric cars' sector and major outflows from the London Metal Exchange (LME)'s stocks triggered by the increased demand contributed to higher nickel prices in late 2017 through June 2018. In the second half of 2018, the escalating US-China trade war reversed the trend, and in October 2018, market concerns over a potential construction of large-scale lateritic nickel ore leaching facilities in Indonesia pushed the prices further down.

Average annual nickel price *(USD/t)*



In 2018, the average nickel price grew by

26%

Source: *LME (settlement)*

Nickel price and keyindustry developments in 2018 *(USD/t)*

1 Rise in the US Federal Reserve interest rate

2 The Company's announcement of planned delisting of Polar Division's cathodes on LME starting 18 April erroneously interpreted as new sanctions against Russian products introduced together with RUSAL sanctions

3 The US considering import duties on Chinese imports worth USD 50 bn

4 Consistent decline in the LME stocks, higher stainless steel production and expected electric car boom

5 Rise in the US Federal Reserve interest rate

6 The US announcing import duties on Chinese goods worth USD 50 bn

7 The US announcing import duties on Chinese goods worth USD 200 bn

8 Rise in the US Federal Reserve interest rate

9 Announcement of planned construction of large-scale lateritic nickel ore leaching facilities in Indonesia for battery components

10 Rise in the US Federal Reserve interest rate

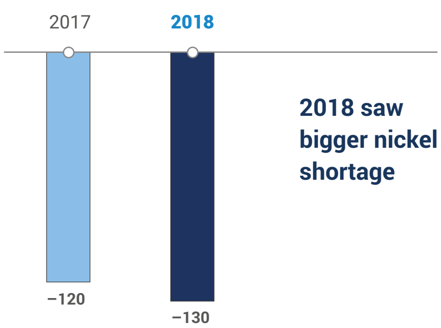
Source: *LME, Company data*

Market balance

In 2018, nickel shortage went up to 130 kt mainly driven by a 7%, or 159 kt y-o-y increase in metal consumption largely attributable to the Asian producers of stainless steel and batteries. At the same time, primary nickel production grew by 7%, or 148 kt. Only nickel production from lateritic ore was on the rise: in 2018, low grade nickel production increased by 16%, or around 170 kt y-o-y, mainly due to the Chinese and Indonesian NPI output growth. High grade nickel production decreased by 2%, or 22 kt, largely on the back of production cutbacks in Canada.

During the year, total LME and SHFE stocks decreased by 191 kt (47%) to 219 kt, which is about 4.5 weeks of global consumption.

Primary nickel production – consumption balance *(kt)*



Source: *Company data*

Consumption

Nickel consumption is predominantly driven by the stainless steel industry (over 70% in 2018). Stainless steel comes to the market in various grades from all over the world, whereas its smelting structure ultimately determines the primary nickel consumption patterns. **Austenitic stainless steel** comprising the 200 series and 300 series steel is the most widespread type of that product (over three quarters of the global production). The 300 series steel has a higher nickel content (normally 8–12%, or up to 20% in a number of select grades). Nickel added in this proportion improves the steel's corrosion resistance and robustness in a wide range of temperature conditions, boosts its ductility and durability in aggressive environments, and enhances its non-magnetic properties. This series enjoys the highest demand, as it is applied in various industries, including construction, food and chemicals manufacturing, transportation, energy, etc. The 200 series steel cannot serve as a full substitute for the high nickel content grades, as it has a lower nickel content due to the addition of manganese. The 200 series steels are susceptible to surface (pitting) corrosion and non-resistant to heat and aggressive environments. Due to the lower price, this steel grade is often used in the production of consumer goods, such as home appliances. China and India account for over 90% of the total 200 series steel output.

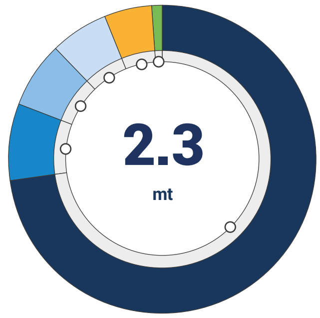
Austenitic-ferritic (duplex) stainless steels also use nickel and are characterised by a higher content of chromium (18–25%) and molybdenum (1–4%), but they account only for 1–2% of the global smelting output.

Ferritic and martensite stainless steels (400 series) usually do not contain nickel, while their properties are similar to those of low-carbon and highly corrosion-resistant steels. However, their mechanical properties are inferior to those of austenitic stainless steels. These steels are mainly used to manufacture automotive exhaust systems, cargo container frames, water heaters, washing machines, utensils and cutlery, kitchenware, home decor items and razor blades.

In 2018, the total stainless steel output increased by 5% and hit a record high of 50.3 mt. The growth was driven by a rise in 300 series steel production to over 2 mt at the Indonesian facility launched in mid-2017, one of the largest stainless steel facilities globally. Indonesia is a new steel market player with a robust growth outlook. The country has sufficient reserves of high grade lateritic ore, growing NPI capacities and, hence, low cash cost of austenitic stainless steel.

Over 50% of Indonesian stainless steel exports from January to October 2018 headed to China, primarily in form of slabs and hot-rolled steel. Growing imports had a negative impact on China's 300 series

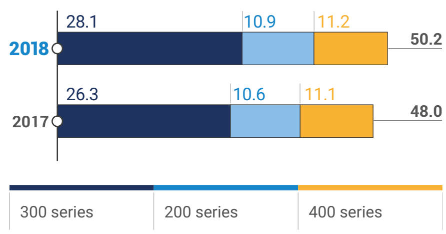
Primary nickel consumption in 2018 by industry *(%)*



	%	mt
Stainless steel	73	1,681
Alloys	8	194
Special steels	7	153
Electroplating	6	147
Batteries	5	124
Other industries	1	14

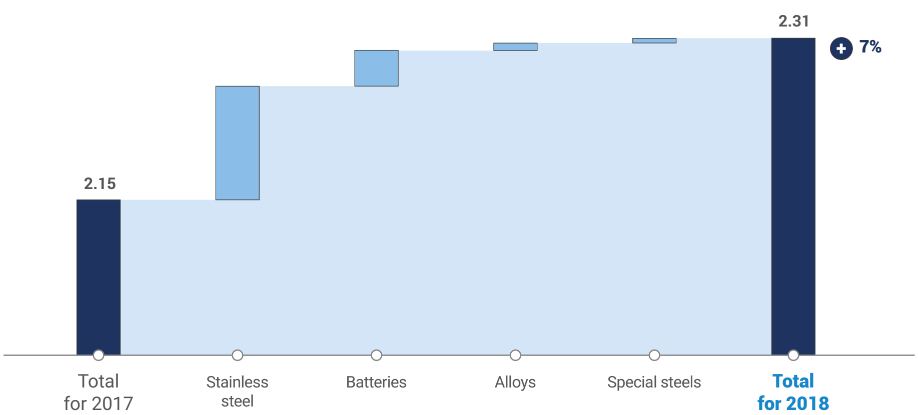
Source: *Company data*

Stainless steel production by grade series in 2017–2018 *(mt)*



Source: *Company data*

Primary nickel consumption in 2018 *(mt)*



stainless steel output, where it stayed flat according to our estimates.

Taiwan, the second largest importer of Indonesian stainless steel, also reported a 15% drop in domestic production. With that, the primary nickel consumption went down by only 8 kt because of the historically high use of scrap in the country. Other regions saw consistent 2–4% growth of austenitic stainless steel production.

Consumption of primary nickel by the global stainless steel producers rose by 7% to 1.68 mt as a result of an increase in the global 300 series and 200 series output by 7% and 4%, respectively, and a slight decrease in the average share of scrap. However, the use of high grade nickel in stainless steel smelting went down by 60 kt mostly due to the growing availability of low grade nickel.

Nearly all types of nickel feedstock are used in stainless steel production (except for a number of specific products, including nickel powder and compounds). Since the quality of nickel barely affects the quality of conventional stainless steel grades, the manufacturers opt for the cheapest nickel feedstock, turning to high grade nickel as their last resort. This is the reason why high grade nickel share has been declining in the structure of nickel units consumed in stainless steel production in recent years.

The battery industry uses nickel as a major component of the active cathodes for battery cells. The extent of nickel utilisation depends on the battery type.

Lithium-ion batteries (Li-Ion). Li-Ion batteries were first commercially released in 1991 and became fairly widespread in most areas due to their high energy capacity retained after multiple recharge cycles.

Nickel-metal hydride batteries (Ni-MH). Ni-MH batteries were developed in 1989 as a substitute for Ni-Cd batteries to avoid using cadmium. Currently, though, the nickel-metal hydride battery market is growing at a slow pace (with hybrid vehicles being its only growth driver) and faces considerable competition from the lithium-ion batteries.

Nickel-cadmium batteries (Ni-Cd). The first nickel-cadmium batteries were developed in 1899. Currently, their use is restricted, since cadmium is prohibited as a toxic substance under the EU ban.

The key driver behind Li-Ion battery growth is electric vehicles gaining ground.

In 2014–2018, CAGR of electric cars (plug-in HEVs and battery electric cars) has been around 46%. The key factors driving electrification of the transport system are incentives offered by the state, more stringent environmental controls, and improved technical specifications of batteries.

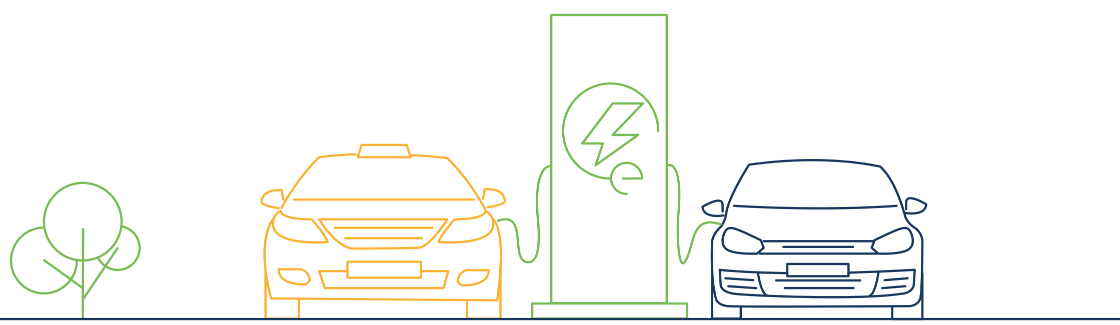
The electric car market growth is led by China. By 2020, it plans to increase the NEV (electric cars and plug-in HEVs) sales to 2 mln, and by 2025 – up to 7 mln vehicles. The Chinese government has implemented a number of initiatives to stimulate transport electrification, including subsidies for buying electric cars and mandatory requirements for large automakers regarding the production of electric cars and plug-in HEVs. In large cities and regions, the trend is supported by local initiatives.

Buyers of electric cars in a number of other countries, including Belgium, Germany, the UK and France, enjoy considerable subsidies and fiscal incentives. For instance, Norway (where electric cars account for 30% of all sales) grants tax exemptions (one-off registration tax and VAT) to buyers. Also, annual electric car tax is six times lower than that for a car powered by an internal combustion engine.

The key driver behind Li-Ion battery growth is **electric vehicles gaining ground**

~46%

CAGR of electric cars (plug-in HEVs and battery electric cars) in 2014–2018



USD 100 bn

of investments in electric cars earmarked by automakers

5%

growth of primary nickel consumption for alloys

The investments in electric cars earmarked by automakers already amount up to USD 100 bn.

There are several types of lithium-ion batteries depending on the cathode materials: LCO (lithium, cobalt oxide), LFP (lithium, iron, phosphate), LMO (lithium, manganese oxide), NCM (nickel, cobalt, manganese), NCA (nickel, cobalt, aluminium).

LCO is primarily used in portable electronic devices, but given high cobalt price coupled with unstable chemical compounds and low energy capacity, LCO is not applied in electric vehicles. However, other types of cathodes are widely used in the industry. LFP and LMO tend to be replaced with other cathode materials containing nickel as a result of a higher gravimetric and volumetric capacity of NCM and NCA, which helps to increase mileage.

The share of NCM and NCA in the total cathode material output used in Li-Ion batteries (excluding LCO) went up from 32% in 2012 to 78% in 2018.

Growing nickel consumption in Li-Ion batteries comes not only on the back of increasing share of nickel-containing types, but also higher average nickel content in the cathode material triggered by the need to substitute expensive cobalt units. While in 2016 NCM 1:1:1 (with nickel mass fraction of 20%) accounted for the lion share of nickel-magnesium compounds of the cathode material, in 2018 nickel-intensive compounds – NCM 6:2:2 (with nickel mass fraction of 36%) and NCM 5:3:2 (30%) took the lead. Going forward, batteries are expected to switch to NCM 8:1:1 (with the nickel mass fraction of 48%), and some producers announce plans to launch commercial production of LNO, a cathode material with nickel content of over 50%.

Further development of the automotive industry, the growing popularity of electric and hybrid cars, along with the evolution of the cathode technology towards nickel-intensive types lay the groundwork for major expansion of primary nickel consumption in this industry in the long run.

In 2018, the growth of primary nickel consumption for alloys stood at 5%, primarily driven by high demand from the aerospace industry. Heat-resistant alloys with high nickel content are among the key materials for aircraft engines. The order backlog of the major passenger aircraft producers is estimated at 7–10 years, and will support the nickel demand from the industry.

Importantly, the demand for nickel alloys from the oil and gas industry has recovered on the back of the oil price growth in the first half of 2018. Nickel is widely used in decorative and protective platings with their thickness ranging from 1 to 100 microns. Nickel electroplating is highly corrosion-resistant, hard and pleasing aesthetically. It is used for corrosion protection, and as an alternative to chromium plating. In recent years, China has been the leading manufacturer of nickel electroplating products. Since 2012, though, the electroplating industry has started to develop in other Asian countries, and the Chinese businesses are now transferring their production to achieve cost savings.

Production

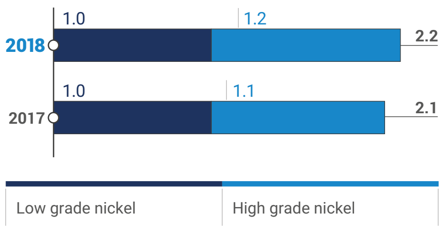
Primary nickel can be split into two major groups:

High grade nickel (cathodes, briquettes, carbonyl nickel and compounds) is produced from both sulphide and lateritic nickel ore. In 2018, the major high grade nickel producers included Nornickel, Jinchuan, Vale, Glencore, Sumitomo Metal Mining and BHP Billiton.

Low grade nickel (ferronickel, NPI and nickel oxide) is only produced from lateritic ore. In 2018, the major low grade nickel producers included Chinese and Indonesian NPI companies and also ferronickel producers: Eramet, Anglo American, South 32, Pamco and Posco (SNNC).

In 2018, primary nickel production grew by 7%, or 148 kt y-o-y, driven only by an increase in low grade nickel output (ferronickel and NPI). Compared to 2017, the low grade nickel production grew by 16%, or 170 kt.

Primary nickel production in 2017–2018 *(mt)*



Source: *Company data*

In 2018, high grade nickel output dropped by 2%, primarily driven by the following factors:

- discontinued nickel cathode production in Canada;
- reconfiguration of key players' production assets, including the upgrade of the Company's refining facilities;
- lower nickel briquette output on Madagascar due to hurricanes and in Canada on the back of shortages in Cuban feedstock supplies caused by heavy rains.

148 kt

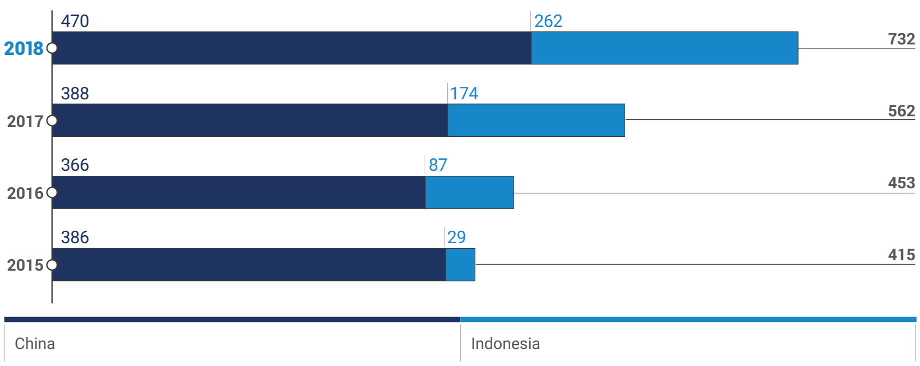
of primary nickel production growth in 2018

This was coupled with greater output of nickel sulphate that serves as a key feedstock for the precursors of the cathode material in Li-Ion batteries. Apart from the integrated production of nickel sulphate through matte, the key sources of feedstock for nickel sulphate are the hydrometallurgy semi-products and crude nickel sulphate, a by-product of copper and PMG production. The shortage of primary feedstock for nickel sulphate production entailed higher demand for nickel briquettes and powders as well as scrap batteries in 2018.

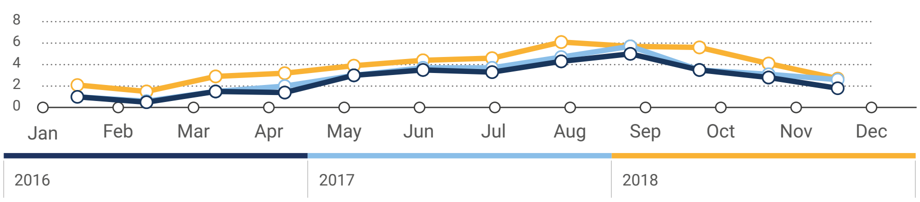
The growth in low grade nickel production was significantly above the decline in high grade nickel production. The global low grade nickel output growth in 2018 amounted to 16% as a result of increased NPI production in China and Indonesia and ferronickel production in all key regions except Europe, where a number of manufacturers had to cut output.

The key driver behind NPI production growth was the lifting of the ban on exports of unprocessed nickel ore from Indonesia in March 2017 contributing to the availability of rich nickel ore. China's total ore imports in 2018 grew by 34% and amounted to 47 mln wet tonnes, boosting the national NPI output growth by 21%, to 470 kt.

NPI production in 2015–2018 *(kt)*



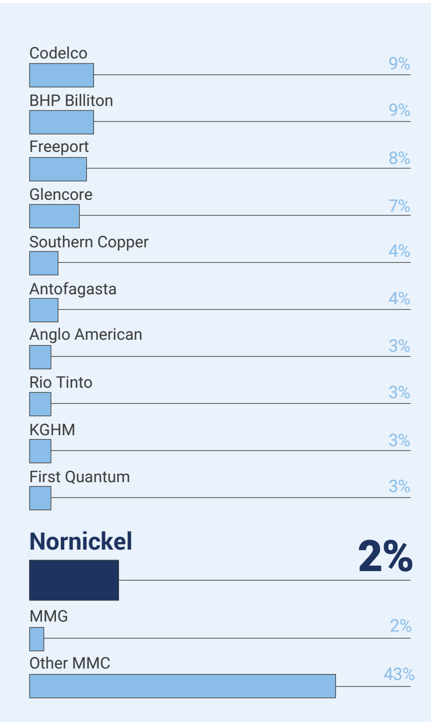
Nickel ore and concentrate imports to China in 2016–2018 *(mt)*



COPPER

Cu

No. 11 by copper mining in 2018

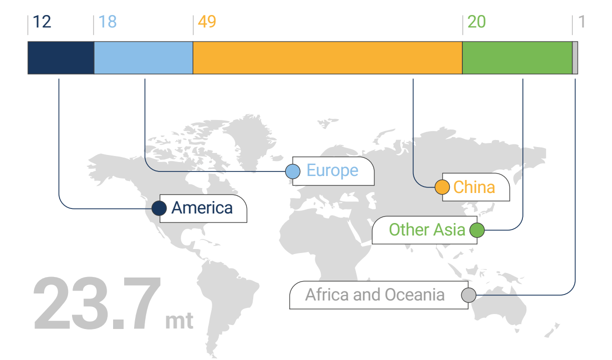


Key trends in the copper market

2018

The prices surged in the first half of the year amid expectations of strikes at copper mines in Chile and Peru with a strong copper demand from EV manufacturers and then plunged in the second half of the year on the back of failed strikes and an escalation of the US-China trade tensions causing concerns over weaker demand.

Refined copper consumption by region *(%)*



Outlook: neutral. In the mid-term, the market will remain balanced; the success of the US-China trade talks and continued global copper demand may support copper prices.

Source: *Company data*

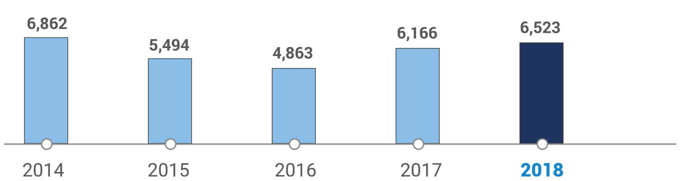
A slight decline in copper prices in the first quarter of 2018 as a result of lower imports in China and higher metal exchange inventories reversed in the second quarter, peaking at USD 7,300 per tonne, the highest over the last 4.5 years. The price growth was triggered by expectations of a deficit in the copper market in 2018 due to looming strikes at mines in Chile and Peru due to negotiations with trade unions on new labour agreements, amid lower copper exchange inventories.

In the second half of June, investor concerns over a possible slowdown in the global economic growth resulting from a risk of a trade war between the USA and the European Union and China led to a drop in copper prices, sinking to the year's minimum of USD 5,823 per tonne by early September.

In the fourth quarter of 2018, prices stabilised in the range of USD 6,070 and USD 6,330 per tonne due to the demand and supply balance. However, in December, the pessimism of market players about the US-China trade tensions surged again. In addition, Chile and Peru saw a successful signing of labour agreements. These were the reasons behind a decline in copper prices to USD 5,965 per tonne at the end of the year.

In 2018, the average LME copper price increased by 6% y-o-y to USD 6,523 per tonne vs USD 6,166 per tonne in 2017.

Average annual copper prices *(USD/t)*



Source: *LME (settlement)*

LME copper prices in 2018 *(USD/t)*

1 › BHP Billiton report posting production growth

2 › Copper import growth in China following scrap import restrictions

3 › Success in negotiations on the Grasberg mine sale to the government of Indonesia

4 › Signing of labour agreements at several mines in Chile and Peru

5 › Substantial growth in exchange inventories

6 › Threat of strikes at the Escondida and Chuquicamata mines

7 › Report posting production growth in Chile

8 › Increase in Chinese copper concentrate and cathode imports

9 › Successful signing of labour agreements at the Escondida mine

10 › Rise in the US Federal Reserve interest rate

11 › Introduction of US import duties on Chinese imports worth USD 50 bn

12 › Signing of a new permit for the concentrates export from Indonesia

13 › BHP Billiton and Rio Tinto reports posting production growth

14 › Short strike at the Chuquicamata mine

15 › Introduction of US import duties on Chinese imports worth USD 200 bn

16 › Strike at Andina mine (Chile)

17 › Research group reports on tightening market deficit

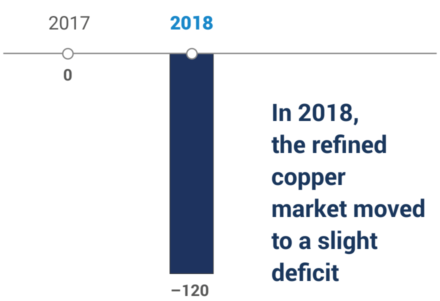
18 › Growing concerns about the consequences of the US-China trade tensions

Sources: *LME, Company data*

Market balance

In 2018, the refined copper market that had been balanced by the end of 2017 moved to a slight deficit. It stood at as little as 0.5% of the total market volume, or 120 kt. Total exchange inventories dropped by 35% to 351 kt (544 kt as at the end of 2017), or a little more than nine days of global consumption, with off-exchange inventories going slightly up.

Refined copper balance *(kt)*



In 2018, the refined copper market moved to a slight deficit

Source: *Company data*

Consumption

Given its high electrical and thermal conductivity, ductility and corrosion resistance, copper is widely used in various industries. Up to 75% of refined copper produced globally is used for manufacturing electrical conductors, including various types of cable and wire. Key copper-consuming industries include construction, electrical and electronic equipment manufacturing, power supply, transport, engineering, machine building and consumer goods production.

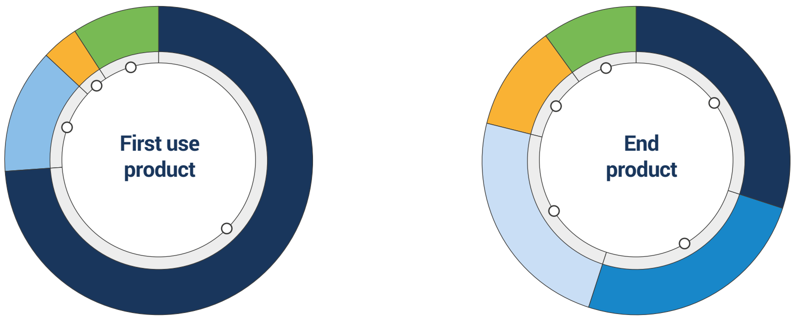
In 2018, global consumption of refined copper totalled 23.7 mt (up 3%, or 0.7 mt y-o-y), primarily owing to stronger demand from cable and wire manufacturers. Consumption in pipe, flat rolled products and billet production segments saw moderate growth.

China remains the key copper consumer globally, with its market share reaching 49% in 2018 due to the demand growth of 5%. Market concerns about China's economic slowdown (also due to the US-China trade tensions) did not materialise. The country kept ramping up copper imports and copper feedstock in particular. In 2018, Chinese refined copper imports added 13% to reach 5.3 mt offsetting a one-third drop in copper scrap imports due to the environmental constraints imposed by the state. Copper concentrate imports went up by 14% to 19.7 mt, which helped to meet China's growing consumption needs through the ramp-up of local production.

The demand for copper in developed economies saw only a moderate increase in 2018, with Europe (the Company's key market for copper cathodes) and North America up by 1.7% and 3.2%, respectively, and Asia (excluding China) remaining flat. Russian domestic copper cathode consumption in 2018 was moderately down.

The demand for copper in developed economies saw **a moderate increase** in 2018

Refined copper consumption by industry *(%)*



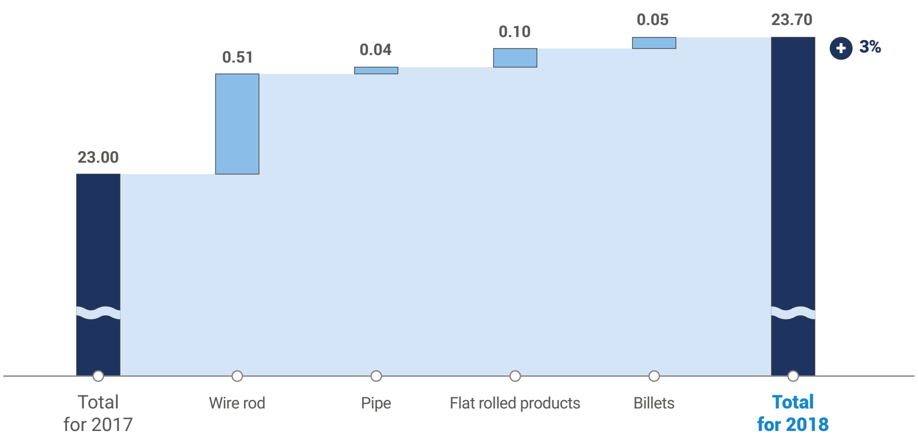
Wire rod	74
Flat rolled products	13
Billets	4
Pipe	9

Construction	30
Consumer goods and equipment	25
Power grids	24
Transport	11
Heavy engineering	10

Total 23.7 mt

Sources: *Company data, Wood Mackenzie*

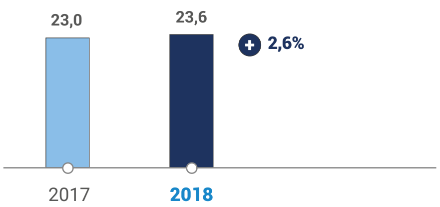
Changes in refined copper consumption in 2018 by industry *(mt)*



Sources: *Company data, Wood Mackenzie*

Production

Refined copper production in 2017–2018 *(mt)*



Sources: *Company data, Wood Mackenzie*

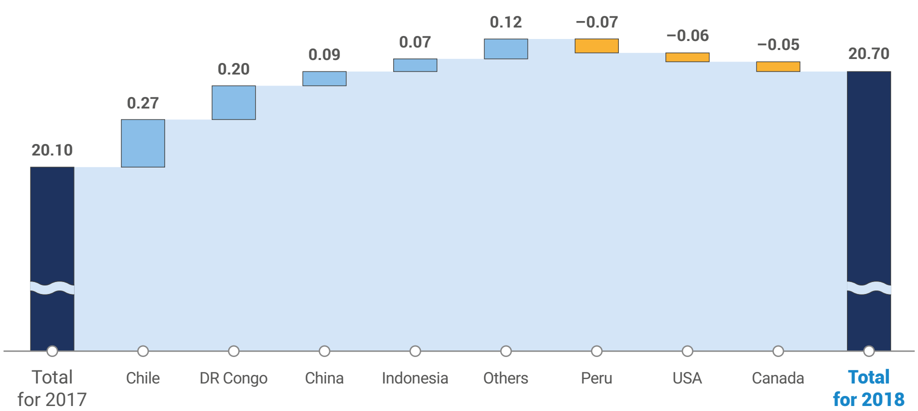
In 2018, global production of refined copper increased by 2.4%, or 0.56 mt, compared to 2017, totalling 23.6 mt. China remains the production leader, firmly committed to the expansion of domestic smelting and refining capacities. In 2018, refined copper production in China grew by 5% to 8.7 mt, while its share in global output was 37%. Only 20% of Chinese production is local extraction, with another 80% coming from imported copper concentrates and scrap.

In the rest of Asia (excluding China), production dropped by 2.7% (going down in India and Philippines, and up in Japan). In North America, it grew by 3.5% (up in the USA and Canada) and in South America, output remained unchanged. In Europe, copper production slipped by 1.4% triggered by Germany and Poland. According to preliminary estimates, Russia's production of refined copper saw modest growth.

In 2018, global copper production grew by 2.8% to 20.7 mt. Some 2.9 mt of refined copper was produced from accumulated concentrate stockpiles and scrap on the back of higher scarp collection in the first half of the year driven by higher copper prices. The growth in copper production came mainly on the back of the recovered production in Chile (facing a significant drop due to strikes a year earlier), a significant increase in production in Africa (Democratic Republic of the Congo and Zambia), in Indonesia (following the lifted state ban on concentrate exports) and the development of Chinese domestic mining industry.

Chile, the top global supplier of copper, saw a 5% production increase y-o-y (to 5.8 mt) in 2018 due to a 1.5-month strike at BHP's Escondida, the largest copper mine, where the workers did not agree with the conditions of their new labour agreements. The country also kept facing a lower output by the state-owned Codelco (1.8 mt, down 2% y-o-y) owing to a lack of investments in the old fields with declining copper grade.

Copper production in 2017–2018 *(mt)*



Sources: *Company data, Wood Mackenzie*

A 12% growth in African production to USD 2.4 mt was mainly backed by KOV and Kamoto mines in the Democratic Republic of the Congo and Sentinel mine in Zambia.

China, which is currently developing smaller mines, saw its production grow by 6% to 1.6 mt. Indonesia saw its copper output go up by 10% to 0.7 mt after the government lifted the ban on copper concentrate exports following the decision of Freeport-McMoRan and Rio Tinto to sell a majority stake (51%) in the Grasberg mine to Indonesia. In Kazakhstan, development of the new Bozshakol mine by KAZ Minerals drove the output up by 7%.

In Peru, production was below the expectations (2.3 mt, down 3% y-o-y) caused by some technical issues of lower copper output at the new Las Bambas mine purchased by China's MMG from Glencore several years ago. In North America, production dropped by 4% to 2.6 mt due to declining copper contents along with technical issues at some small mines in the USA and Canada.

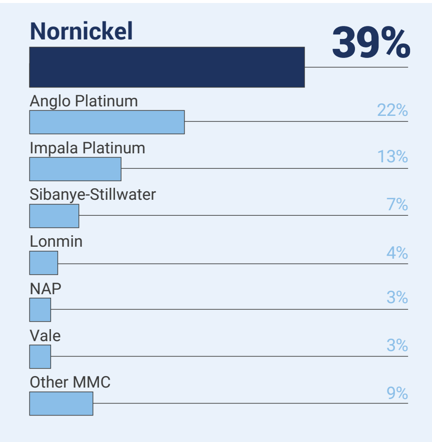
According to preliminary estimates, Russia saw its production grow by about 6%.

The actual refined copper production for 2018 was above the analyst forecasts issued early in 2018 thanks to the production surge above expectations. The actual refined copper consumption was also above the analyst forecasts thanks to China maintaining its demand and the USA even increasing it despite the ongoing trade tensions between these two countries. This brought the global deficit close to the initial estimates.

PALLADIUM

Pd

No. 1 in palladium production[1]



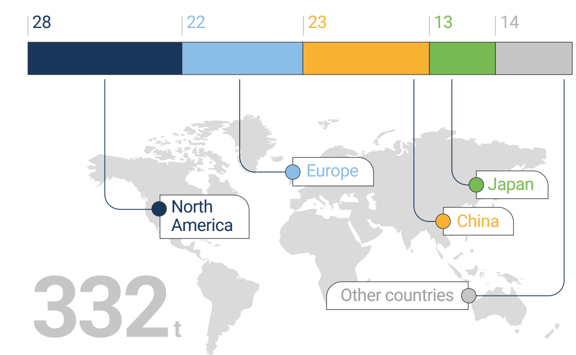
Source: *Company data*

[1] *Refined metal including own feedstock under tolling agreements at third-party facilities.*

Key trends in the palladium market

2018
Palladium prices grew for a third consecutive year on the back of increased consumption in the car-making industry amid tightened environmental standards across the world and limited metal production. The deficit was offset by supplies of previously accumulated reserves.

Industrial consumption of palladium by regions *(%)*



Outlook: positive. The market deficit is expected to widen, as industrial consumption will grow faster than production, which is set to climb at a moderate pace.

Source: *Company data*

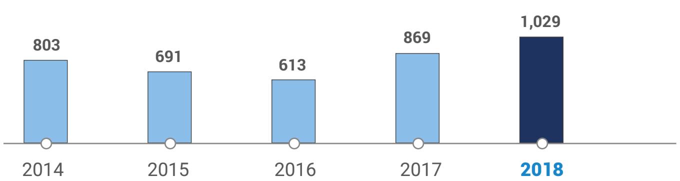
In January–August 2018, palladium prices experienced a moderate downward correction following two years of growth. Profit taking by speculative traders, who reduced their long speculative positions in the futures market, put pressure on prices. In the same period, a deficit in the spot market was partially offset by producers selling their reserves and ETFs scaling down their direct investments in the physical metal.

Driven by continued quantitative easing in the EU and Japan and the Federal Reserve's efforts to raise interest rates, a stronger US dollar negatively affected the price of the entire precious metal basket in the first half of 2018.

In the middle of the year, concerns about the effects of the escalating trade war between the US and China also put pressure on commodity prices as this conflict may have a negative impact on the growth of both industrial production and global GDP.

In the second half of August, palladium prices resumed their growth. The pressure put on prices by speculative investors, including macro funds and algorithmic traders, was mitigated by strong support from the deficit in the spot market. A stronger backwardation in the forward

Average annual palladium prices *(USD/oz)*



market and a spike in leasing rates prompted a shift in investor sentiment together with an increase in net long speculative positions in the futures market.

Another driver behind investors' growing interest in commodities was an overheated equity market in the US, which mainly ensued from industrial stocks and peaked out in early October.

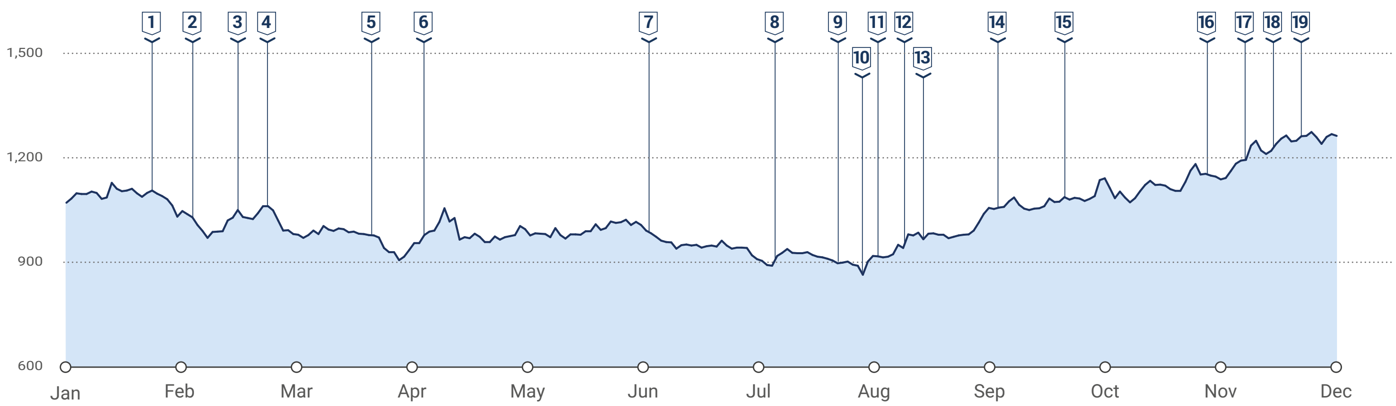
Throughout the year, prices were supported by long-term fundamental factors, such as many years of a sustained market deficit that saw palladium production lagging behind consumption; an increasing share of petrol cars; growing production of cars with hybrid propulsion systems; and expectations of a surge in palladium use within catalysts in automobile exhaust treatment systems – a trend triggered by tougher environmental requirements in key markets.

At the same time, PGM prices were constrained by slowing automobile production, especially in China, where falling car output and sales came as a result of lower consumer spending amid worries about the trade conflict with the US causing an economic slowdown. However, the negative effect from the car production decrease in absolute terms was fully offset by larger per unit use of palladium in exhaust treatment systems, which was facilitated by new standards for verifying environmental compliance of cars (WLTP and RDE tests) and environmental regulations (China 6, Euro 6d, the US's Tier 3, etc.).

During the year, palladium prices gained 20%, reaching an all-time high of USD 1,273 per oz (AM and PM Fix average, LBMA) on 20 December and averaging USD 1,029 per oz (up 18% vs the previous all-time high in 2017).

Together with other PGMs rhodium, iridium and ruthenium, palladium remained among the strongest performers in the commodity markets, with its premium to platinum reaching 60% by the year-end – the highest level since 2001.

Key industry developments and palladium price in 2018 *(USD/oz)*



1 › Massive closing of long speculative positions

2 › Dow Jones lost 11%

3 › Dow Jones regained 8%

4 › US released weak car sales data for February

5, 7, 14, 19 › US Federal Reserve raised interest rates

6 › Sanctions against RUSAL announced

8 › US imposed first round of tariffs on Chinese goods

9 › Impala Platinum announced a restructuring plan for the Lease Area (Rustenburg), providing for production cuts in the medium term

10 › The US Dollar Index reached local highs of 97 p.

11 › Spike in leasing rates

12 › EU introduced the new WLTP emissions test cycle

13 › US imposed financial sanctions against Russia

15 › Dow Jones reached all-time high

16 › South Africa's competition authorities approved Sibanye-Stillwater's takeover of Lonmin

17 › US released strong car sales data for November

18 › China released weak car sales data for November

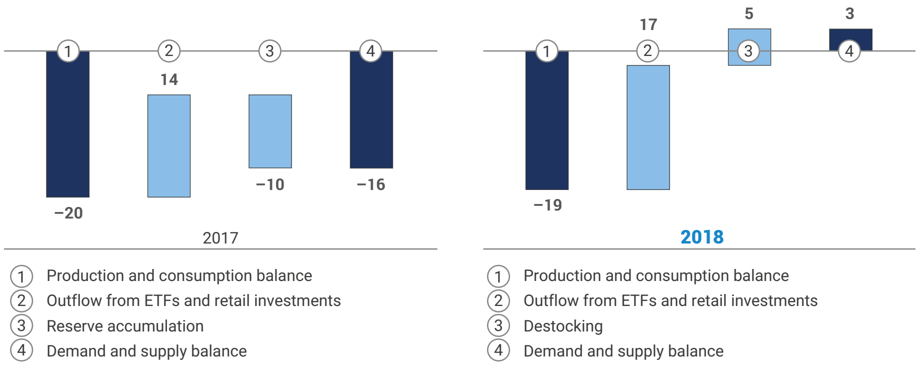
Sources: *LBMA, Company data*

Market balance

Since 2010, there has been a sustained undersupply in the palladium market covered by the consumption of accumulated reserves.

In the reporting period, the imbalance was largely offset by producers' reserves (including Nornickel's Global Palladium Fund) and the outflow from ETFs.

Palladium market balance[1] *(t)*



Source: *Company data*

[1] *Excluding reallocated other reserves.*

Consumption

In 2018, industrial consumption of palladium increased by 6 t (up 2%) compared to the previous year, hitting a new all-time high of 332 t.

Car-making industry. Exhaust treatment systems account for the bulk of total palladium consumption. In this sector, palladium is used in catalytic converters to detoxify exhaust fumes. In most countries, such converters are legally required to be installed on all cars.

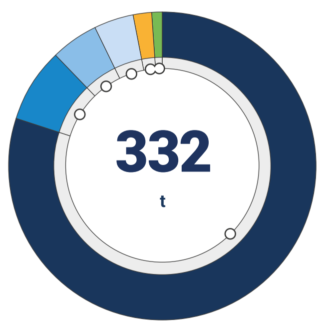
Due to its unique catalytic properties ensuring effective chemical reactions throughout the entire vehicle life cycle, palladium has almost no alternatives except for platinum, which is used mostly in diesel cars, and rhodium. Given the significant share of already produced vehicles and small market size (global production stands at 24 t annually), rhodium suffers from high price volatility and the constant risk of physical metal deficit.

In 2018, palladium consumption by the car-making industry went up by 5 t and broke the record of 266 t. This was mostly driven by tougher regulations on pollutant emissions, including the Worldwide Harmonised Light Vehicle Test Procedure (WLTP) – a new procedure for establishing the CO2 emissions of new cars that will come into effect in the EU and Japan in September and October 2019, respectively. It is designed to make tests more rigorous by extending their distance and duration, increasing the car weight, requiring faster acceleration, and stipulating that testing should be performed at different altitudes and temperatures. Another upcoming regulation is Real Driving Emissions (RDE), to be applied starting September 2019. These developments forced car makers to implement more sophisticated exhaust treatment systems and expand the use of PGMs per catalyst.

The marked increase in palladium consumption by the car-making industry in China came on the back of toughened environmental requirements as part of the China 6 rollout across the country starting from 2019 and beyond. China 6 regulations are based on best practices in emission control as developed in the US and EU, and in some aspects set out additional requirements. In the US, 2018 saw the continued rollout of the Tier 3 standards to more than halve the fleet-average NOx emissions.

Changes in the transport also boosted palladium consumption among the car makers as more light diesel vehicles were replaced with petrol cars and hybrids,

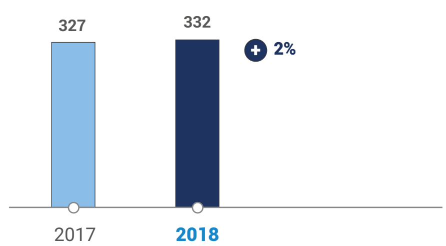
Palladium consumption in 2018 by industry *(%)*



	%	t
Exhaust treatment systems	80	267
Chemical catalysts	8	26
Dental alloys	5	15
Jewellery	4	12
Electronics	2	7
Other	1	5

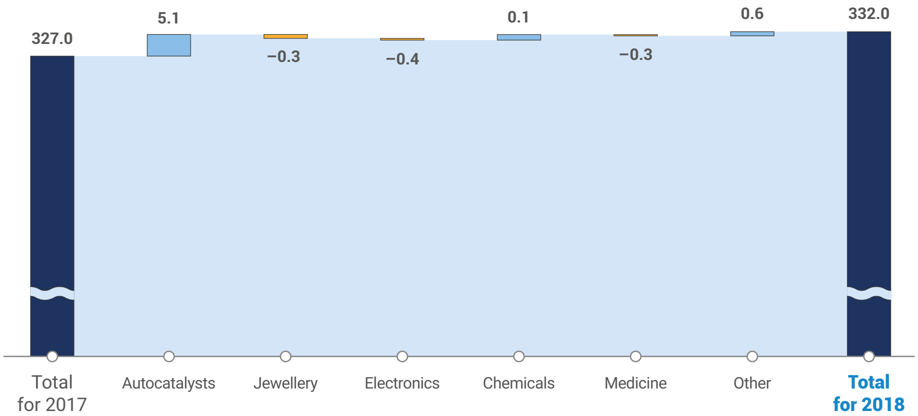
Source: *Company data*

Industrial consumption of palladium *(t)*



Source: *Company data*

Palladium consumption in 2017–2018 by application area *(t)*



Source: *Company data*

which make greater use of palladium-based catalytic converters for exhaust gases. The market share of diesel cars in Europe (27 countries) dropped from 44% to 36% y-o-y, the lowest since 2001.

Hybridisation is another positive trend in terms of palladium consumption, with production of mild, full and plug-in HEVs up by 22%, 46% and 46%, respectively. Petrol engine being a component of a hybrid necessitates wide use of palladium-based catalysts. Having the same displacement as the internal combustion engine, the hybrid uses more of the metal than a traditional petrol engine due to more frequent cold starts.

The growing use of PGMs in the car-making industry is also indirectly driven by consumers migrating from sedans to crossovers with larger engines.

Despite a significant expansion of 61% y-o-y, cars using batteries without PGM-based exhaust catalysts remained a niche market (2% of global car production).

Total car production around the world shrunk by 0.5% y-o-y, causing a drag on the industry's palladium consumption. The worst performer was China, the largest market globally. Its car makers showed a 4% decline as household spending fell amid worries about the trade war with the US prompting an economic slowdown. In North America, Europe and Japan, car production was almost flat, while automotive markets in Russia, India and Brazil grew markedly (up 14%, 8% and 7%, respectively). As mentioned above, the negative effect from decreasing overall car production was fully offset by more extensive use of palladium per vehicle.

By the end of 2018, an upward trend seen throughout the year pushed its premium vs platinum close to 60%. Nevertheless, there have been no signs of platinum replacing palladium within petrol cars catalysts. This would require additional research, reconfigured exhaust systems and changed engine settings, all of which is unlikely due to tougher emission requirements. Any new catalyst must be certified before production, and car makers would have to invest heavily in the above-mentioned, both time- and money-wise. Those costs would only be recoverable if the metal's premium to platinum became long-term. However, the palladium market has been experiencing backwardation (forward prices decrease as maturities extend further), while platinum has been in contango (forward prices increase with maturities). On the typical automotive planning horizon of two years, this resulted in the two metals trading around the same level in 2018.

Hybridisation

is a positive trend in terms of palladium consumption

Electronics. Palladium consumption in the electronics industry continued a moderate downward trend in 2018 (down 0.4 t). In recent years, the use of palladium in multi-layer ceramic capacitors has been in decline, reaching a point where it is limited to the most sophisticated products with a focus on reliability and performance under harsh conditions, such as those in the defence and aerospace industries. Given the metal price inelasticity of their demand, consumption in these sectors is expected to remain unchanged. However, the use of palladium as an electroplating material for connectors and lead frames continued to reduce, although the decrease in per unit consumption was partially offset by an output growth in absolute terms. The final months of the reporting period saw it attract a premium to gold, which, if sustained over a long time, might encourage manufacturers to favour the latter. In the long term, consumption of palladium in the electronics industry may be boosted by proliferation of the IoT and sensor-rich autonomous vehicles.

Chemical industry. The use of palladium in chemical catalysts went up for a second consecutive year to add 1 t in 2018 as a result of new capacities coming on stream, particularly under the Chinese programme to ensure self-sufficiency in basic chemicals. In the mid-term, growing consumption of palladium in the chemical industry will be driven by newly launched terephthalic acid capacities in China.

Healthcare. In the healthcare sector, palladium demand continued declining (down 0.4 t) due to transition to alternative composites. Japan, the largest consumer of the metal in dental prostheses (within the so-called Kinpala alloys), has been going down by an average of 8% annually in recent years, the country's Ministry of Health reports.

Jewellery. In this industry, palladium is used in white gold alloys or, in its pure form, to make wedding rings, as an example of the latter. Its jewellery-related consumption decreased by 0.3 t in 2018. A drop in the Chinese demand for these products amid a general slowdown in consumer spending and a shift to other luxury goods was the primary cause of this continued downward movement. Palladium jewellery sales were also affected by growing prices for the metal.

Due to a lack of marketing support, it is often regarded as a cheaper alternative to platinum, especially when it comes to men's wedding rings. Its average premium vs platinum (17% in 2018) put pressure on the demand for palladium rings.

According to The Goldsmiths' Company Assay Office in London, 62,000 palladium articles (fineness of at least 500 ppt) were hallmarked in the UK during the year, which is 26% less than in 2017. However, buying palladium rings is still economically efficient as the metal's lower density allows producing twice as much jewellery per ounce compared to platinum.

Investment. Investment demand for palladium kept shrinking in 2018. The main reason was withdrawals from ETFs, which reduced their reserves by 17 t to 25 t – the lowest since 2009. The outflow amid growing palladium prices was driven by investors reallocating their capital to futures and other instruments to benefit from the backwardation. Retail investment demand grew slightly in the reporting period (up 0.4 t).

The use of palladium in chemical catalysts **went up for a second consecutive year to add 1 t**

Production

In 2018, primary refined palladium production contracted by 2% to 213 t.

Russia, the metal's major producer, saw a minor drop in output (down 2.1 t) due to MMC Norilsk Nickel terminating the third party feedstock processing.

South Africa, the world's No. 2 palladium producer, demonstrated a 3.7 t reduction in 2018. The main reason was a decline in refined palladium output experienced by Anglo American Platinum as repairs at two smelters prevented the company from processing the entire volume of ore mined. This was despite a considerable growth in production both by its own facilities and by joint ventures, as well as increased feedstock procurement from third parties. As part of its programme to restructure and close down unprofitable mines, Lonmin also slightly reduced output.

At the same time, Impala Platinum, despite some problems in smelting, boosted refined metal production in 2018, and Northam Platinum notably increased output thanks to processing the previously accumulated ore and concentrate inventories at the new smelter launched in the reporting period.

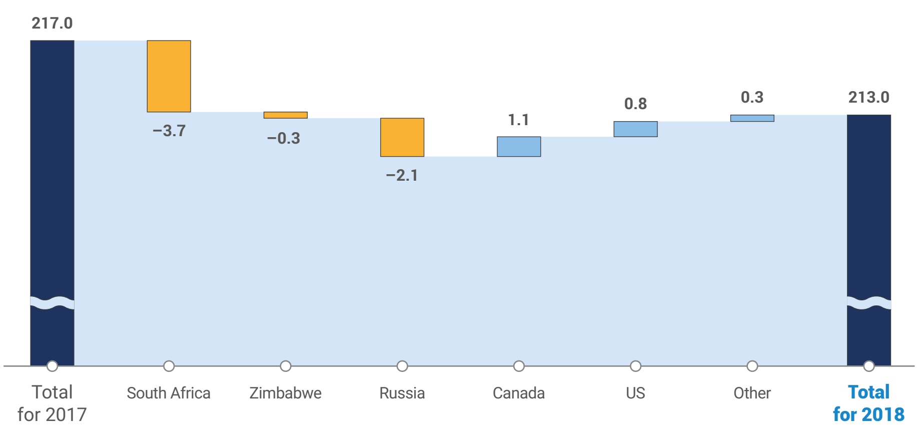
In Zimbabwe, output was close to the previous year's levels (down 0.3 t). Zimplats and Mimosa recorded a slight decline, with production returning to the 2016 rates. Unki reported a moderate growth in output.

Primary palladium production in Canada grew by 1.1 t, with North American Palladium as the largest contributor. Thanks to third-party feedstock, Glencore also posted an increase in production, while mining at its own projects shrank. Vale's output declined owing to the depleted resource base in Sudbury. The US saw a rise in production by 0.8 t. Sibanye-Stillwater, the only palladium producer in the country, increased output after launching the Blitz project.

The main sources of recycled palladium are used automotive exhaust gas catalysts, as well as jewellery and electronic scrap. In 2018, recycled output grew by 10 t to 100 t as collection of autocatalyst scrap increased on the back of higher prices for palladium and high prices for steel scrap. Jewellery and electronic scrap volumes remained flat.

The sources of previously accumulated palladium stockpiles include trading companies, financial institutions, government reserves, and surplus inventories of consumers. In 2017–2018, Nornickel's Global Palladium Fund (GPF) supplied the market with more than 1 moz of palladium on top of its own output – a reserve created through purchases from third parties.

Annual primary palladium output in 2017–2018 *(t)*

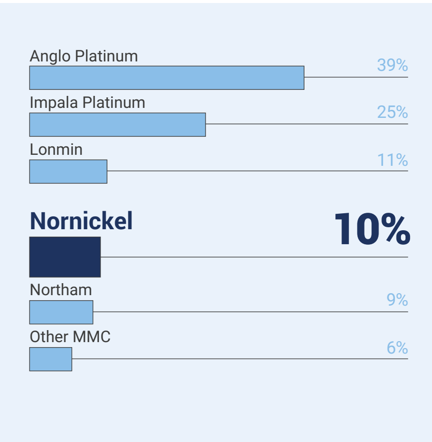


Source: *Company data*

PLATINUM

Pt

No. 4 in platinum production[1]



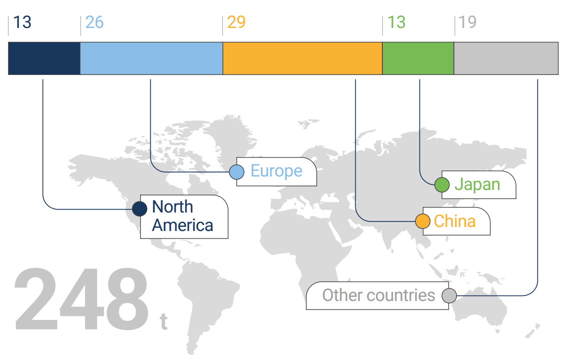
Source: *Company data*

[1] *Refined metal including from own feedstock under tolling agreements at third-party facilities.*

Key trends in the platinum market

2018 The year saw the market gradually moving into a surplus amid a decline in consumption in the automotive and jewellery industries and weakness in investor demand. Platinum consumption by other industries also decreased, however this was largely offset by significant growth in the chemicals and glass sectors.

Platinum consumption by region *(%)*



Outlook: ocautiously positive. In 2019, demand for platinum is expected to recover modestly, supported by the tighter vehicles emission regulations, higher levels of consumption in other industries, and revitalised demand from investors.

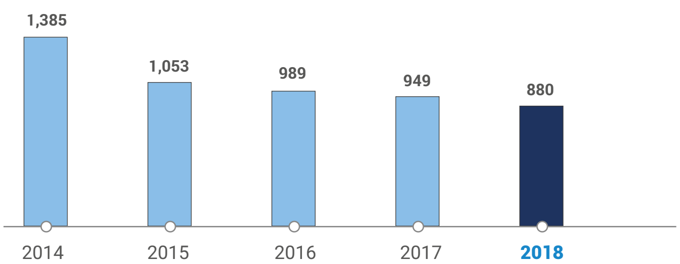
Source: *Company data*

In 2018, platinum prices faced downward pressure with the main decline registered between January and early September when the price slid from USD 1,019 per oz. to USD 774 per oz. (the average of LBMA AM and PM Fix) – the lowest since 2008. This was followed by a period of stabilisation, with the price at 794 per oz by the end of the year.

In the reporting period, platinum and gold prices moved closely together, indicative of platinum prices being highly dependent on the macroeconomic backdrop, which was largely unfavourable for precious metals last year. The pressure primarily came from the USD, which gained in value against the basket of major currencies driven by the Fed's hawkish stance on interest rates. While inflation expectations were low, investors were in no rush to move to the safe havens of precious metals.

Steady growth in the stock market between February and early October (S&P 500 up 9%) and high bond market yields (the average yield on 10-year US Treasuries in the reporting period was 2.9% against

Average annual platinum prices *(USD/oz)*



Source: *LBMA Platinum price*

2.3% a year earlier) diverted investor attention from precious metals.

On top of that, platinum consumption in the Chinese jewellery industry was hit by the threat of a trade war and economic slowdown in China.

Despite the general trend, the period from March through June and especially December saw platinum price lagging behind gold which resulted in a widening gold-platinum spread. While at the year's outset platinum traded 30% lower against gold, by the end of 2018 the gap reached as much as 40%, driven by the platinum market fundamentals and speculative pressure.

The main fundamental drivers included a drop in platinum consumption by the automotive industry due to reduced share of diesel passenger cars in the key markets (primarily, in Western Europe), no awaited recovery in demand from Chinese jewellers, and primary production not being too receptive to low prices.

Speculation was another big negative factor, with investors betting on a downward metal price trend. Between March and September, short positions in platinum on NYMEX increased threefold to 87 tonnes, falling back later to the levels observed at the beginning of the year. At the same time, long positions remained stable during the entire reporting period. Despite the record-low prices, investor demand was weak, with the outflow of investments from ETFs putting additional pressure on the price.

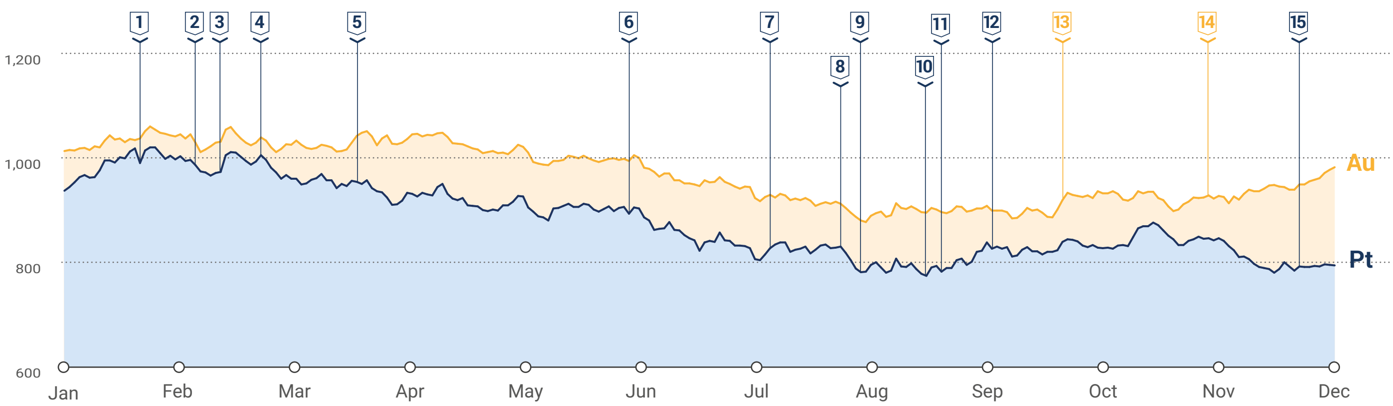
The prevailing negative sentiment dragged down the average platinum price in 2018 to 14-year lows (USD 880 per oz), down 7% from the previous year.

The platinum price stood at

USD 794 per oz.

at the end of 2018

Key industry developments and platinum price in 2018 *(USD/oz)*



1 › Speculative long positions on NYMEX reached the annual peak

2 › Dow Jones sank 11%

3 › Dow Jones regained 8%

4 › US released weak car sales data for February

5, 7, 14, 19 › US Federal Reserve raised interest rate

7 › US imposed first round of tariffs on Chinese goods

8 › Impala Platinum announced a restructuring plan for the Lease Area (Rustenburg), providing for production cuts in the medium term

9 › The US Dollar Index reached local highs of 97 p.

10 › EU introduced the new WLTP emissions test cycle

11 › Long speculative positions on NYMEX hit the year's lows

13 › Dow Jones reached all-time high

14 › South Africa's competition authorities approved Sibanye-Stillwater's takeover of Lonmin

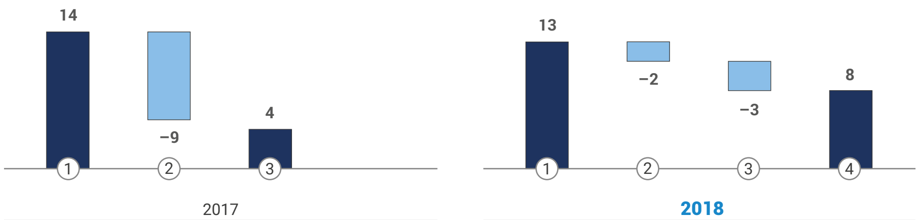
Source: *LBMA, Company data*

Market balance

The platinum market saw a surplus in 2018 as production of platinum exceeded consumption, though part of the extra supply was absorbed by demand from investors.

8 t
of surplus in the platinum market in 2018

Platinum market balance *(t)*



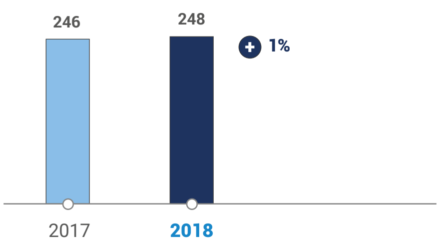
2017:
1. Platinum production and consumption balance
2. Inflow to ETFs and retail investments
3. Demand and supply balance

2018:
1. Platinum production and consumption balance
2. Inflow to ETFs and retail investments
3. Reserve accumulation
4. Demand and supply balance

Source: *Company data*

Consumption

Platinum consumption *(t)*



Source: *Company data*

1%
growth in the industrial consumption of platinum in 2018

Industrial consumption of platinum in 2018 rose to 248 t, up by 2 t (or 1%) y-o-y.

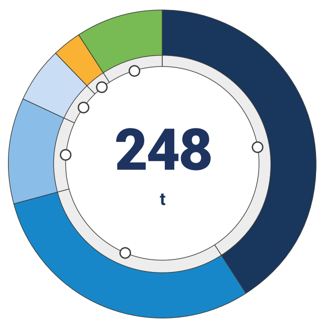
The automotive industry is the main consumer of platinum. Over 80% of platinum in this industry is used to manufacture exhaust gas catalysts for diesel vehicles.

In 2018, platinum consumption in the automotive sector decreased y-o-y by 5.6 t, which mainly had to do with a decreased share of diesel vehicles in their key market – Europe. The market share of diesel cars in Europe (27 countries) dropped from 44% to 36% y-o-y, the lowest since 2001.

Diesel engines are giving way to petrol-based solutions, and more expensive vehicles utilise hybrids (combining petrol and electric engines). Lower platinum consumption by car makers was partially offset by increased manufacturing of heavy-duty vehicles (up 2% y-o-y), catalytic devices of which still rely on platinum.

Diesel engines, together with hybrids, are the key and most cost-efficient solutions to achieve the EU's targets for reducing CO_2 emissions to 95 g/km by 2020. New diesel cars comply with the existing environmental

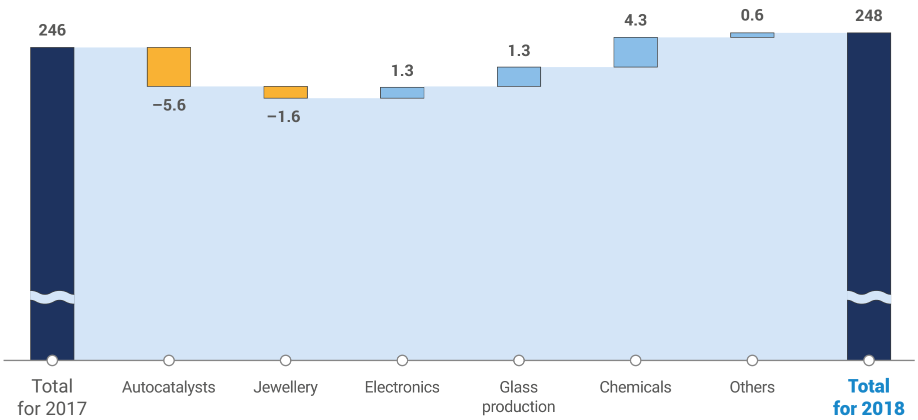
Platinum consumption in 2018 by industry *(%)*



	%	t
Exhaust treatment systems	41	101.6
Jewellery	30	74.0
Chemical catalysts	11	26.8
Glass production	6	14.5
Electronics	3	8.5
Other	9	22.4

Source: *Company data*

Platinum consumption by application area *(t)*



Source: *Company data*

requirements, and automakers are working hard to restore confidence towards them, which may result in increased platinum consumption in the automotive industry.

The second biggest platinum consumer is **the jewellery industry**, accounting for a third of the demand. The reporting period saw a sustained declining trend of platinum consumption in the industry (down 1.6 t) that set in during the previous years. The decrease was primarily driven by lower jewellery demand in China due to consumers switching to other forms of investing and the falling demand for luxury goods amid fears about the country's economic performance. While China is currently facing growing competition in the platinum jewellery sector from gold items, other major markets (India, Japan, USA, and Europe) are enjoying increased platinum jewellery sales.

Chemicals. In 2018, primary platinum consumption in industrial catalyst manufacturing increased by 4.3 t, following the ramp-up of oil processing in Japan and other countries in Asia, growth of chemicals production in Western Europe and China, including the launch of new plants to produce nitric acid, paraxylene, silicone and other basic chemicals.

Glass. Platinum is needed to produce glass fibre and optical glass. In the reporting period, the industry's demand for platinum continued to grow (up 3.1 t), in line with the trend observed over the past five years. In recent years, glass fibre has been used in construction, renewable energy (as material for wind power plants), as well as in the automotive industry, where some metal parts of the car body are increasingly replaced by glass fibre equivalents. This accelerated the pace

The second biggest platinum consumer is **the jewellery industry**, accounting for **a third of the demand** at which new glass fibre manufacturing facilities were put into operation – first and foremost in China. Moreover, platinum is used along with rhodium in glass melting machines to produce LCD screens for many electronic devices. The robust growth in the consumer electronics sector over the recent years has led to the opening of many new LCD production facilities in Asia. An increase in the rhodium price premium to platinum is expected to potentially force glass melting equipment manufacturers to switch to higher platinum content alloys.

Electronics. The electronics industry saw a modest rise in platinum consumption (up 1.3 t) triggered by an increase in the platinum-based hard drive production due to the expansion of remote data storage capacities. However, in the personal computer sector hard drives are phased out for solid-state drives, which ensure better performance in PCs and mobile devices, but are too expensive to be used in data storage and processing centres.

Fuel cell production in recent years, platinum consumption in proton-exchange fuel cells, used in motor vehicles and stationary power plants, has been on the rise, reaching about 1.5 t in 2018. Major automakers like Toyota, Daimler, and Hyundai have launched sales of fuel cell vehicles (FCV), while China is actively developing fuel cell-powered buses manufactured by Yutong and other companies. FCVs, just as the fully electric cars powered by rechargeable batteries, produce zero emissions, but unlike them have a larger ranger (500 km and over) and can be refuelled faster.

The Japanese government has announced plans to boost FCV production in the run-up to the Tokyo Olympics in 2020. Meanwhile, China expects to increase the number of FCVs to 50,000 by 2025, bringing it to 1 mln by 2030. With each fuel cell containing about 20 g of platinum, the industry is well positioned to become a major consumer of the metal in the next 5–10 years. On top of that, several cities in China have declared themselves "hydrogen cities", with city authorities introducing special FCV and hydrogen energy support measures.

Investments. Platinum is also widely used as an investment instrument. Physical investments may vary from coins and smaller bars to investments in ETFs that accumulate large amounts of platinum in the form of standard-sized bars. In 2018, the demand for platinum bars from retail investors slightly rose (up 6 t) due to low prices and expectations of their growth. During the year, the investments in platinum ETFs fell by 7 t to 76 t.

1.5 t

consumption of platinum for fuel cell production in 2018

Each fuel cell contains

20 g of platinum

FCVs, just as the fully electric cars powered by rechargeable batteries, **produce zero emissions**

Production

Global production of primary refined platinum in 2018 decreased by 3 t (down 2%) y-o-y to 191 t.

In the reporting period, supply from South Africa, the world's largest platinum producer, declined slightly (down 0.6 t). Anglo American Platinum reduced output of refined metal, despite a significant growth in production both at own projects and under joint venture arrangements, as well as increased feedstock purchases from third parties. This was due to repairs at two smelters, which prevented the company from processing the entire volume of ore mined. As part of its programme to restructure and close down unprofitable mines, Lonmin also slightly reduced output.

At the same time, Impala Platinum, despite some technical problems in smelting, boosted refined metal production in 2018, and Northam Platinum significantly increased output thanks to processing the ore and concentrate inventories at the new smelter launched in the reporting period.

Russia recorded lower output (down 1.7 t), with continued production decline at the alluvial deposits in the Far East driven by the depletion of the mineral resource base. The negative trend was exacerbated by lower output from MMC Norilsk Nickel due to the termination of the third-party feedstock processing.

In Zimbabwe, output was close to the levels of previous years (down 0.2 t). A slight decline was recorded by Zimplats and Mimosa, with production returning to the 2016 rates. On the other hand, Unki reported a moderate growth in output.

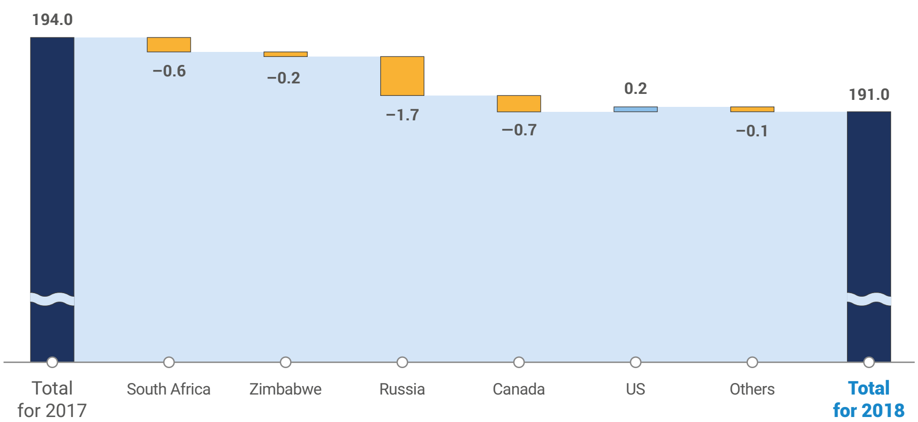
Primary platinum production in Canada dropped by 0.7 t mainly due to lower output by the Vale and Glencore assets, which was only partially offset by higher output from North American Palladium. The US saw a rise in production by 0.2 t. Sibanye-Stillwater, the only palladium producer in the country, increased output owing to the recently launched Blitz project.

The main sources of recycled platinum include used exhaust gas catalysts and jewellery scrap. Recycled output in 2018 grew by 4 t to 69 t, chiefly due to higher automotive scrap volumes. Collection of autocatalyst scrap increased on the back of high prices for steel and other PGMs and growing recycling volumes of European diesel cars with a high platinum content in the catalysts.

The growth of recycling was hampered by difficulties in using new types of silicon carbide based diesel catalysts. Being a refractory material it can damage furnaces unfit to handle it. This requires processors to sort through catalysts and separately process the material with high silicon content, taking extra time and resources.

The sources of previously accumulated platinum stockpiles include trading companies, financial institutions, and surplus inventories of consumers, while the movement of these inventories is non-transparent.

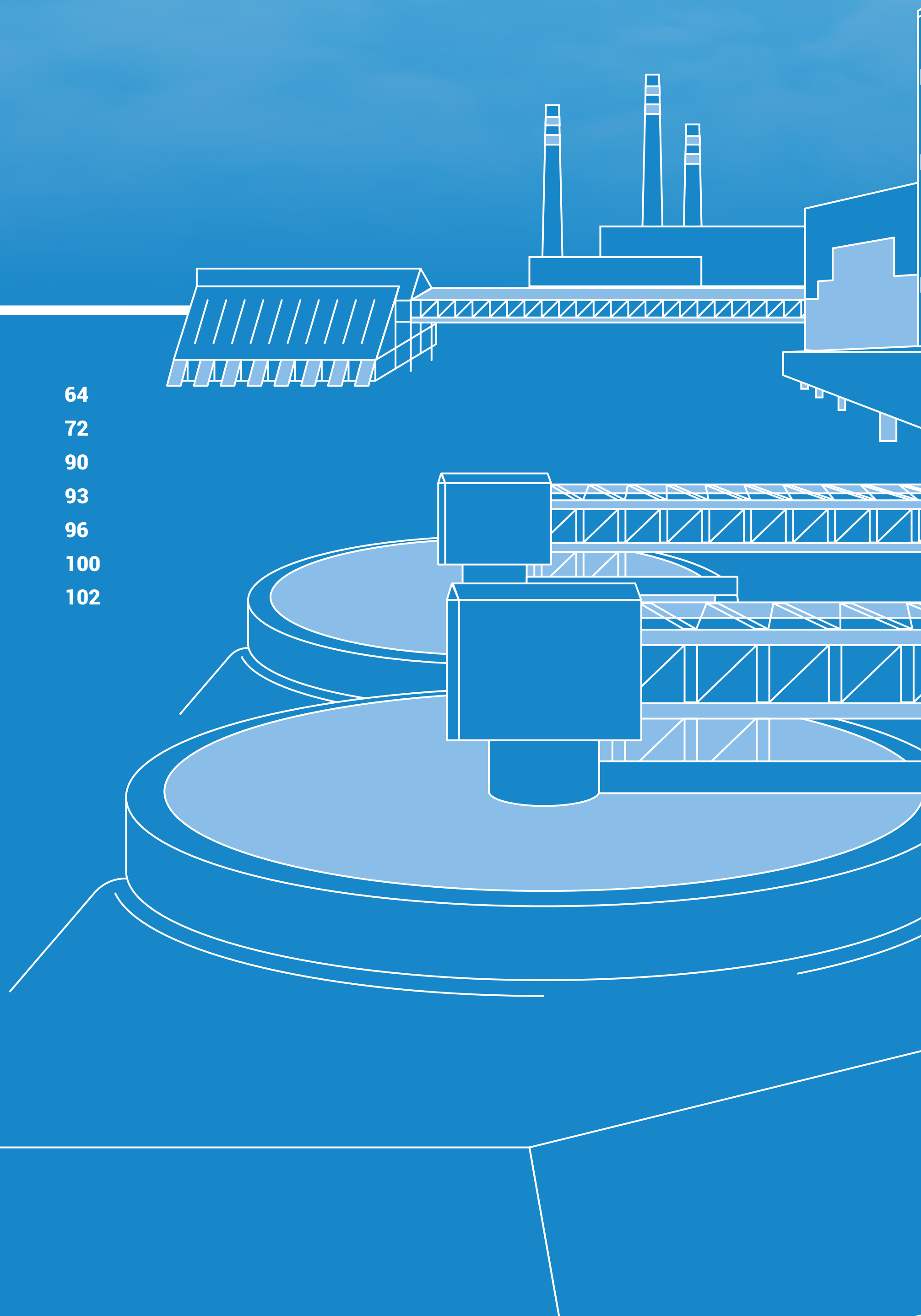
Primary platinum production in 2017-2018 *(t)*

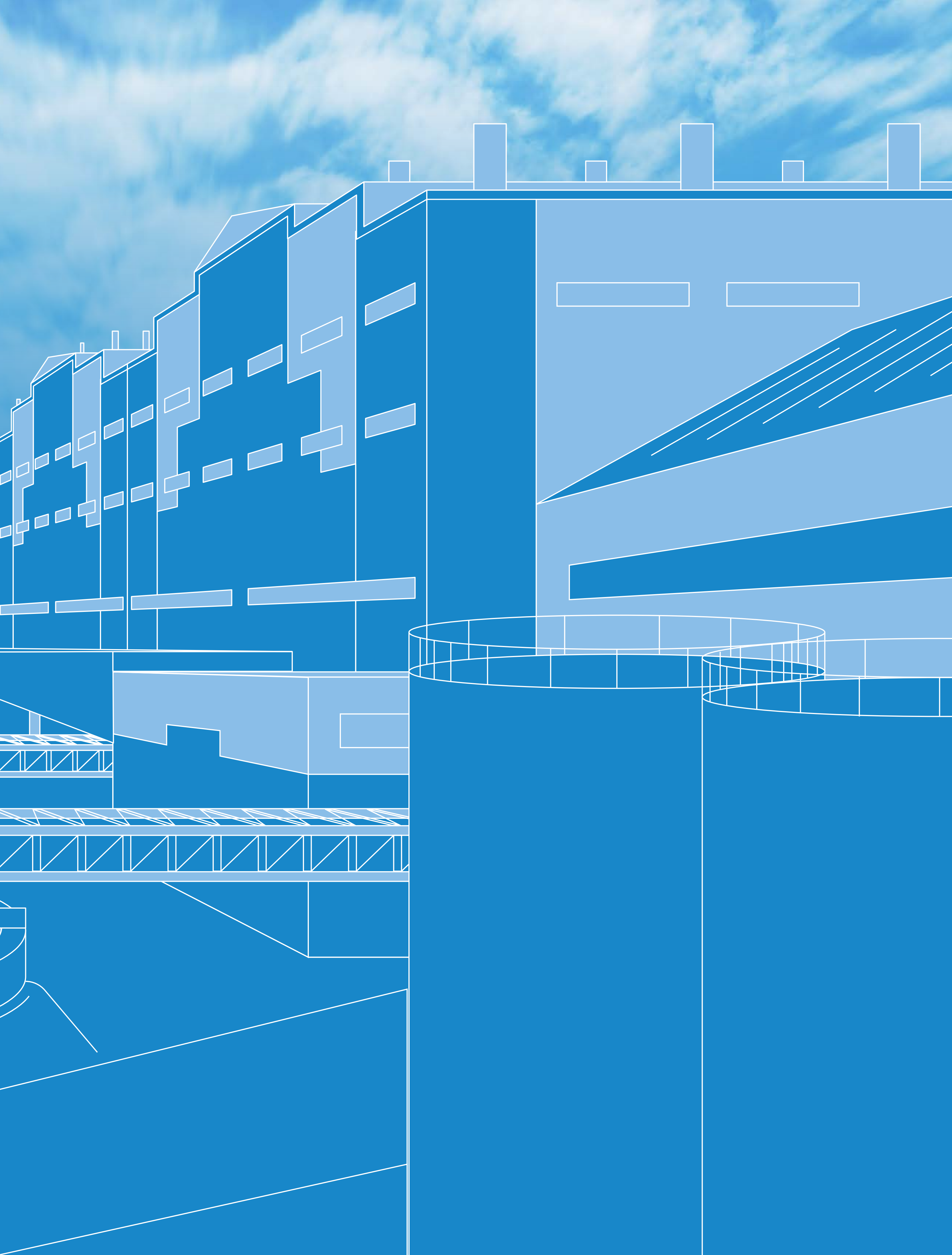


Sources: *Company data, Wood Mackenzie*

4

Business overview





MINERAL BASE

RESERVES AND RESOURCES[1]

The continued expansion of the resource base secures the Company's **long-term development**

Nornickel boasts a unique mineral resource base of Tier 1 assets on Russia's Taimyr and Kola Peninsulas, as well as in the Zabaykalsky Kray. The continued expansion of the resource base secures the Company's long-term development.

Ni	Cu	PGM
15.3 mt	23.5 mt	8.2 kt (263 moz)
6.9 mt	12.1 mt	3.8 kt (123 moz)

[1] *Data regarding the mineral resources and ore reserves were classified based on the analysis and ongoing alignment according to the Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code) of the Russian divisions' ore and metal balance reserves (Russian classification, Form No. 5-gr). The calculations comply with the JORC Code and the terminology recommended by the Russian Code for Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves (NAEN Code), based on the rules and regulations developed by Micon International Co Limited during regular audits of the Group's field reserves in Russia.*
Reserves and resources shown include wholly owned overseas assets, net of deposits in the Trans-Baikal Territory.
The six platinum group metals (PGMs) are platinum, palladium, rhodium, ruthenium, osmium, and iridium.

>>> *For more details on the reserves and resources, please see* **p. 276–277**

Geography of metals mining by Nornickel

1	Kola Peninsula	Ni / Cu / Au / Pt / Pd / Rh / Ru / Os / Ur / Co
2	Taimyr Peninsula	Ni / Cu / Au / Pt / Pd / Rh / Ru / Os / Ur / Co
3	Zabaykalsky Kray	Cu / Au / Ag / Fe
4	South Africa	Ni
5	Australia	Ni / Cu / Co / Rh / Ru / Os / Ur / Pt / Pd

EXISTING OPERATIONS

Nornickel has a strong potential to maintain a high level of ore reserves given the significant mineral resources available within the existing mining operations. The depleted rich and cuprous ore reserves at the existing mines are mainly replaced through inferred resources on the flanks of the deposits in use. The Company plans to ramp up its mining operations by tapping into new rich ore deposits and focusing on the gradual and active development of disseminated and cupriferous ore horizons.

>80 years

of reserves-to-production ratio at the current production level

Talnakh Ore Cluster

Geography and profile

The Talnakh cluster is located in the Norilsk Industrial District, on the right bank of the Norilskaya River. It includes the Oktyabrskoye and Talnakhskoye copper-nickel fields, the largest of their kind, which are located on the north-western margin of the Siberian Craton. In the early 1960s, multiple ore bodies of copper, cupriferous and disseminated ores were discovered in these fields. Nornickel is still mining non-ferrous and noble metals from the outstanding amounts of highest-quality reserves of the Talnakh Ore Cluster.

Geological exploration

The Company undertakes geological exploration at the Talnakh Ore Cluster fields in order to increase the reserves of rich and cupriferous ores through operational exploration and follow-up exploration of deep horizons and flanks.

In 2018, as part of the Follow-Up Exploration at the Oktyabrskoye Field project, Nornickel performed geological exploration from surface, with a number of wells having opened up rich ores outside the boundaries of the approved reserves, which means an increase in the quantity of reserves of the rich ore deposits Severnaya 3 lens and Severnaya 4 rich ore deposits. There was no quantification of the increase done in 2018, the works under the project are ongoing.

Depletion of balance metal reserves in 2018

13.2 mt of ore

Ni — 243.1 mt
Cu — 420.0 mt
PGM — 0.1 mt (3.9 moz)

Additional balance reserves in 2018

3.6 mt of ore

Ni — 51.3 mt
Cu — 67.9 mt
PGM — 0.03 mt (1.0 moz)

Average metal content:

Ni — 1.4%
Cu — 1.9%
PGM — 8.8 g/t

Balance reserves

2,001.4 mt of ore

Ni — 15.2 mt
Cu — 29.5 mt
PGM — 9.8 kt

Proven and probable reserves

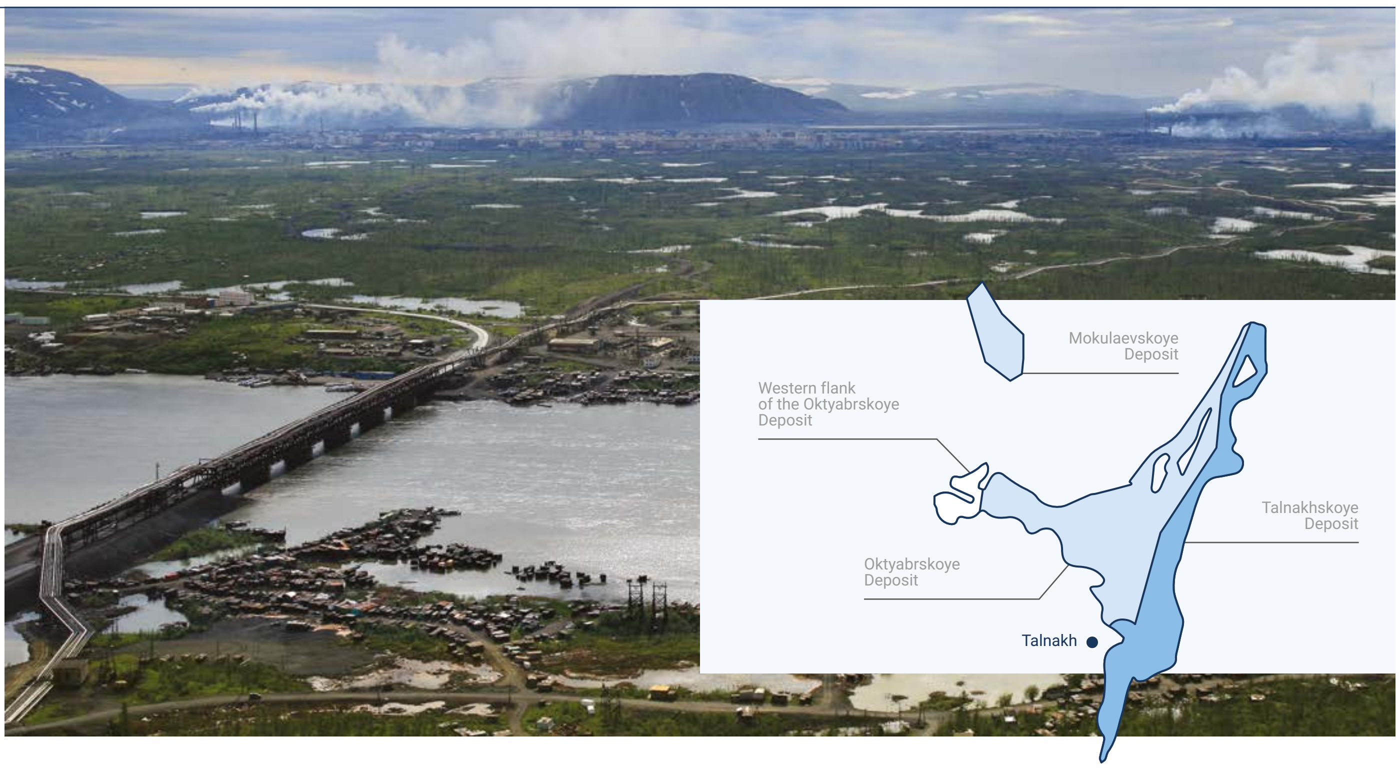
640.2 mt of ore

Ni — 6.2 mt
Cu — 11.7 mt
PGM — 3.6 kt (114.5 moz)

Measured and indicated resources

1,561.6 mt of ore

Ni — 11.5 mt
Cu — 21.9 mt
PGM — 7.4 kt (236.7 moz)



Norilsk Ore Cluster

Geography and profile

The Norilsk Ore Cluster is located in the Norilsk Industrial District. In the Norilsk Ore Cluster, Nornickel has been developing sulphide disseminated ores in the southern part of the Norilsk-1 Field since the 1930s. Nornickel's geological exploration led to an increase in the field's reserves to 150 mt of ore, which will support open-pit and underground mining to 2050 year.

In order to finance the South Cluster project also by attracting investments, Nornickel established Medvezhy Ruchey, a wholly-owned subsidiary that holds the development licence and inherited part of Polar Division's assets. Medvezhy Ruchey LLC includes Medvezhy Ruchey open pit (open-pit mining), Zapolyarny mine (underground mining), tailings pit No. 1, Lebyazhye tailings pit, and Norilsk Concentrator. No geological exploration was carried out in 2018.

Depletion of balance metal reserves in 2018

1.6 mt of ore

Ni — 5.9 kt
Cu — 8.6 kt
PGM — 0.01 kt (0.4 moz)

Additional balance reserves in 2018

0.7 mt of ore

Ni — 2.6 kt
Cu — 4.6 kt
PGM — 0.004 kt (0.1 moz)

Average metal content:

Ni — 0.4%
Cu — 0.6%
PGM — 5.5 g/t

Balance reserves

148.1 mt of ore

Ni — 0.4 mt
Cu — 0.6 mt
PGM — 0.8 kt

Proven and probable reserves

43.4 mt of ore

Ni — 0.1 mt
Cu — 0.2 mt
PGM — 0.3 kt (8.5 moz)

Measured and indicated resources

147.0 mt of ore

Ni — 0.4 mt
Cu — 0.6 mt
PGM — 0.8 kt (25.6 moz)

Kola MMC Deposit

Geography and profile

Kola MMC's fields are located on a 25-kilometre strip between the towns of Nickel and Zapolyarny in the western part of the Murmansk Region, and they are grouped into two ore clusters: Western (Kotselvaara-Kammikivi and Semiletka fields) and Eastern (Zhdanovskoye, Zapolyarnoye, Bystrinskoye, Tundrovoye, Sputnik, and Verkhneye fields). The development of the fields in the Western and Eastern clusters has been in progress since the 1930s and 1960s, respectively.

Depletion of balance metal reserves in 2018

7.2 mt of ore

Ni — 46.9 kt
Cu — 20.7 kt

Additional balance reserves in 2018 [1]

8.3 mt of ore

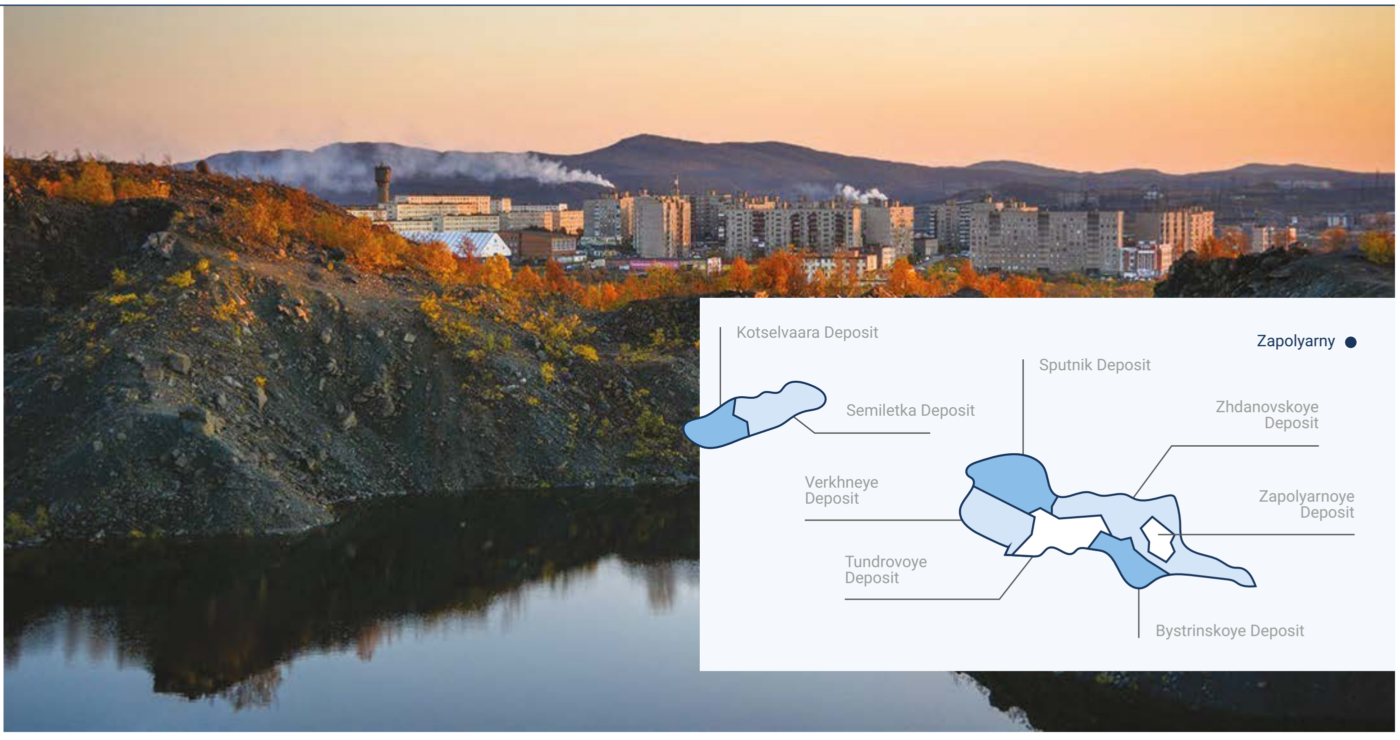
Ni — 44.6 kt
Cu — 20.1 kt

Average metal content: [2]

Ni — 0.5%
Cu — 0.2%

1. *Increase thanks to moving reserves from the unallocated reserve fund (correction of a technical error).*
2. *Average metal grade in ore reserves transferred from the unallocated fund.*

Balance reserves	Proven and probable reserves	Measured and indicated resources
471.5 mt of ore	**100.9** mt of ore	**327.3** mt of ore
Ni — 3.2 mt	**Ni** — 0.6 mt	**Ni** — 2.3 mt
Cu — 1.5 mt	**Cu** — 0.3 mt	**Cu** — 1.1 mt



Bystrinskoye Deposit

Geography and profile

The Bystrinskoye Field is located in the Zabaykalsky Kray, 16 km east of Gazimursky Zavod. GRK Bystrinskoye develops deposits of gold-iron-copper ores at the Bystrinskoye Field.

Geological exploration

No geological exploration to increase the volume of reserves was carried out on the field in 2018. As the existing open in the Bystrinsky GOK area pits need overburden dump sites, geological exploration works were carried out to verify that the prospective locations were barren.

Balance reserves

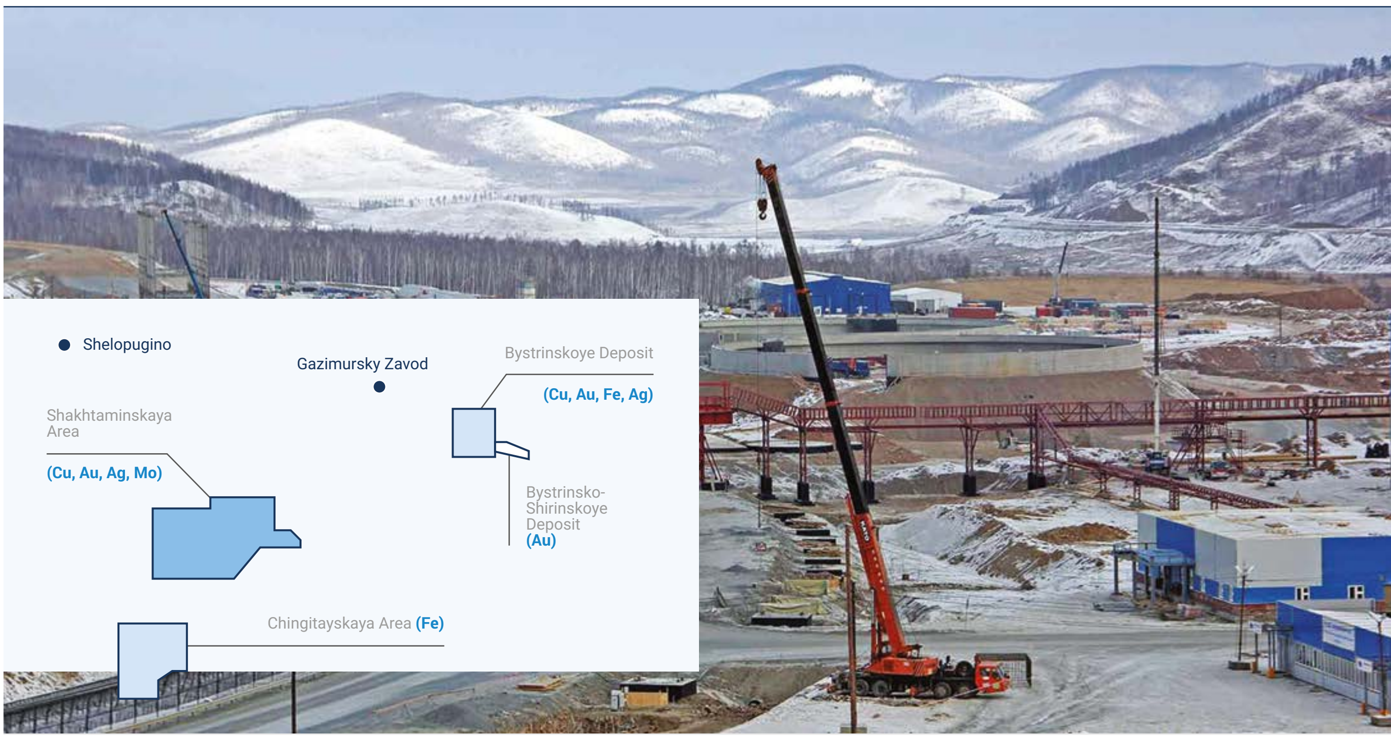
325.9 **mt of ore**

Cu — 2.24 mt
Au — 282.0 t (9.0 moz)
Ag — 1,218.0 t (39.1 moz)
Fe — 72 mt

Depletion of balance reserves in 2018

7.1 **mt of ore**

Cu — 33.7 kt
Au — 8.0 t (258 koz)
Ag — 21.5 t (691 koz)
Fe — 868.4 kt



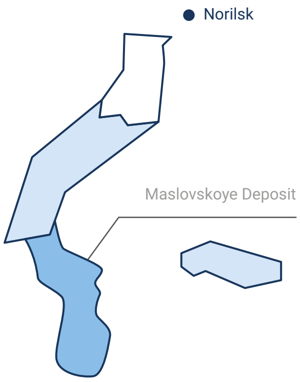
Nkomati

Geography and profile

The Nkomati disseminated copper-nickel sulphide ore deposit is located in South Africa and constitutes part of the Bushveld Complex. Nkomati is comprised of several ore bodies, with the key ones forming a single sulphide ore body (rich nickel ore), and the Main Mineral Zone (MMZ). The field also contains a Peridotite Chromite Mineralisation Zone (PCMZ) with a lower metal grade vs MMZ.

Proven and probable reserves	Measured and indicated resources
84.45 mt of ore	**172.2** mt of ore
Ni — 261.0 kt	**Ni** — 602.7 kt
Cu — 100.9 kt	**Cu** — 241.1 kt
Co — 16.8 kt	**Co** — 34.4 kt
PGM — 75.0 t (2.4 moz)	**PGM** — 165.3 t (5.3 moz)

Development projects



MASLOVSKOYE FIELD

Geography and profile

Maslovskoye Field is located in the Norilsk Industrial District, 12 km south of the Norilsk-1 Field.

The licence to explore and mine platinum-copper-nickel sulphide ores at the Maslovskoye Field was obtained by the Company in 2015. The Field boasts some of the largest reserves in the world.

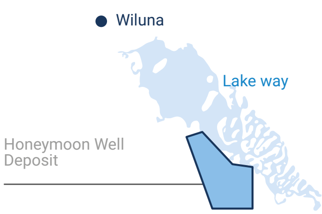
In early 2018, Nornickel and Russian Platinum signed a memorandum of intent to set up a joint venture for further development of disseminated ore deposits in the Norilsk Industrial District. The memorandum provides for the parity of JV partners, with Nornickel and Russian Platinum set to hold a 50% interest each. The partners' contributions to the authorised capital of the JV will come in the form of a licence to develop the Maslovskoye Field held by Nornickel and a licence to develop the southern part of the Norilsk-1 Field and the Chernogorskoye Field held by Russian Platinum. The total reserves of these fields recorded on the government books break down as follows: 3.7 kt of PGM, 1.9 mt of nickel, and 2.7 mt of copper.

Balance reserves

The feasibility study of permanent exploratory standards and the mineral reserves estimation report for the Maslovskoye Field were approved by the State Committee on Mineral Reserves (GKZ). Re-approved reserves are documented in the protocol No. 5561 dated 12 October 2018.

B + C_1+ C_2 mineral reserves

Item	Ore	Metal content in ore
Ore, total	206.8 mt	–
PGM	1.5 kt (48.9 moz)	7.4 g/t
Palladium	1.0 kt (33.1 moz)	5.0 g/t
Platinum	0.4 kt (13.0 moz)	2.0 g/t
Nickel	0.7 mt	0.3%
Copper	1.1 mt	0.5%
Cobalt	26.3 kt	0.01%
Gold	39.4 t (1.3 moz)	0.2 g/t



HONEYMOON WELL DEVELOPMENT PROJECT

Honeymoon Well is located in Australia. The Group holds a development licence for the Honeymoon Well Project, which includes fields hosting disseminated nickel sulphide ores (Hannibals, Harrier, Corella and Harakka) and deposits of solid and vein ores (Wedgetail Field).

The total measured and indicated mineral resources of the Honeymoon Well Project are estimated at 173 mt of ore with an average nickel content of 0.68%.

In 2017, the Company suspended its right to develop the Wedgetail Field for five years, until 7 October 2021.

OPERATING PERFORMANCE

MINING

Polar Division and Medvezhy Ruchey

Mines:
- Taimyrsky
- Oktyabrsky
- Komsomolsky
- Skalisty
- Zapolyarny
- Mayak

17.3 mt of ore

Ni ~ 1.3%
Cu ~ 2.2%
PGM ~ 6.7 g/t

Cupriferous and disseminated ore → Norilsk Concentrator

High grade and cupriferous ore → Talnakh Concentrator

Kola MMC

Mines:
- Severny
- Kaula-Kotselvaara

7.9 mt of ore

Ni ~ 0.6%
Cu ~ 0.2%
PGM ~ 0.1 g/t

Disseminated ore → Zapolyarny Concentrator

GRK Bystrinskoye

Open pits:
- Verkhneildikansky (launch in 2018)
- Bystrinsky-2 (launch in 2018)
- Medny Chainik (planned)
- Yuzhno-Rodstvenny (planned)

7.9 mt of ore

Gold-copper-iron ore → Bystrinsky GOK

Nkomati

Mines

3.1 mt of ore

Ni ~ 0.3%
Cu ~ 0.1%

Disseminated ore → Concentrator

CONCENTRATION

Norilsk Concentrator

Talnakh Concentrator

- Low grade ores
- Third-party feedstock
- **Cu** concentrate
- **Ni** concentrate
- **Cu** concentrate
- **Ni-Po** concentrate
- SPC KUR [1]

Zapolyarny Concentrator

- Briquettes of **Cu-Ni** concentrate
- Third-party feedstock

Bystrinsky GOK

Concentrator

Production assets overview

SMELTING

Copper smelting
Copper Plant

Blister copper
Slime from Copper Tankhouse

Nickel smelting
Nadezhda Metallurgical Plant

Converter matte

Smelting Shop in Nickel

Converter matte

REFINING

Copper Plant

PGM Concentrator (part of Copper Plant)

PGM Concentrator Refining Shop

PRODUCT OFFERINGS

- **Copper:** cathodes
- **Sulphur:** commercial
- **Acid:** sulphuric (for Company use)

- **Precious metal concentrates**
- **Selenium:** technical

- **Nickel:** cathodes, carbonyl, concentrate for sale
- **Copper:** cathodes, concentrate for sale
- **Cobalt:** electrolytic, concentrate for sale
- **Precious metal concentrates**
- **Acid:** sulphuric

- **Copper, iron:** saleable concentrates
- **Gold:** concentrate to be processed at Polar Division's facilities (Copper Plant)

- **Saleable concentrate**

❶ *SPC KUR – stored pyrrhotite concentrate from Kayerkansky Open Pit Coal Mine.*

NN Harjavalta

Ni matte from Kola MMC
Crushed converter matte from Kola MMC
Third-party feedstock

Nickel refinery in Finland

- **Nickel:** cathodes, briquettes, salts, powders, solutions
- **Cobalt:** sulphates, solutions
- **Copper:** saleable cake and cake for Kola MMC

OPERATING PERFORMANCE FOR 2018

With the completion of our capacity reconfiguration, we fully met the production targets for 2018.
In 2018, the output of our key metals, primarily copper, was above the guidance thanks to increased processing of copper concentrate purchased from Rostec State Corporation and improved operating efficiency.
As we successfully reconfigured our production facilities, we were able to almost completely eliminate low-margin processing of third-party feedstock and increase output of nickel and copper produced from the Company's own Russian feedstock by 3% and 19%, respectively. Production of PGM from our own feedstock remained flat y-o-y, but was also above the guidance.
In 2018, Bystrinsky GOK came close to reaching its target parameters and is expected to yield some 40–46 kt of copper concentrate as early as in 2019.
2019 will see an active phase of the Kola MMC upgrade and higher copper output once Bystrinsky GOK hits its target capacity.

First Vice President – Chief Operating Officer
SERGEY DYACHENKO

Ore output *(mt)*

Asset	2016	2017	2018
Russia, including	**24.8**	**25.0**	**25.2**
Polar Division and Medvezhy Ruchey	17.2	17.4	17.3
Kola MMC	7.6	7.6	7.9
Bystrinsky GOK	**0**	**0**	**7.9**
Nkomati (South Africa)[1]	**2.8**	**3.5**	**3.1**

Average metal content in ore mined

Asset	2016	2017	2018
NICKEL (%)			
Polar Division and Medvezhy Ruchey	1.2	1.3	1.3
Kola MMC	0.5	0.5	0.6
Nkomati (South Africa)	0.4	0.3	0.3
COPPER (%)			
Polar Division and Medvezhy Ruchey	2.1	2.2	2.2
Kola MMC	0.2	0.2	0.2
Nkomati (South Africa)	0.1	0.1	0.1
PGM (g/t)[2]			
Polar Division and Medvezhy Ruchey	6.8	6.8	6.7
Kola MMC	0.1	0.1	0.1
Nkomati (South Africa)	n/a	n/a	n/a

Metals recovery in concentration *(%)*

Asset	2016	2017	2018
NICKEL			
Polar Division and Medvezhy Ruchey	77.1	79.9	81.5
Kola MMC	69.0	69.8	69.5
Nkomati (South Africa)	70.6	70.7	65.9
COPPER			
Polar Division and Medvezhy Ruchey	94.2	94.7	94.6
Kola MMC	73.6	75.4	74.1
Nkomati (South Africa)	89.5	90.9	88.4
PGM[2]			
Polar Division and Medvezhy Ruchey	77.7	81.5	82.7

Metals recovery in downstream *(%)*

Asset	2016	2017	2018
NICKEL			
Polar Division and Medvezhy Ruchey[3]	93.4	93.9	94.6
Kola MMC[4]	96.8	96.5	96.7
Kola MMC[5]	98.0	98.2	98.0
Harjavalta[5]	98.3	98.5	97.9
COPPER			
Polar Division and Medvezhy Ruchey[3]	94.1	94.0	94.4
Kola MMC[4]	96.6	96.2	96.1
Kola MMC[5]	97.1	97.4	97.6
Harjavalta[5]	99.7	99.7	99.7
PGM			
Polar Division and Medvezhy Ruchey[3]	95.0	95.6	95.9
Kola MMC[5]	93.4	96.7	94.0
Harjavalta[5]	99.4	99.3	99.8

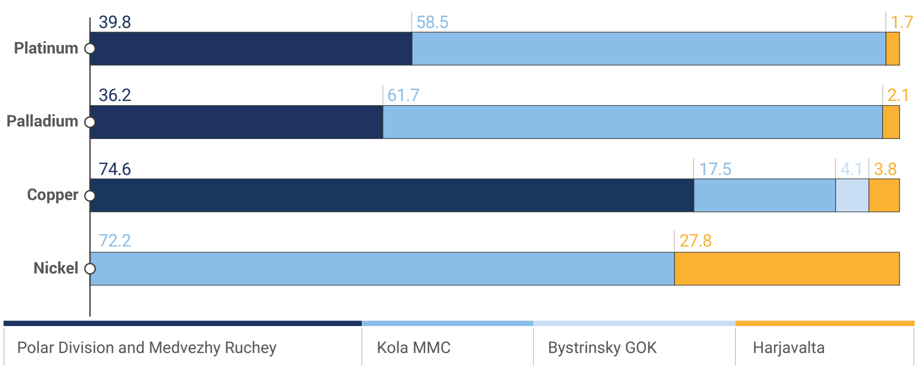
1. *Volumes based on the 50% ownership.*
2. *The five following metals are included: palladium, platinum, rhodium, ruthenium and iridium.*
3. *Feedstock to end products.*
4. *Feedstock to converter matte.*
5. *In refining, converter matter to end products.*

Saleable metals production across the Group

Metal	2016	2017	2018
GROUP TOTAL			
Nickel, kt	**235.7**	**217.1**	**218.8**
from own Russian feed	196.8	210.1	216.9
Copper, kt	**360.2**	**401.1**	**473.7**
from own Russian feed	344.5	397.8	473.5
Palladium, koz	**2,618**	**2,780**	**2,729**
from own Russian feed	2,526	2,728	2,729
Platinum, koz	**644**	**670**	**653**
from own Russian feed	610	650	653
RUSSIA			
Nickel, kt	182.1	157.4	158.0
Copper, kt	350.6	387.6	436.2
Palladium, koz	2,554	2,738	2,671
Platinum, koz	622	660	642
FINLAND			
Nickel, kt	53.7	59.7	60.8
Copper, kt	9.6	13.4	18.0
Palladium, koz	64	42	58
Platinum, koz	22	10	11
SOUTH AFRICA[1]			
Nickel, kt	8.5	8.0	6.6
Copper, kt	4.1	4.5	3.1
Palladium, koz	40	46	33
Platinum, koz	15	20	13

[1] *Saleable concentrate production based on the 50% ownership Nkomati's performance is reflected in financial results using proportional consolidation according to our stake and not reflected in other totals.*

Metals production in 2018 – breakdown by asset *(% from the overall Group production)*



TAIMYR PENINSULA
(Polar Division and Medvezhy Ruchey)

Polar Division and Medvezhy Ruchey are the Group's flagship subsidiaries boasting a full metals production cycle that embraces operations ranging from ore mining to the shipment of end products to customers. Operating the Company's largest deposits, they mine ca. 17 mtpa of ore. In 2018, the Company completed a feasibility study for the project to increase ore output at Medvezhy Ruchey to 9 mtpa.

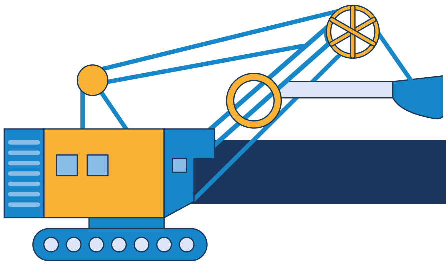
Polar Division and Medvezhy Ruchey are located beyond the Arctic Circle on the Taimyr Peninsula in the north of the Krasnoyarsk Territory, Russia. The sites are linked to other regions by the Yenisey River, the Northern Sea Route and by air.

2018 milestone

In 2018, Polar Division and Medvezhy Ruchey accounted for 75% and 37% of the Group's total copper and PGM end products, respectively.

17.3 mln t

Polar Division and Medvezhy Ruchey's total ore output in 2018



MINING (Polar Division and Medvezhy Ruchey)

Polar Division and Medvezhy Ruchey mine copper-nickel sulphide ores of three grades. Rich ores are characterised by a higher content of non-ferrous and precious metals; cupriferous ores are characterised by a higher copper content vs nickel; disseminated ores are characterised by a lower metal content.

The Talnakhskoye and Oktyabrskoye Deposits are developed by Taimyrsky, Oktyabrsky, Komsomolsky, Skalisty and Mayak Mines. Ores are extracted through slicing and chamber mining with flowable backfilling.

In mid-2018, Skalisty mine was spun off from Komsomolsky Mine to become an independent operation as part of an effort to improve management efficiency across Polar Division's upstream assets.

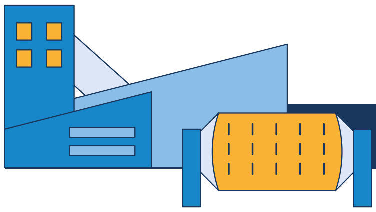
The Norilsk-1 Deposit is developed by Polar Division's Zapolyarny Mine through open-pit and underground mining. Underground mining is carried out through sublevel (level) caving using front ore passes and self-propelled vehicles.

2018 milestones

In 2018, Polar Division and Medvezhy Ruchey's total ore output decreased marginally by 0.3% to 17.3 mt. The production of rich ores increased by 2.5% y-o-y, while the production of cupriferous ores dropped by 5.2% y-o-y. Increased output of rich ores was driven by the performance of Taimyrsky and Skalisty Mines, demonstrating an aggregate 5.6% production growth y-o-y. In 2018, disseminated ore production was up by 4.4% primarily due to higher output at Mayak and Zapolyarny Mines. The change in the volumes of ore mined was in line with the annual production plan.

Ore output *(mt)*

Deposit/Mine, ore type	2016	2017	2018	Mine type
Total ore	**17.24**	**17.38**	**17.32**	
rich	6.19	6.59	6.76	
cupriferous	7.08	7.17	6.79	
disseminated	3.97	3.62	3.78	
POLAR DIVISION				
Oktyabrskoye Deposit:	**8.86**	**8.82**	**8.95**	
Oktyabrsky Mine	5.32	5.23	5.17	Underground
rich	1.29	1.13	0.98	
cupriferous	3.04	3.15	2.98	
disseminated	0.99	0.95	1.21	
Taimyrsky Mine	3.54	3.59	3.79	Underground
rich	3.54	3.59	3.79	
Talnakhskoye and Oktyabrskoye Deposits:	**6.34**	**6.92**	**6.70**	
Komsomolsky Mine	5.35	5.86	3.82	Underground
rich	1.31	1.85	0	
cupriferous	4.04	4.01	3.82	
Skalisty mine	0	0	1.95	Underground
rich	0	0	1.95	
Mayak Mine	0.99	1.06	0.93	Underground
rich	0.04	0.03	0.04	
disseminated	0.95	1.03	0.89	
MEDVEZHY RUCHEY				
Norilsk-1 Deposit (Zapolyarny Mine)	2.04	1.64	1.67	Open-pit Underground
disseminated	2.04	1.64	1.67	



CONCENTRATION (Polar Division and Medvezhy Ruchey)

Concentration facilities

- Talnakh Concentrator;
- Norilsk Concentrator (part of Medvezhy Ruchey).

Talnakh Concentrator processes rich, cupriferous and disseminated ores from the Oktyabrskoye and Talnakhskoye Deposits to produce nickel-pyrrhotite and copper concentrates and metal bearing products. The key processing stages include crushing, milling, flotation and thickening.

Norilsk Concentrator processes all disseminated ores from the Norilsk-1 Deposit, cupriferous and disseminated ores from the Oktyabrskoye and Talnakhskoye Deposits, and Copper Plant's low grade ores to produce nickel and copper concentrates. The key processing stages include crushing, milling, gravitation and flotation enrichment, and thickening. Thickened concentrates are transported via a pipeline from Talnakh and Norilsk Concentrators to the downstream facilities for further processing.

Sulphide ore processed *(mt)*

Concentrator	2016	2017	2018
Talnakh Concentrator	8.6	10.0	10.4
Norilsk Concentrator	8.1	7.5	6.8

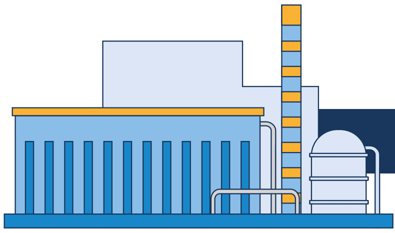
Nickel recovery *(%)*

Concentrator	2016	2017	2018
Talnakh Concentrator	79.5	81.7	83.2
Norilsk Concentrator	70.9	71.7	71.9

2018 milestones

In 2018, the Company's concentration facilities processed a total of 17.2 mt of feedstock (including rich, cupriferous and disseminated ores). Over the year, Talnakh Concentrator processed 10.4 mt of ore, up 0.4 mt y-o-y. The facility's nickel recovery into bulk flotation concentrate from ore processed, including output of metal bearing pyrrhotite product, increased by 1.5% y-o-y to 83.2%. Higher recovery rates were driven by scheduled fine-tuning of the technological process at Stage 2 of Talnakh Concentrator.

In 2018, volumes of ore processed at Norilsk Concentrator were 6.8 mt or 0.7 mt lower y-o-y in line with the mining plan. The facility's nickel recovery into bulk concentrate was 0.2% higher y-o-y, reaching 71.9%. During the year, the facility also processed significant volumes of Copper Plant's low grade ores.



SMELTING (Polar Division and Medvezhy Ruchey)

2018 milestones

In 2018, copper output was 15% higher than a year ago due to increased processing of copper bearing feedstock obtained from Rostec State Corporation. Platinum and palladium output in 2018 beat the targets and exceeded the 2017 volumes thanks to using up the work-in-progress inventory of PGM Concentrator (part of Copper Plant).

Product offering:

- copper cathodes;
- nickel converter matte for Kola MMC;
- precious metal concentrate;
- commercial sulphur;
- technical selenium.

Smelting facilities

- Nadezhda Metallurgical Plant
- Copper Plant
- PGM Concentrator (part of Copper Plant).

Nadezhda Metallurgical Plant produces converter matte and elemental sulphur by processing:

- Talnakh Concentrator's nickel-pyrrhotite concentrate and metal bearing products;
- Norilsk Concentrator's nickel concentrate;
- pyrrhotite concentrate previously stored at Kayerkansky Open Pit Coal Mine (KUR-1).

Production chain

Concentrates produced by the Company, including steam cured sulphide concentrate, are fed into flash smelting furnaces of Nadezhda Metallurgical Plant. Steam cured sulphide concentrate is leached in Hydrometallurgical Shop of Nadezhda Metallurgical Plant from products with low metal content, such as Talnakh Concentrator's metal bearing products, products from Nadezhda Metallurgical Plant's storage facility, and settler concentrates. The matte produced in flash smelting furnaces is then blown into high grade converter matte.

Copper Plant processed all of the copper concentrate from the Company's concentrators, as well as third-party feedstock, to obtain copper cathodes, elemental sulphur and sulphuric acid for the production needs of Polar Division.

PGM Concentrator (part of Copper Plant) recycles slime from the Tankhouse to produce concentrates of precious metals and technical selenium.

Precious metals produced by Polar Division are refined at Krasnoyarsk Precious Metals Refinery under a tolling agreement.

At Polar Division, metals are produced from its own feed. Since Q4 2016, all nickel converter matte from Nadezhda Metallurgical Plant has been processed at Kola MMC due to the Nickel Plant shutdown.

Metals output

Metal	2016	2017	2018
Nickel, kt	50.9	0	0
Copper, kt	280.3	306.9	353.1
Palladium, koz	1,703	956	987
Platinum, koz	449	259	260

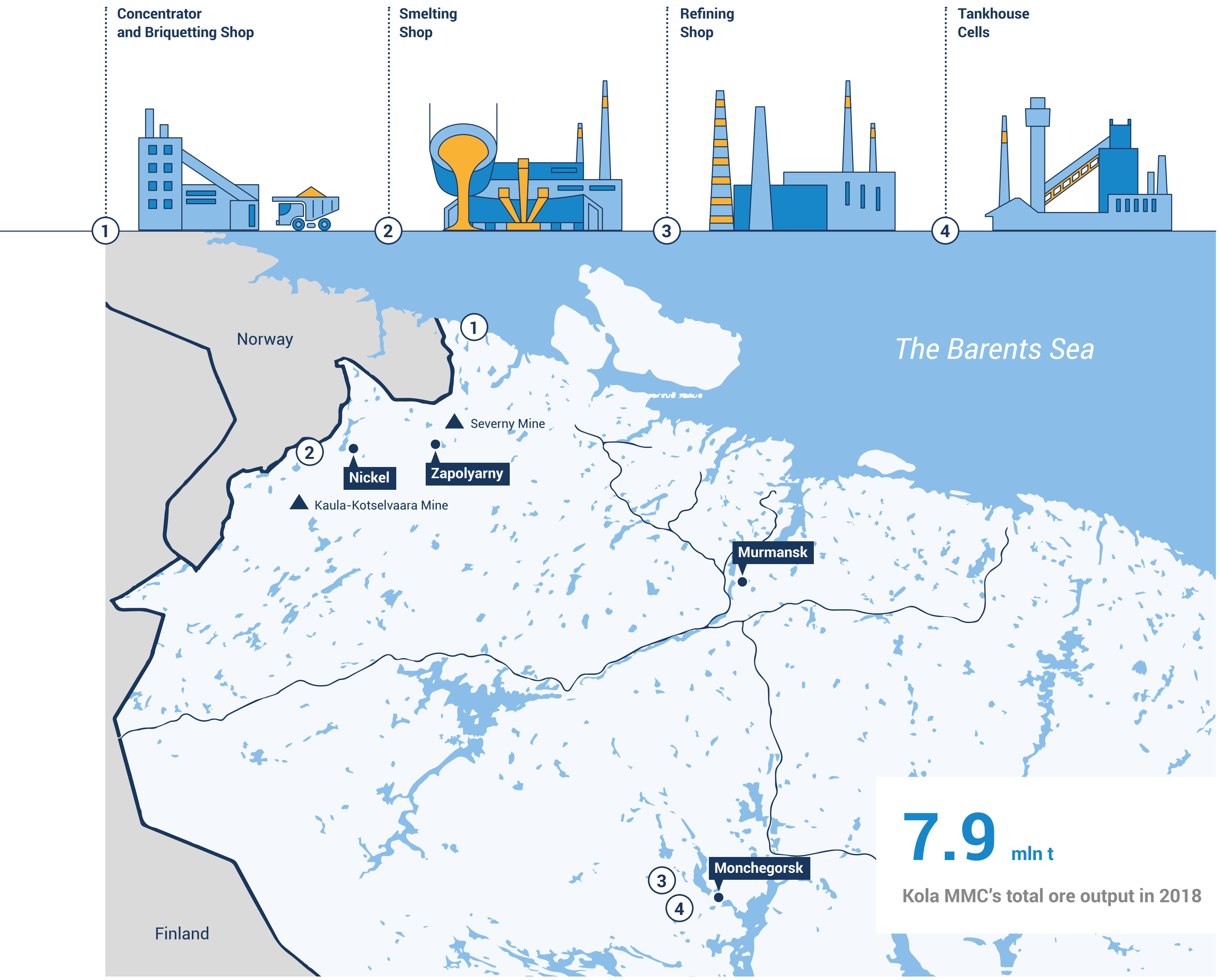
KOLA PENINSULA
(Kola MMC)

2018 milestone

In 2018, Kola MMC accounted for 72%, 18% and 61% of the Group's total nickel, copper and PGM end products, respectively.

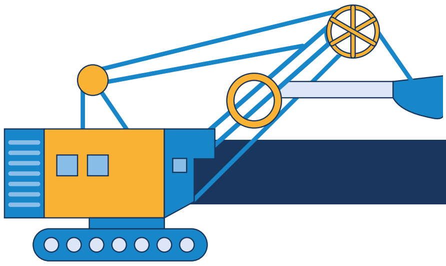
Kola Mining and Metallurgical Company (Kola MMC) is Norilsk Nickel's 100% subsidiary and an important production asset.

Located on the Kola Peninsula in Russia's Murmansk Region, Kola MMC is fully integrated into the transport infrastructure of the Northwestern Federal District.



7.9 mln t

Kola MMC's total ore output in 2018



MINING (Kola MMC)

Kola MMC produces disseminated copper-nickel sulphide ores containing nickel, copper and other commercial components.

It leverages various ore mining methods:

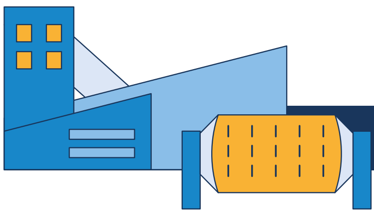
- the Zhdanovskoye Deposit uses sublevel longwall caving with front ore passes, block caving (limited scope of application), and open-pit mining (at Yuzhny open pit);
- the Kotselvaara and Semiletka Deposits primarily use stoping from sublevel drifts and sublevel caving, as well as room-and-pillar short-hole and long-hole stoping (limited scope of application).

2018 milestones

In 2018, Kola MMC's total ore output amounted to 7.9 mt, up 3.4% y-o-y, owing to higher volumes of ore mined to ensure utilisation of the concentrators' design capacity. The change in the volumes of ore mined was in line with the annual production plan.

Ore output *(mt)*

Mining asset	2016	2017	2018	Mine type
Total ore mined	**7.62**	**7.64**	**7.90**	
Zhdanovskoye Deposit:	**6.77**	**6.81**	**7.14**	
Severny Mine	6.31	6.55	6.56	Underground
Severny Mine	0.46	0.26	0.58	Open-pit
Zapolyarnoye Deposit:	**0.14**	**0.14**	**0.08**	
Severny Mine	0.14	0.14	0.08	Underground
Kotselvaara and Semiletka Deposits:	**0.71**	**0.70**	**0.68**	
Kaula-Kotselvaara mine	0.71	0.70	0.68	Underground



CONCENTRATION (Kola MMC)

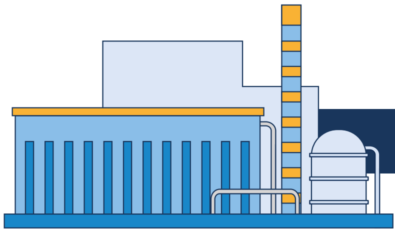
Concentration facilities

- Zapolyarny Concentrator.

The Concentrator produces briquetted copper-nickel concentrate. Briquettes are delivered to Smelting Shop to produce converter matte.

2018 milestones

In 2018, Kola MMC's Concentrator processed 7.9 mt of ore, up 0.3 mt y-o-y. In 2018, the rate of metals recovery in bulk concentrate was below the 2017 level due to the higher share of complex morphology ores with disseminated sulphide minerals in the charge.



SMELTING (Kola MMC)

2018 milestones

In 2018, Kola MMC produced more nickel and copper than in the previous year thanks to the extension of its carbonyl capacities and supply of richer copper concentrate from Polar Division. Decreased PGM output in 2018 was due to eliminated low-margin processing of third-party feedstock and accumulated work-in-progress inventories with a high degree of readiness at Krasnoyarsk Precious Metals Refinery engaged in precious metals refining under a tolling agreement.

Smelting facilities

- Smelting Shop (Nickel)
- Briquetting section (Zapolyarny)
- Metallurgical Shop (Monchegorsk)
- Refining Shop (Monchegorsk)
- Tankhouses 1 and 2 (Monchegorsk)

The Company is upgrading Tankhouse 2 to create a nickel cathode production unit harnessing the technology of nickel electrowinning from chlorine dissolved tube furnace nickel powder. The project is set to boost the Company's production capacity from 120 ktpa to 145 ktpa of electrolytic nickel while also improving the recovery rates by 1%. In late 2018, Norilsk Nickel commissioned the first series of electrolysis cells, with the project expected to reach its design capacity by the end of 2019.

Metals output

Metal	2016	2017	2018
Nickel, kt	**131,235**	**157,396**	**158,005**
from own Russian feed	126,937	155,110	157,519
Copper, kt	**70,272**	**80,781**	**83,070**
from own Russian feed	63,542	78,587	82,987
Palladium, koz	**851**	**1,782**	**1,684**
from own Russian feed	815	1,737	1,684
Platinum, koz	**173**	**401**	**382**
from own Russian feed	159	385	382

Product offering:

- nickel cathodes;
- nickel carbonyl;
- saleable nickel concentrate;
- copper cathodes;
- electrolytic cobalt;
- cobalt concentrate;
- precious metal concentrates;
- sulphuric acid;
- crushed converter matte for Harjavalta;
- copper concentrate for sale.

ZABAYKALSKY KRAY
(GRK Bystrinskoye)

GRK Bystrinskoye (Bystrinsky GOK) is the Company's 50.01% subsidiary.

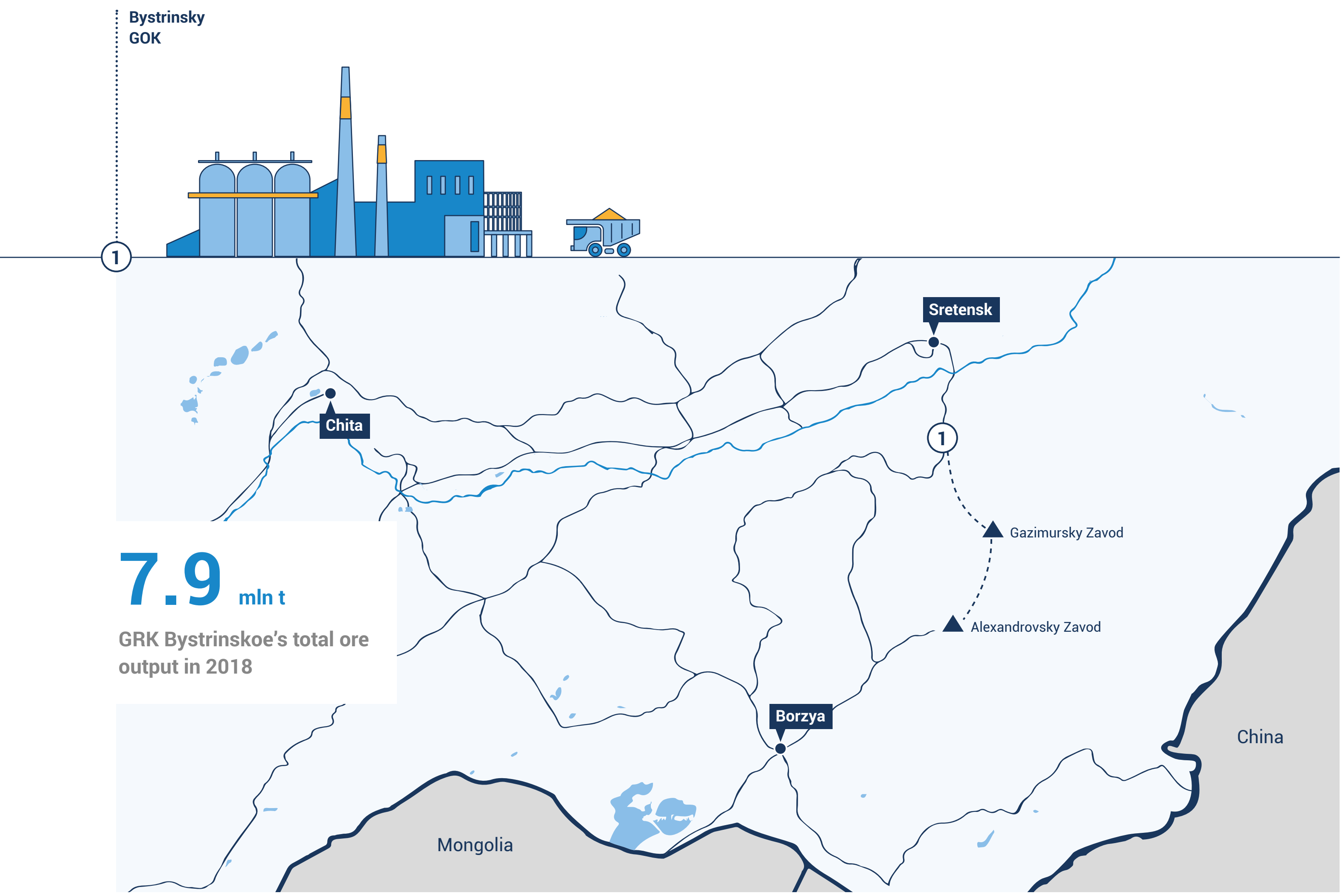
This new Nornickel asset is the largest greenfield project in the Russian metals industry, covering ore mining, concentration and shipment of end products to customers. The volume of ore mined and processed at Bystrinsky GOK is approximately 10 mtpa.

The construction of Bystrinsky GOK started in 2013. In October 2017, the Company embarked on the pre-commissioning phase, with the project expected to reach its design capacity after 2020. Bystrinsky GOK is located in the Gazimuro-Zavodsky District of the Zabaykalsky Kray, south-east of Gazimursky Zavod in the Ildikan valley (350 km from Chita). The closest residential areas are Novoshirokinsky, 14 km north-east of the facility, and Gazimursky Zavod, a district capital 25 km to the north-west.

The Naryn – Gazimursky Zavod rail line was built to facilitate mining in the south-east of the Zabaykalsky Kray. In 2012, the railway became operational, allowing for traffic to Gazimursky Zavod.

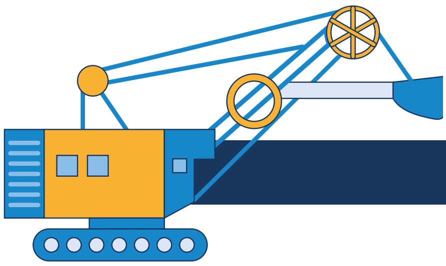
2018 milestone

In 2018, Bystrinsky GOK accounted for 4% of the Group's total copper end products.



7.9 mln t

GRK Bystrinskoe's total ore output in 2018

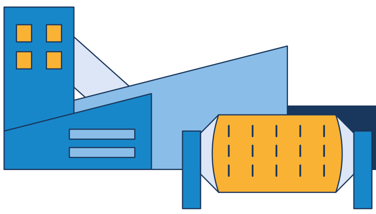


MINING (GRK Bystrinskoye)

Bystrinsky GOK mines gold-iron-copper ores.

Ore output *(mt)*

Mining asset	2018	Mine type
Total ore mined	**7.86**	
Bystrinskoye Deposit	**7.86**	
Verkhneildikansky open pit mine	7.43	Open-pit
Bystrinsky-2 open pit mine	0.43	Open-pit



CONCENTRATION (GRK Bystrinskoye)

Concentration facilities

- Concentrator.

The construction began in 2015, with the Concentrator intended to process ores of the Bystrinskoye Deposit to produce copper, magnetite, and gold concentrates. The key processing stages include crushing, milling, flotation, thickening, filtration and packaging. The Concentrator is designed to have two separate processing streams, both of which were launched in 2018 as part of the pre-commissioning stage.

Copper and magnetite concentrates are sold to third parties, while gold concentrates are further processed at Polar Division.

Product offering:

- copper concentrate;
- gold concentrate;
- magnetite concentrate.

Concentration

Indicator	2018
Ore processing, mt	**3.8**
Copper concentrate, kt	**76.5**
Cu in concentrate, %	25.4
Magnetite concentrate, kt	**346.2**
Fe in concentrate, %	64.1
Gold concentrate, t	**92.4**
Au in gold concentrate, g/t	6,218

FINLAND
(NN Harjavalta)

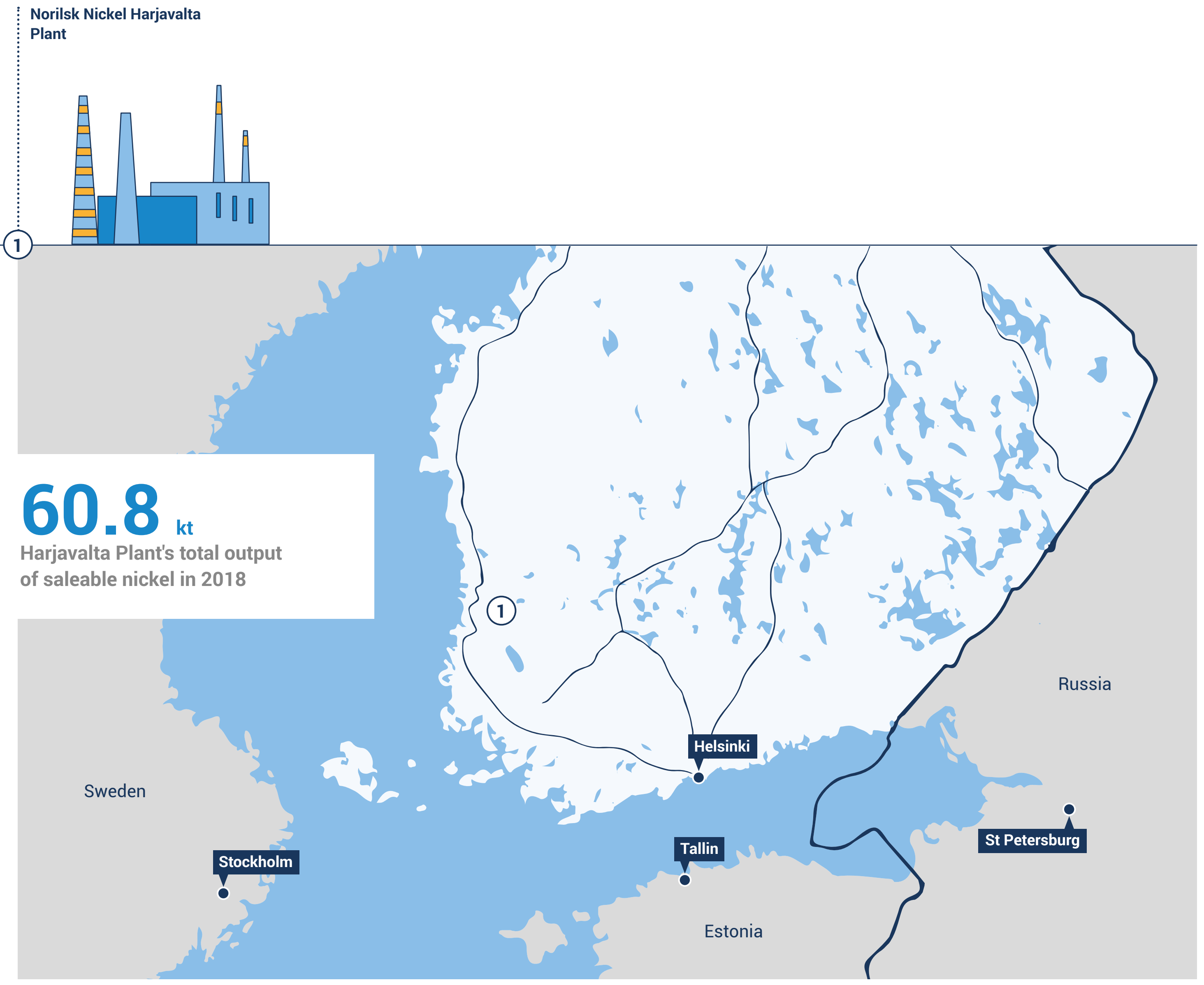
Norilsk Nickel Harjavalta became part of the Group in 2007. The Harjavalta facility processes the Company's Russian feedstock and nickel-bearing raw materials sourced from third-party suppliers.

Founded in 1960, Norilsk Nickel Harjavalta is the only nickel refinery in Finland and one of the largest such facilities in Europe. It has a total capacity to produce 66 ktpa of nickel products.

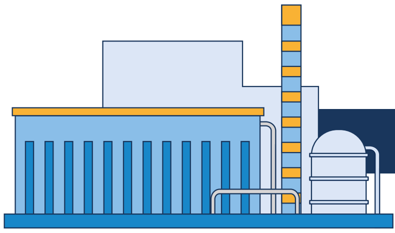
The facility uses sulphuric acid leaching, the best-in-industry global solution with the metal recovery rates of above 98%.

2018 milestone

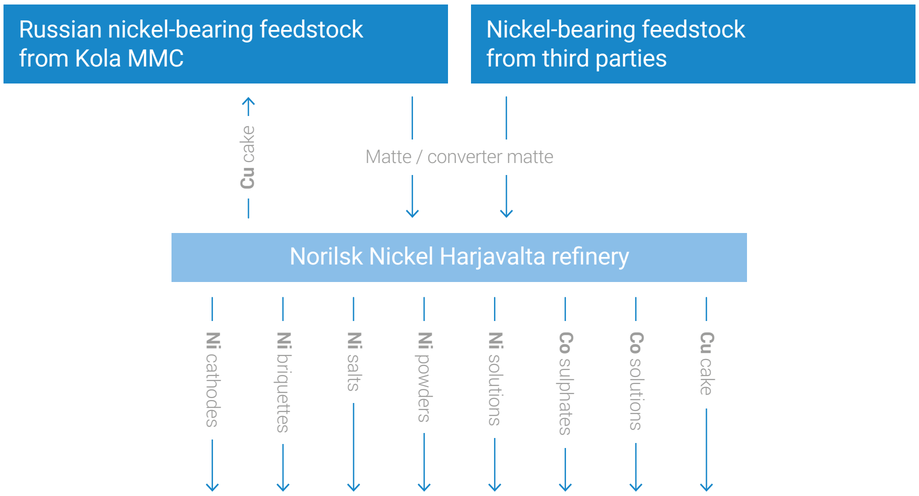
In 2018, Norilsk Nickel Harjavalta accounted for 28%, 4% and 2% of the Group's total nickel, copper and PGM end products, respectively.



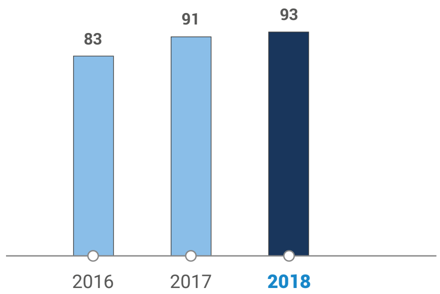
60.8 kt
Harjavalta Plant's total output of saleable nickel in 2018



SMELTING (NN Harjavalta)



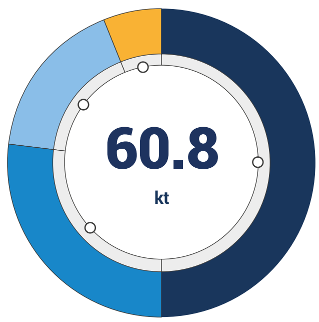
Refining capacity utilisation *(%)*



In 2018, the refining facilities in Monchegorsk were gradually increasing their nickel feedstock supplies to Norilsk Nickel Harjavalta in line with the Group's downstream facilities reconfiguration strategy. One-off and insignificant supplies of third-party feedstock, namely converter matte from Boliden Harjavalta (Finland), were sourced in Q2 and Q3 only, while nickel salts from other companies were sourced throughout 2018. Platinum and palladium recovery rates improved on the back of a drop in losses with ferrous cakes.

In 2018, Norilsk Nickel Harjavalta produced 60.8 kt of saleable nickel (up 2% y-o-y), hitting its all-time high. The growth was driven by the reconfiguration of refining facilities and increased nickel feedstock supplies from Kola MMC. The production of copper in copper cake totalled 18.0 kt, up 34% y-o-y. This growth was due to increased processing of Russian feedstock as part of the production reconfiguration exercise and using-up of the work-in-progress inventories. The production of saleable palladium and platinum in copper cake increased by 38% and 10% y-o-y, respectively. This was due to higher processing volumes of Russian feedstock and using-up of the work-in-progress inventories.

Saleable nickel output by product in 2018 *(%)*



Briquettes	50
Cathodes	27
Chemicals and solutions	17
Powders	6

Metals output

Metal	2016	2017	2018
Saleable nickel, kt	**53.65**	**59.72**	**60.77**
from own Russian feed	19.01	55.02	59.34
Copper in copper cake, kt	**9.60**	**13.44**	**18.04**
from own Russian feed	0.59	12.33	17.98
Palladium in copper cake, koz	**64**	**42**	**58**
from own Russian feed	8	35	58
Platinum in copper cake, koz	**22**	**10**	**11**
from own Russian feed	2	6	11

Product offering:

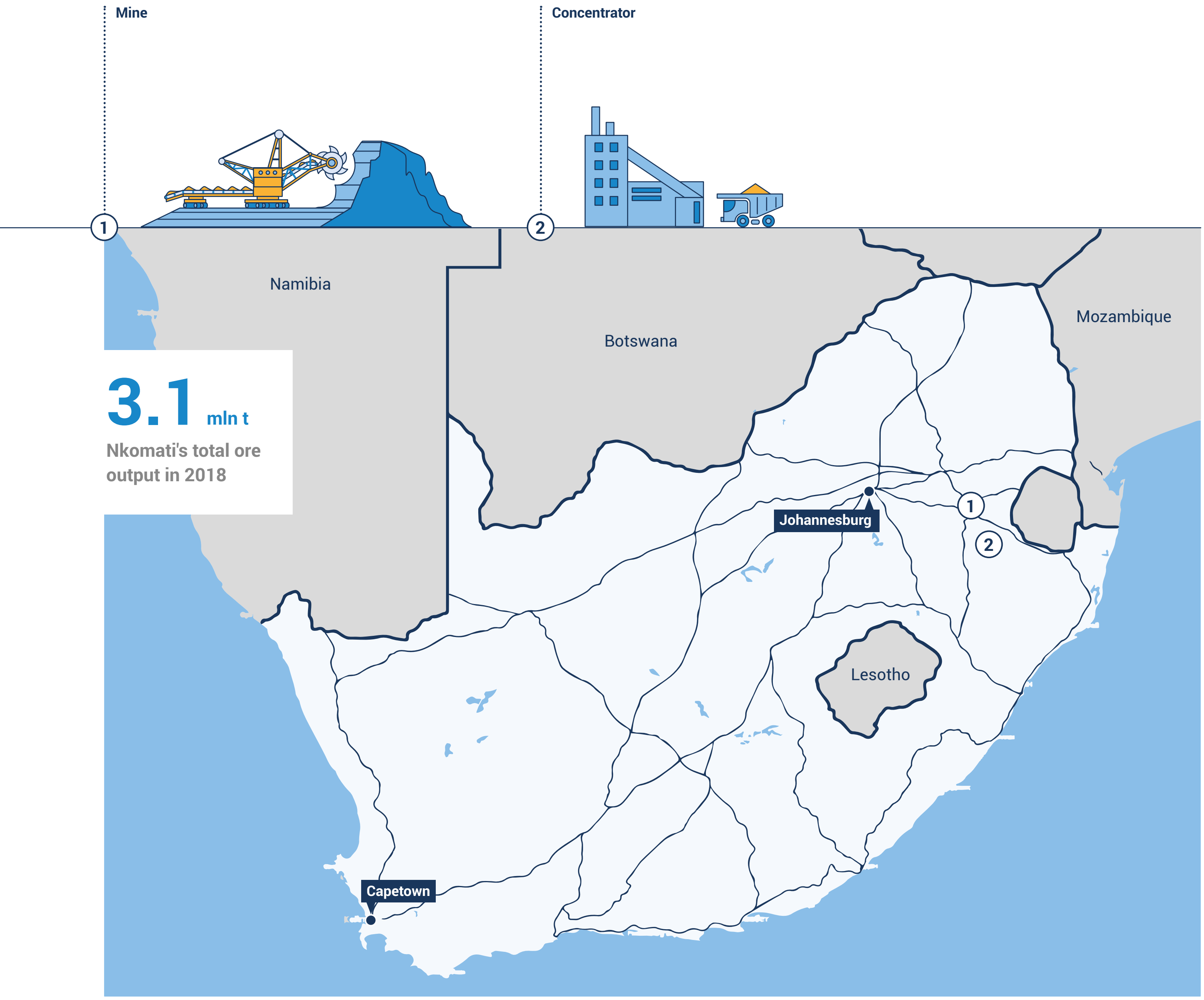
- nickel cathodes and briquettes;
- nickel salts, powdersand solutions
- cobalt sulphate;
- cobalt solutions;
- PGM-bearing copper cake.

SOUTH AFRICA
(Nkomati)

Nkomati is a 50/50 joint venture of the Norilsk Nickel Group and African Rainbow Minerals. Nkomati's performance is reflected in financial results using proportional consolidation according to our stake.

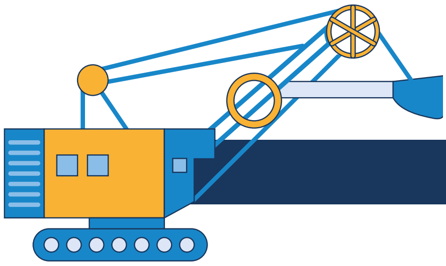
Nkomati is located in Mpumalanga Province, South Africa, 300 km east of Johannesburg.

It is the only South African company to produce nickel concentrate, which also contains copper, cobalt, chromium and PGM.



3.1 mln t

Nkomati's total ore output in 2018

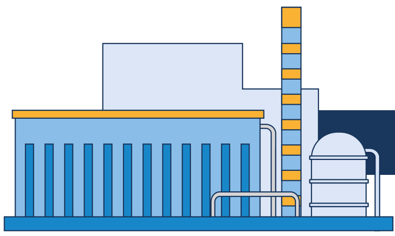


MINING (Nkomati)

Nkomati has a substantial resource base represented by disseminated copper-nickel sulphide ores. The Main Mineral Zone (MMZ) is comprised of a solid sulphide ore body with a relatively high nickel content. The Nkomati Deposit also contains a Peridotite Chromite Mineralisation Zone (PCMZ) with a lower metal content vs MMZ and a relatively high chromium content.

2018 milestone

In 2018, total ore mined by Nkomati reached 3.1 mt (attributable to the Group's 50% shareholding) with an average nickel content of 0.27%.



CONCENTRATION AND SMELTING (Nkomati)

2018 milestones

In 2018, Nkomati produced 7 kt of nickel (down 18% y-o-y), 3 kt of copper (down 32% y-o-y), 33 koz of palladium (down 28% y-o-y), and 13 koz of platinum (down 35% y-o-y) (attributable to the Group's 50% shareholding). The drop was due to the processing of off-balance ores with lower metal content and temporary suspension of operations due to strikes by the contractors' employees.

Concentration facilities

- MMZ Concentrator with installed capacity of 375 ktpm.
- PCMZ Concentrator with installed capacity of 250 ktpm.

The feedstock produced by open-pit and underground mines is processed at concentrators using the sulphide floatation technology. The facility's concentrates are then further sold by third-party companies.

Metals output[1]

Metal	2016	2017	2018
Nickel, kt	8.5	8.0	6.6
Copper, kt	4.0	4.5	3.1
Palladium, koz	40	46	33
Platinum, koz	15	20	13

[1] *Volumes based on the 50% ownership.*

PRODUCTS AND DISTRIBUTION

PRODUCT RANGE

In 2018, Nornickel maintained its reputation as a reliable supplier of high quality products. The integrated index of customer satisfaction with the Company's products and services matched the criterion for positive performance.

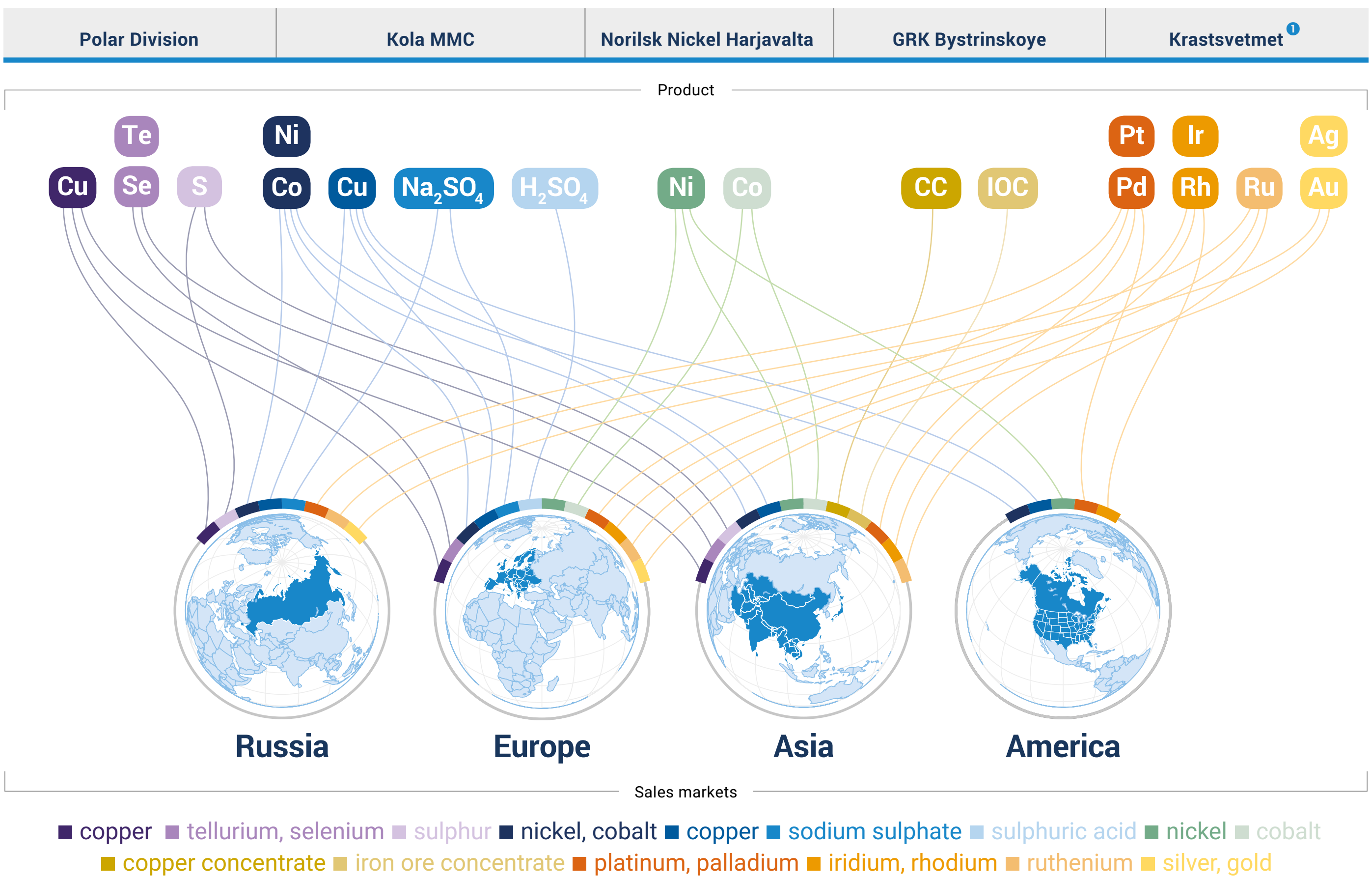
One of the Company's objectives is to make sure its product range is in line with the current and prospective global metals demand.

The Company views value-added products containing nickel and cobalt for the battery segment as a promising focus area for expanding the product range and ramping up production. Nornickel is holding discussions with potential partners in the battery market to expand its product offering.

Norilsk Nickel Harjavalta is considered one of world's foremost producers of nickel used to make precursors (semi-products essential for manufacturing the cathode material that forms part of batteries). Norilsk Nickel Harjavalta's nickel and cobalt sulphates are considered the industry benchmark and are widely used in battery manufacturing. Norilsk Nickel Harjavalta is uniquely flexible when it comes to manufacturing, which enables it to factor in consumer preferences in developing its product portfolio.

In response to strong growth of demand by battery manufacturers, the Company is upgrading its nickel powder packaging capacities in order to broaden the range of packages and create individual solutions based on consumer preferences.

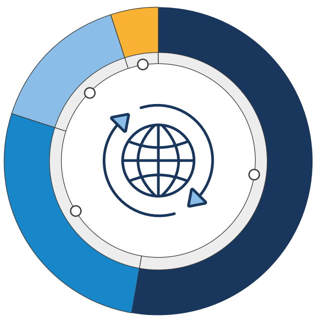
End product production



[1] *100% of shares are owned by the government. Precious metals are refined from raw materials produced by Polar Division and Kola MMC under a tolling agreement.*

SALES STRATEGY

Sales by region *(%)*



Europe	53
Asia	27
North and South America	15
Russia and CIS	5

In 2018, nickel sales to segments other than stainless steel production stood at

120 kt

The Company supplies its products to

34 countries

In 2017–2018, Global Palladium Fund supplied the market with more than

1 moz of palladium

Sales, along with production, have traditionally been a key value adding line of Nornickel's business.

When it comes to nickel products, the sales strategy focuses on achieving a balance between supplies to stainless steel manufacturers and to other industries.

Norilsk Nickel has been committed to diversifying nickel sales by applications and continues increasing nickel supplies to sectors other than stainless steel. Since 2014, we have ramped up sales to non-steel industries by 50% to 120 ktpa in 2018.

The Company is running a program to support prospective nickel applications, primarily in the battery sector. Norilsk Nickel is uniquely positioned to supply a wide range of products used in battery component manufacturing. With its own global sales network, vast cooperation experience with car makers and chemical companies, and active efforts to engage new major industry players, the Company has capabilities to become a key member in the battery components value chain.

In the battery segment, the Company is set to support the electric vehicles market and related value chains, build long-term partnerships with key industry players, and expand the market and its accessibility for nickel and cobalt products. The sales team is closely monitoring changes in the technical requirements for nickel and cobalt products in the sector. The Company is actively engaging major players in the car battery segment, as evidenced by the agreement with BASF.

In the sector of alloys and special steels, we seek to maximise the application of our products and improve product quality to boost our share in premium segments.

In the electroplating sector, Nornickel is optimising its product offering to better meet customer needs and acquire new clients in China and other markets.

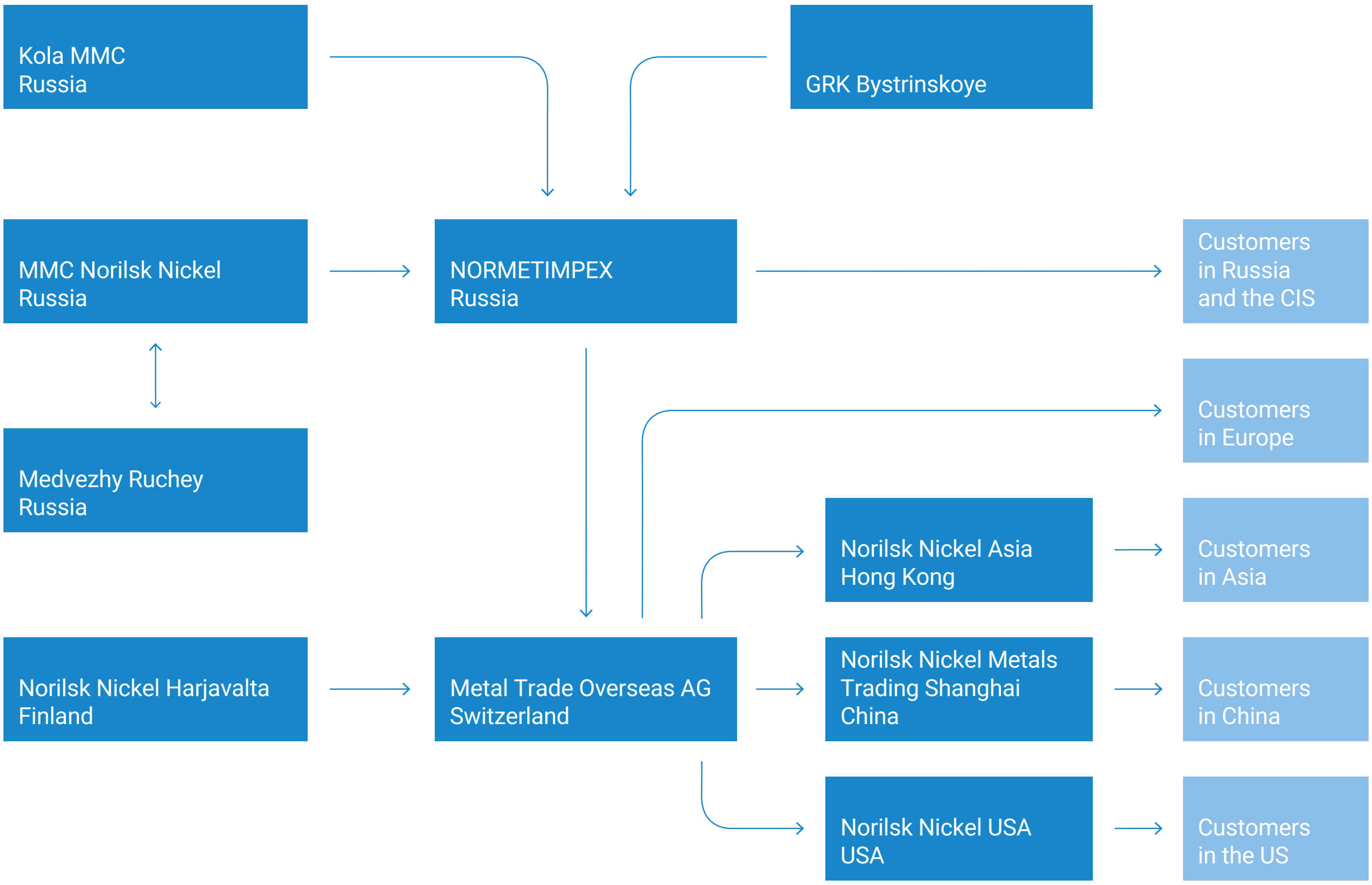
As the world's largest producer of palladium, the Company continues to implement the strategy of entering into direct long-term contracts with end consumers to ensure sustainable and strong demand for platinum group metals.

One of Nornickel's priorities is stable supply amid the growing demand for PGM. The Company positions itself as the palladium market leader, focusing on launching new mining projects to ensure that the palladium market is balanced in the long term. In 2016, the Company established the Global Palladium Fund (GPF) to guarantee stable supplies in the medium term. In 2017–2018, Nornickel's Global Palladium Fund (GPF) supplied the market with more than 1 moz of palladium on top of its own output – to industrial buyers (primarily from the automotive sector).

The Company supplies its products to 34 countries.

To boost sales premiums and improve liquidity, Norilsk Nickel registers its products on the world's major exchanges, including the London Metal Exchange and Shanghai Futures Exchange.

Company sales



PARTNERSHIP WITH BASF

In October 2018, BASF and Nornickel signed an agreement to create the first integrated platform for manufacturing battery components in Europe to meet the growing demand for electric vehicle (EV) battery components.

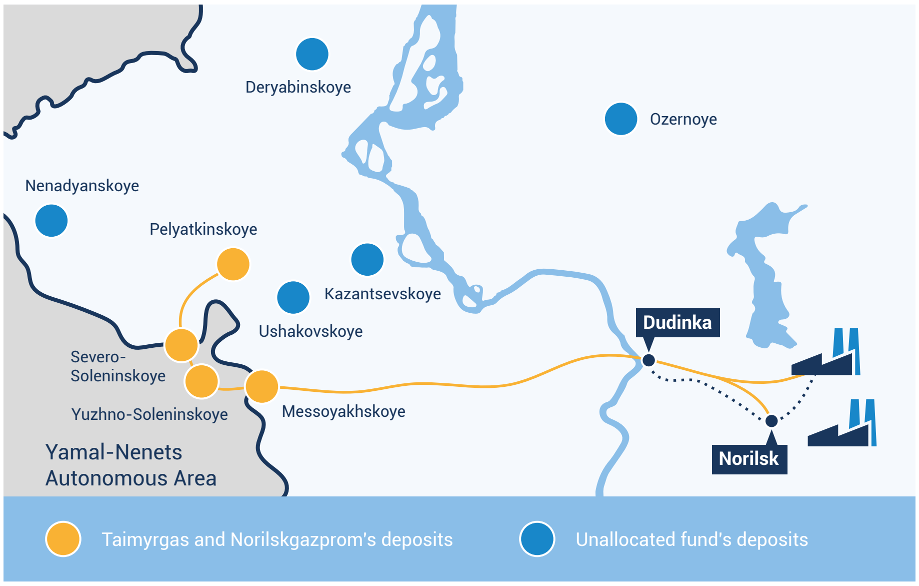
Under the agreement, Nornickel's nickel refining plant in Harjavalta will supply nickel and cobalt feedstock to a BASF cathode materials facility to be built adjacent to Nornickel's site. The facility is expected to come on stream by the end 2020 with the capacity to produce battery components for some 300,000 EVs per year. Cathode materials with high nickel content are the key components responsible for higher battery energy capacity and EVs' increased useful life.

The agreement with BASF is in line with Nornickel's strategy to boost the Company's share in the global battery component market and set up long-term partnership arrangements with major cathode producers. Collaboration with BASF will help Nornickel to solidify its global leadership in nickel and cobalt production and offer customers the best product in the most convenient form.

Electric vehicles can transform the global nickel industry. As the world's leading supplier of high-grade nickel, Nornickel is uniquely positioned to contribute to this change. The project also fits well in European and worldwide efforts to support green economy, contributing to which the Company reaffirms its commitment to sustainable use of resources and its status as a responsible participant in the materials supply chain globally.

Norilsk Nickel Harjavalta is a unique production site well-suited for vertically integrated production of battery precursors in the European market. Local production of precursor materials will support the industry's development in Europe, with the growing regional supply chain helping to mitigate logistical risks for battery manufacturers and car makers.

ENERGY ASSETS



Most of Nornickel's production sites are located beyond the Arctic Circle with sub-zero temperatures during eight months of the year. It is therefore critical for the Group to ensure reliable and high-quality energy supplies to its production and infrastructure facilities and communities in the regions where it operates. The Company owns an integrated network of fuel and energy assets.

4 hydrocarbon deposits

2,896 mcm natural gas production

90 kt gas condensate production[1]

43.6% electricity generated from renewable sources

Taimyrgaz *(100% stake)*

Upstream

Pelyatkinskoye Deposit
- Start of production: 2003
- Gas reserves: 127 bcm
- Gas condensate reserves: 3,608 kt
- Gas output in 2018*: 2 bcm
- Gas condensate output in 2018[1] — 88 kt

Norilskgazprom *(100% stake)*

Upstream

Severo-Soleninskoye, Yuzhno-Soleninskoye and Messoyakhskoye deposits
- Start of production: 1969
- Gas reserves: 115 bcm
- Gas condensate reserves: 1,081 kt
- Gas output in 2018*: 869 mcm
- Gas condensate output in 2018[1] — 2 kt

Production

Asset	2016	2017	2018
Natural gas, mcm	**3,402**	**3,014**	**2,896**
Taimyrgaz	2,408	2,086	2,027
Norilskgazprom	944	928	869
Gas condensate, kt[1]	**115**	**100**	**90**
Taimyrgaz	113	98	88
Norilskgazprom	2	2	2

[1] *Data on gas condensate production include production losses (carryover with separation gas).*

Norilsktransgaz *(100% stake)*
transports natural gas and condensate to consumers in the Norilsk Industrial District.

Transportation

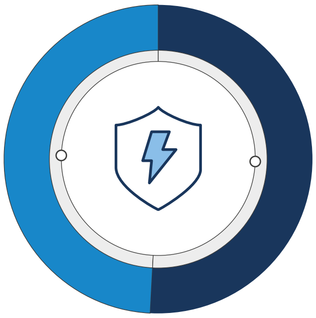
Gas and gas condensate pipelines from Pelyatkinskoye to Severo-Soleninskoye deposits

- Commissioned: 2003
- Length: 170.7 km

Gas and gas condensate pipelines from Severo-Soleninskoye Deposit to Norilsk/Dudinka

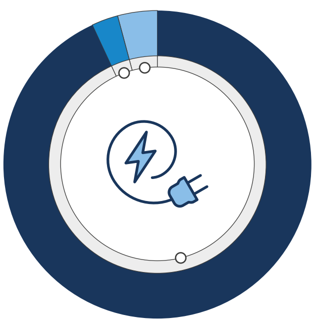
- Commissioned in: 1971
- Length: 1,418.1 km

Power generation breakdown in the Norilsk Industrial District in 2018 *(%)*



Renewable energy sources (hydropower)	51
Hydrocarbons (natural gas)	49

Arctic-Energo electricity sales breakdown in 2018 *(%)*



Kola MMC	95
Monchegorsk residents	2
Other	3

Norilsk-Taimyr Energy Company or NTEK *(100% stake)*
is responsible for power and heat generation, transmission and sales harnessing the assets of Norilskenergo (MMC Norilsk Nickel's branch) and Taimyrenergo. The energy sources include renewables (hydropower) and gaseous hydrocarbons (natural gas).

NTEK supplies electric power, heat and water to the city of Norilsk and all facilities of the Norilsk Industrial District. In terms of its location and operational mode, the local power grid is isolated from the national grid (Unified Energy System of Russia), which means stricter reliability requirements. NTEK operates five generating facilities – three thermal power plants with installed electricity generation capacity of 1,081 MW, and two hydropower plants with total installed capacity of 1,080 MW. Total installed capacity of all the plants is 2,271 MW.

Ust-Khantayskaya and Kureyskaya HPPs (481 MW and 600 MW of installed capacity, respectively) are the Company's two renewable power generation facilities.

In 2018, renewables accounted for 43.6% of total power consumed by the Group and 51.4% of power consumption in the Norilsk Industrial District.

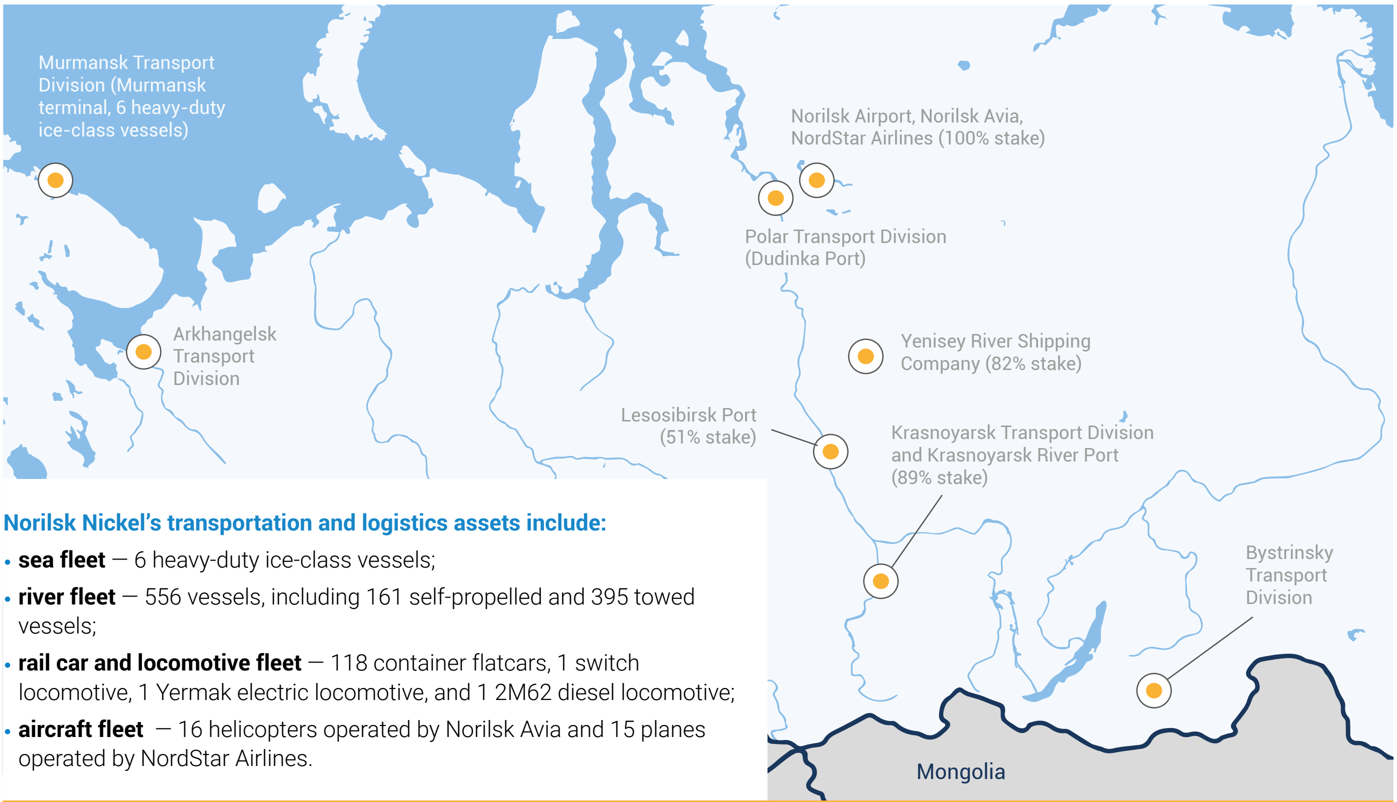
The Group's investment programme embraces several large-scale priority projects to fully unlock the potential of renewable power sources and ensure energy savings. In 2018, the Company's spending under the programme totalled ca. USD 97 mln (RUB 6.1 bn).

Major projects include:

- replacement of hydroelectric units and introduction of an automated dispatch system at Ust-Khantayskaya HPP;
- increase of installed generating and transformer capacities;
- TPP-1 retrofit to enable automated process control;
- replacement of wooden supports at 110 kV lines with steel ones.

Arctic-Energo *(100% stake)*
is a default provider ensuring an efficient and uninterrupted electricity supply at minimum prices to Kola MMC operations. In 2018, it sold 2,711,767 thousand kWh of energy.

TRANSPORTATION ASSETS



Norilsk Nickel's transportation and logistics assets include:

- **sea fleet** — 6 heavy-duty ice-class vessels;
- **river fleet** — 556 vessels, including 161 self-propelled and 395 towed vessels;
- **rail car and locomotive fleet** — 118 container flatcars, 1 switch locomotive, 1 Yermak electric locomotive, and 1 2M62 diesel locomotive;
- **aircraft fleet** — 16 helicopters operated by Norilsk Avia and 15 planes operated by NordStar Airlines.

Nornickel owns modern transport infrastructure to successfully respond to any freight logistics challenges and ensure continuity and sustainability of operations. The Company's transportation and logistics assets embrace the full range of transportation and freight forwarding services.

Freight shipping services

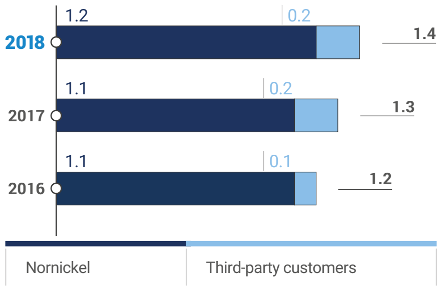
Nornickel has a unique Arctic fleet comprising five dry cargo vessels and one Yenisey heavy-duty ice-class tanker (ARC 7 under the classification of the Russian Maritime Register of Shipping). The vessels are capable of breaking through Arctic ice up to 1.5 m thick without icebreaker support. The Yenisey tanker is used to transport gas condensate from the Pelyatkinskoye Gas Condensate Deposit to European ports and other destinations.

The Company's dry cargo fleet provides year-round freight shipping services between Dudinka, Murmansk, Arkhangelsk, Rotterdam, and Hamburg sea ports while also covering other destinations.

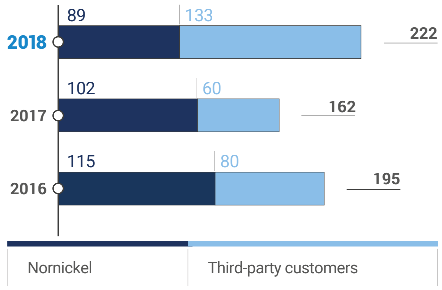
2018 milestones

In 2018, 66 voyages were made from Dudinka (flat y-o-y), including 10 direct voyages to European ports (vs 12 voyages in 2017).

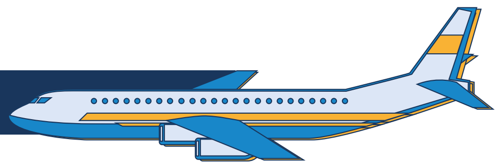
Dry cargo transportation by the Company's fleet *(mt)*



Transportation by Yenisey tanker *(kt)*



Air transportation services



NORILSK AVIA

Norilsk Avia serves the transportation needs of local communities in the Norilsk and Taimyrsky Dolgano-Nenetsky districts of the Krasnoyarsk Territory. The company provides air services related to the operations of the Norilsk Nickel Group, emergency air medical assistance, search-and-rescue operations, and local passenger traffic.

NordStar

NordStar Airlines is a rapidly developing aviation project launched in 2008. Its fleet comprises 15 aircraft. In 2018, for the second year running, NordStar Airlines successfully passed the IATA Operational Safety Audit and was added to the IOSA Registry.

With passenger traffic in excess of 1 million people per year, NordStar Airlines annually reaffirms its status of a major air carrier in the Siberian Federal District and nationwide. The air company's current route network covers over 30 cities in Russia and the CIS. In the reporting year, it carried over 110,000 residents of the Norilsk Industrial District during the third stage of the Norilsk Airport reconstruction.

НОРИЛЬСК
аэропорт АЛЫКЕЛЬ

Located 36 km away from Norilsk, **Airport** plays an essential role in ensuring the region's transport accessibility as it connects the north of the Krasnoyarsk Territory with other Russian regions.

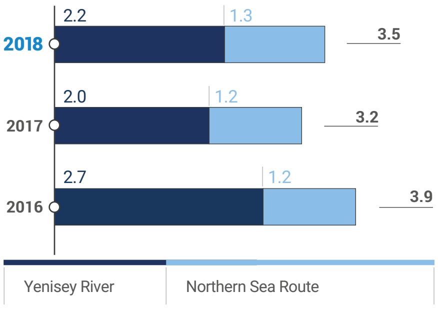
The airport kept servicing passengers throughout the entire period of the runway reconstruction completed in 2018.

The project was implemented as part of a public-private partnership formalised by an agreement signed between the Federal Air Transport Agency and Nornickel. This was the first of its kind initiative both in Russia and internationally, with the project delivered on schedule and to the highest quality requirements.

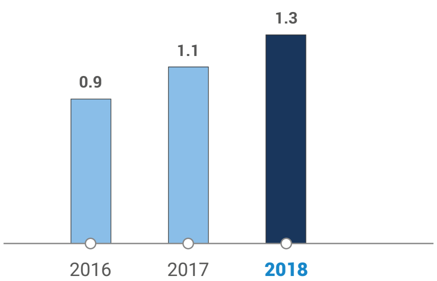
The new 2,821 ×45 m runway is fully compliant with all the certification standards. The project also saw the upgrade of two taxiways and partial repairs of the concrete pavement in the apron for civil aircraft.

Transport divisions and ports

Waterway cargo traffic at Dudinka port *(mt)*



Waterway cargo traffic at Murmansk terminal *(mt)*



Polar Transport Division and Dudinka Port are the key industrial facilities of Dudinka. Dudinka Port is the world's only port that gets flooded every year during the spring thaw and is accessible to sea and river vessels alike.

Located in the Far North, the port operates a seasonal service. From November to May when its water area and the Yenisey basin freeze over, Dudinka Port handles only sea vessels using icebreakers to de-ice the berths and provide support during manoeuvring and mooring operations. In May and June, during the flooding, the service is suspended to be resumed for river and sea vessels when ice flows pass and the water level goes down.

Dudinka Port is an essential link in the Company's production and supply chain: it tranships cargoes for the Norilsk Industrial District and Taimyr Peninsula, including goods for local residents (except for perishables and mail). In summer, river vessels deliver equipment and materials (sand, round timber, clinker, etc.) for process needs from Krasnoyarsk and Lesosibirsk, and sulphur to Krasnoyarsk. Throughout the year, including in winter months, sea vessels ship metal products and converter matte from Dudinka for further processing at Kola MMC.

Polar Transport Division carries out port operations using its own fleet of a river-class icebreaker, towboats, motorboats, a bunker barge, and a floating crane. To reduce its environmental footprint, the division runs programmes to cut fuel consumption and prevent pollution of the Dudinka and Yenisey Rivers, while also investing in bioresource reproduction (release of fingerlings).

The year-round ice-free sea port of Murmansk is home to Nornickel's **Murmansk Transport Division**. With berth 2 put into operation in March 2017, the division's design cargo traffic capacity increased to 1.5 mtpa. The terminal reconstruction exercise included initiatives to repair the damage caused to aquatic bioresources.

Murmansk Transport Division's key functions are shipment of the Company's finished metal products from Murmansk to European ports, receipt of converter matte from Dudinka and its shipment by rail to Kola MMC, and delivery of empty containers, equipment and materials to Dudinka. In addition to sea transportation, Murmansk Transportation Division is engaged in freight forwarding, transhipment and storage of cargoes, and rail transportation between Murmansk and Monchegorsk.

The division's shipping department complies with international maritime conventions by ensuring environmentally friendly and safe sea transportation, with the vessels undergoing regular repairs and safety inspections.

Arkhangelsk Transport Division (Arkhangelsk) provides for a year-round transhipment of Nornickel's cargo via

Arkhangelsk sea port, which is conveniently linked to other Russian and foreign regions by road, air and rail.

Krasnoyarsk Transport Division coordinates operations at Krasnoyarsk and Lesosibirsk ports and Yenisey River Shipping Company, which operate on a seasonal basis due to the Yenisey River getting frozen in winter. When ice flows pass, the Group uses the ports to tranship cargoes to Dudinka, including crushed granite, clinker, materials, equipment and socially significant cargoes (as part of the Northern Supply Haul programme). Krasnoyarsk Transport Division engages in initiatives to reduce fuel consumption and prevent processing of lump sulphur within Krasnoyarsk.

The bulk of the Group's and third-party cargo is transported along the **Yenisey by Yenisey River Shipping Company,** which owns a sizeable fleet of over 500 river vessels, including self-propelled and towed ones. The fleet operates in the Yenisey, Angara, Nizhnyaya and Podkamennaya Tunguska Rivers and their largest tributaries.

One of the largest Yenisey ports, **Krasnoyarsk River Port** tranships cargo delivered by road, rail and water transport, provides storage services and transports cargo using private railway lines. The port has three operating areas – Yenisey, Zlobino and Peschanka.

Lesosibirsk Port operates in the port of Lesosibirsk located 40 km down from the confluence of the Angara and Yenisey Rivers and below the rapids that are hard to navigate. This secures the delivery of the Group's cargo in case of low water on the Yenisey and high vessel utilisation rates. The port boasts the following unique advantages:

- it is the only dedicated port on the Yenisey River that can process and, if required, store explosives;
- it offers year-round service (rail-road and road-rail transhipment services in between the navigation periods);
- it has access to the Baikal (M53) federal highway via the Krasnoyarsk-Yeniseysk Highway;
- the railway to Achinsk connects Lesosibirsk and the Trans-Siberian Railway.

In late 2017, MMC Norilsk Nickel's Board of Directors decided to establish **Bystrinsky Transport Division** to deliver products from, and supplies to, Bystrinsky GOK. Since 2018, Bystrinsky Transport Division has been carrying out maintenance of the 227 km Naryn (Borzya) – Gazimursky Zavod private railway line built under a public private partnership.

A decrease in total expenses y-o-y is due to lower costs of constructing a berth at Murmansk Transport Division. Most works were completed in 2016–2017, with the berth put into operation in March 2017.

A major increase in other expenses in 2018 is attributable to scheduled repairs of four Murmansk Transport Division sea vessels. On top of that, the reporting year saw the Company complete scheduled repairs of vessels and overhauls of several berths, install security systems, upgrade the communications systems and introduce fuel consumption controls.

Investments in transportation and logistics assets

	2016		2017		2018	
Cost item	USD mln	RUB bn	USD mln	RUB bn	USD mln	RUB bn
TOTAL	**34.3**	**2.3**	**46.2**	**2.7**	**35.1**	**2.2**
Capital construction	17.9	1.2	22.2	6.4	7.1	0.4
Purchase of equipment	10.4	0.7	15.4	0.9	12.8	0.8
Other costs	6.0	0.4	8.6	0.5	15.9	1.0

INNOVATIONS

2018 milestones

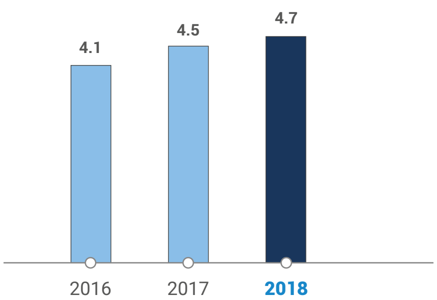
Nornickel is the only Russian company on Forbes' Top 100 Most Innovative Companies list.

Nornickel won the 16th National IT Leader Award 2018 in the Non-Ferrous Metallurgy category for introducing personnel and machinery positioning and radiocommunications systems at Zapolyarny Mine.

RESEARCH AND DEVELOPMENT

R&D plays a key role in implementing Nornickel's strategic priorities such as reducing the environmental impact, improving production efficiency and setting stage for the Company's sustainable development in medium and long run. Nornickel's main R&D facility is Gipronickel Institute. Part of the Norilsk Nickel Group, it is also one of Russia's largest research and engineering hubs for mining, concentration, metallurgy and processing of minerals that provides a wide range of research and technology services. In 2018, Nornickel's R&D activities mainly focused on research, technological development, and feasibility studies under the Company's updated strategic plan.

R&D and feasibility studies financing[1] *(USD mln)*



[1] *Excluding financing of key investing project.*

DIGITALISATION

Nornickel is actively embracing and applying information and digital technologies to streamline production processes. Since 2018, a digital laboratory within the Company's IT department is working on several dozen promising projects. Technologies introduced in 2018 include the digital vision to monitor short-circuiting of the cathode and anode in the tankhouse, digital twin to optimise the delivery of copper matte from smelting furnaces to converters, ore contaminant identifier to prevent foreign objects from getting into the concentrators' crushing machines, and the automated management system at Bystrinky GOK to control and collect online all the information on the underground mining equipment – from fuel consumption to cargo carried.

In 2015, the Company launched the Technology Breakthrough initiative to automate and digitalise most of key processes at its mining and processing facilities by 2020.

In 2018, Nornickel and Skolkovo Foundation signed a partnership agreement to set up Nornickel's digital lab within the Skolkovo Innovation Centre. The lab will track

2018 milestones

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The reporting year saw Kola MMC deploy advanced technologies – weak artificial intelligence and computer vision – for the first time in its history. For this purpose, the facility ran a pilot project to control product quality at its concentrator's briquetting section where copper-nickel ore concentrate is prepared for smelting.

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Artificial intelligence and computer vision

The reporting year saw Kola MMC deploy advanced technologies – weak artificial intelligence and computer vision – for the first time in its history. For this purpose, the facility ran a pilot project to control product quality at its concentrator's briquetting section where copper-nickel ore concentrate is prepared for smelting. Computer vision is one of the most rapidly growing and promising areas of artificial intelligence that allows computers to acquire, process, analyse and understand images of real-world objects to perform appropriate action. The company's computer vision system includes a video camera mounted above the finished product conveyor and three neural networks processing the video stream to analyse the quality of transported products and sort them accordingly. The data so collected is fed into a database, processed and sent to the concentrator's management in the form of images, charts, and tables in near-real time. It helps to analyse the production process, effectively control process parameters and adjust the product quality.

Industrial exoskeleton trials

Despite a high level of automation, processes at mining and metals facilities are still very labour-intensive. The exoskeleton can reduce load and improve safety. To experiment with the new technology, Polar Division ran a competition among its employees, inviting them to think of ways they could use the industrial exoskeleton at work. The proposed applications included scrap metal sorting and removal of cathode deposit build-up at the third recovery stage. The winners were the first in the history of Norilsk to test digital technology and take part in exoskeleton trials at the South-West State University in Kursk in March 2019.

Mine automation system

Nornickel installed personnel and machinery positioning and radiocommunications systems at Zapolyarny Mine. The automation system scans individual tags assigned to the employees and self-propelled machinery and maintains wireless connection with each employee via their personal phones. It also features an anti-collision technology informing the driver of getting close to the deployed staff or equipment. The staff or equipment location data is continuously transmitted to the control room ensuring real-time coordination of actions in case of emergencies.

FINANCIAL OVERVIEW (MD&A)

2018 HIGHLIGHTS

2018

Consolidated revenue increased 28% y-o-y to USD 11.7 billion on the back of improved metal prices, higher copper output and sale of palladium from earlier accumulated stocks.

EBITDA expanded 56% y-o-y to USD 6.2 billion owing to higher metal revenue, ramp-up of the Bystrinsky project and lower operating expenses driven by efficiency gains.

EBITDA margin reached 53%, a leading level among the global diversified metals and mining majors.

CAPEX decreased 22% y-o-y to USD 1.6 billion driven by completion of Bystrinsky project and downstream reconfiguration as well as optimization of investment schedules.

Net working capital decreased by almost USD 1.3 billion to USD 0.9 billion as a result of palladium destocking and optimization of capital structure.

Free cash flow increased to USD 4.9 billion.

Net debt/EBITDA ratio returned to 1.1x as of the end of 2018.

Cash interest paid decreased 14% to USD 551 million owing to optimization of debt portfolio despite rising market interest rates.

In October 2018, the Company **paid interim dividend for 1H2018 in the amount of RUB 776** (approximately USD 11.65) per ordinary share for the total amount of approximately USD 1.8 billion.

In January 2018, **Moody's rating agency raised Nornickel credit rating to the investment grade level, "Baa3", and changed the outlook from "Stable" to "Positive"**. As result, Nornickel got assigned **investment grade credit ratings** by all three major international rating agencies, including Fitch and S&P Global.

Recent developments

On February 12, 2019, Moody's upgraded the Company's credit rating to "Baa2" with a "Stable" outlook in the wake of raising Russia's sovereign ceiling for foreign currency debt to "Baa2" and upgrade of Russia's sovereign rating to investment grade level of "Baa3" with "Stable" outlook.

Key corporate highlights *(USD million, unless stated otherwise)*

Index	2017	2018	Change, %
Revenue	9,146	11,670	28
EBITDA[1]	3,995	6,231	56
EBITDA margin	44%	53%	9 p.p.
Net profit	2,123	3,059	44
Capital expenditures	2,002	1,553	-22
Free cash flow[2]	-173	4,931	n.a.
Net working capital[2]	2,149	867	-60
Net debt[2]	8,201	7,051	-14
Net debt, normalized for the purpose of dividend[3]	7,495	5,160	-31
Net debt/12M EBITDA	2.1x	1.1x	-1.0x
Net debt/12M EBITDA for dividends calculation	1.9x	0.8x	-1.1x
Dividends paid per share (USD)[4]	18.8	21.3	13

1. *A non-IFRS measure, for the calculation see the notes below.*
2. *A non-IFRS measure, for the calculation see an analytical review document ("Data book") available in conjunction with Consolidated IFRS Financial Results on the Company's web site.*
3. *Paid during the current period.*
4. *Normalized on interim dividends and deposits with maturity of more than 90 days.*

Key segmental highlights[1] *(USD million, unless stated otherwise)*

Index	2017	2018	Change, %
Revenue	**9,146**	**11,670**	**28**
GMK Group	7,447	9,742	31
KGMK Group	897	911	2
NN Harjavalta	840	1,026	22
GRK Bystrinskoye	15	8	-47
Other mining	128	108	-16
Other non-metallurgical	1,286	1,514	18
Eliminations	-1,467	-1,639	12
EBITDA	**3,995**	**6,231**	**56**
GMK Group	4,559	6,602	45
KGMK Group	182	190	4
NN Harjavalta	61	71	16
GRK Bystrinskoye	-65	96	n.a.
Other mining	-3	-6	100
Other non-metallurgical	18	50	3x
Eliminations	-34	-13	-62
Unallocated	-723	-759	5
EBITDA margin	**44%**	**53%**	**9 p.p.**
GMK Group	61%	68%	7 p.p.
KGMK Group	20%	21%	1 p.p.
NN Harjavalta	7%	7%	0 p.p.
GRK Bystrinskoye	n.a.	n.a.	n.a.
Other mining	-2%	-6%	-4 p.p.
Other non-metallurgical	1%	3%	2 p.p.

1. *Segments are defined in the consolidated financial statements.*

USD 9,742 mln

revenue of the GMK Group segment

USD 911 mln

revenue of the KGMK Group segment

USD 1,026 mln

revenue of Norilsk Nickel Harjavalta

USD 8 mln

revenue of the GRK Bystrinskoye segment

In 2018, revenue of Group GMK segment increased 31% to USD 9,742 million. This was primarily driven by higher realized metal prices, sales of palladium stock accumulated in 2017 and higher copper production volumes.

The revenue of Group KGMK segment increased 2% to USD 911 million. The main growth driver was higher realized metal prices, which was partly offset by lower revenue from tolling operations of Polar Division's feed due to depreciation of Russian rouble.

Revenue of NN Harjavalta increased 22% to USD 1,026 million mainly due to higher realized metal prices.

Revenue of GRK Bystrinskoye generated during the hot commissioning phase is included into other operating income and expenses.

Revenue of Other mining segment decreased 16% to USD 108 million mostly driven by lower Nkomati production volumes that was partly offset by higher realized metal prices.

Revenue of Other non-metallurgical segment increased 18% to USD 1,514 million owing to higher turnover of Palladium Fund.

In 2018, EBITDA of GMK Group segment increased 45% to USD 6,602 million owing primarily to higher revenue and depreciation of Russian rouble.

EBITDA of Group KGMK segment increased 4% to USD 190 million primarily owing to the increased revenue and lower cash costs due to depreciation of Russian rouble.

EBITDA of NN Harjavalta increased by USD 10 million to USD 71 million owing primarily to increased revenue.

EBITDA of GRK Bystrinskoye segment amounted to USD 96 million due to the revenue generated during the hot commissioning stage. In 2018, EBITDA of GRK Bystrinskoye segment also includes financial result from intersegment sales of concentrates.

EBITDA of Other non-metallurgical segment increased by USD 32 million to USD 50 million.

EBITDA of Unallocated segment decreased 5% to a negative USD 759 million. Higher selling, general and administrative expenses were partly offset by lower one-off social expenses.

USD 6,602 mln

EBITDA of the GMK Group segment

USD 190 mln

EBITDA of the KGMK Group segment

USD 71 mln

EBITDA of Norilsk Nickel Harjavalta

USD 96 mln

EBITDA of the GRK Bystrinskoye segment

Sales volume and revenue

Index	2017	2018	Change, %
Metal sales			
GROUP			
Nickel, thousand tons[1]	**216**	**217**	**0**
from own Russian feed	206	208	1
from 3d parties feed	9	2	-78
in semi-products[3]	1	7	7x
Copper, thousand tons[1,2]	**386**	**455**	**18**
from own Russian feed	365	431	18
from 3d parties feed	3	–	-100
in semi-products[3]	18	24	33
Palladium, koz[1]	**2,450**	**2,974**	**21**
from own Russian feed	2,353	2,913	24
from 3d parties feed	52	–	-100
in semi-products[3]	45	61	36
Platinum, koz[1]	**667**	**668**	**0**
from own Russian feed	639	657	3
from 3d parties feed	18	–	-100
in semi-products[3]	10	11	10
Average realized prices of refined metals produced by the Group			
Nickel (USD per tonne)	10,704	13,531	26
Copper (USD per tonne)	6,202	6,566	6
Palladium (USD per oz)	858	1,025	19
Platinum (USD per oz)	949	877	-8
Revenue[4] (USD million)			
Nickel	**2,416**	**3,013**	**25**
including semi-products	113	175	55
Copper	**2,422**	**2,977**	**23**
including semi-products	141	144	2
Palladium	**2,434**	**3,674**	**51**
including semi-products	87	98	13
Platinum	**654**	**596**	**-9**
including semi-products	31	20	-35
Other metals	**489**	**702**	**44**
including semi-products	52	55	6
Revenue from metal sales	**8,415**	**10,962**	**30**
Revenue from other sales	**731**	**708**	**-3**
TOTAL REVENUE	**9,146**	**11,670**	**28**

1. *All information is reported on the 100% basis, excluding sales of metals and semi-products purchased from third parties and Nkomati.*
2. *Excludes finish goods, produced by GRK “Bystynskoe”.*
3. *Metal volumes represent metals contained in semi-products.*
4. *Includes metals and semi-products purchased from third parties and Nkomati.*

REVENUE

Nickel

Nickel sales contributed 27% to the Group's total metal revenue in 2018 (vs 29% in 2017). The decrease by 2 p.p. was driven by an increase of copper and palladium sales volumes, which were partly offset by nickel price outperforming other metals' prices.

In 2018, nickel revenue increased 25% y-o-y (or by +USD 597 million) to USD 3,013 million primarily due to higher realized metal price.

The average realized price of refined nickel produced from own feed increased 26% to USD 13,531 per tonne in 2018 (vs USD 10,704 per tonne in 2017).

Sales volume of refined nickel produced from own Russian feed, increased by 1% (or +2 thousand tonnes) to 208 thousand tons.

Sales volume of nickel produced from third-party feed decreased 78% y-o-y to 2 thousand tonnes as Harjavalta reduced the processing volumes of third-party feed.

In 2018, sales of nickel in semi-products increased 55% y-o-y to USD 175 million primarily owing to higher sales volume of semi-products.

Copper

In 2018, copper sales accounted for 27% of the Group's total metal sales, increasing 23% (or +USD 555 million) y-o-y to USD 2,977 million primarily owing to higher sales volume (+USD 435 million) as well as higher realized price (+USD 120 million).

The average realized price of refined copper increased 6% from USD 6,202 per tonne in 2017 to USD 6,566 per tonne in 2018.

Physical volume of refined copper sales from the Company's own Russian feed increased 18% (or +66 thousand tons) to 431 thousand tons (excluding copper in concentrates, produced by GRK "Bystrinskoe") owing to higher copper production from concentrate purchased from Rostec.

Sales of refined copper, produced from third-party feed were completely ceased (reduction by 3 thousand tons).

Revenue from copper in semi-products in 2018 slightly increased 2% to USD 144 million.

Palladium

In 2018, palladium remained the largest contributor to the Group's total revenue, accounting for 34% (+ 5 p.p. y-o-y). Palladium revenue increased 51% (or +USD 1,240 million) to USD 3,674 million. The positive impact of higher sales volume (+USD 526 million) was amplified by increased realized price (+USD 406 million).

The average realized price of refined palladium produced from own feed increased 19% from USD 858 per troy ounce in 2017 to USD 1,025 per troy ounce in 2018.

Physical volume of refined palladium sales from the Company's own Russian feed in 2018 increased 24% (or +560 thousand troy ounces) to 2,913 thousand troy ounces. The increase in sales volume was driven by the sale of own metals from stock accumulated in the Company's Palladium Fund in 2017.

Refined palladium sales from third-party feed were completely ceased as processing of low-margin third-party feed was terminated in 2018.

Revenue of palladium in semi-products in 2018 increased by 13% to USD 98 million.

Additional USD 593 million to palladium revenue in 2018 was contributed by the resale of metal purchased from third parties (vs USD 285 million in 2017).

Platinum

In 2018, platinum sales (5% of the Group's total metal revenue) decreased 9% (or -USD 58 million) to USD 596 million following the decline of realized platinum price (-USD 51 million), which was exacerbated by lower sales volume (-USD 7 million).

Physical volume of refined platinum sales from the Company's own Russian feed in 2018 increased by 3% (or +18 thousand troy ounces) to 657 thousand troy ounces.

Revenue of platinum in semi-products in 2018 decreased 35% to USD 20 million primarily due to decrease of sales volume of platinum in purchased semi-products.

Other metals

In 2018, revenue from other metals increased 44% (+USD 213 million) to USD 702 million, primarily owing to higher revenue from cobalt (up 91%), rhodium (up 84%) and gold (up 11%).

OTHER SALES

In 2018, other sales decreased 3% to USD 708 million, primarily owing to Russian rouble depreciation (-USD 47 million). Revenue increase in real terms was primarily driven by increase in fuel and gas prices and higher revenue from services provided by transport subsidiaries of the Group to third parties.

Other sales *(USD million)*

Index	2017	2018	Change, %
Air transport	256	257	0
Fuel-power complex	175	178	2
Water transport	65	56	-14
Food retail	40	38	-5
Zapolyarye Health Resort	18	17	-6
Other	177	162	-8
TOTAL	**731**	**708**	**-3**

COST OF METAL SALES

Cost of metal sales

In 2018, the cost of metal sales increased 14% (or +USD 568 million) to USD 4,536 million. Main factors contributing to it were:

- Decrease in cash operating costs by 2% (or -USD 81 million);
- Increase in depreciation charges by 4% (or +USD 23 million);
- Change in metal inventories y-o-y primarily due to sales of palladium accumulated in 2017 (cost of metal sales increase by +USD 626 million).

Cash operating costs

In 2018, total cash operating costs decreased by 2% (or -USD 81 million) to USD 3,774 million.

The positive effect of Russian rouble depreciation (-USD 200 million) was partly offset by inflationary growth of cash operating costs by +USD 104 million.

Cost increase driven by the processing of Rostec concentrate (+USD 193 million) was partly offset by lower volumes of refined metals purchased for resale (-USD 100 million) and headcount reduction (-USD 58 million) as part of the 2018-2020 efficiency and cost optimization programme.

Cash operating costs *(USD million)*

Index	2017	2018	Change, %
Labour	1,392	1,311	-6
Materials and supplies	732	727	-1
Purchases of raw materials and semi-products	297	436	47
Purchases of refined metals for resale	530	430	-19
Mineral extraction tax and other levies	221	212	-4
Third-party services	242	200	-17
Electricity and heat energy	143	143	0
Fuel	81	87	7
Transportation expenses	65	70	8
Sundry costs	152	158	4
Total cash operating costs	**3,855**	**3,774**	**-2**
Depreciation and amortisation	630	653	4
Decrease/(increase) in metal inventories	-517	109	n. a.
TOTAL COST OF METAL SALES	**3,968**	**4,536**	**14**

Labour

In 2018, labour costs decreased by 6% (or -USD 81 million) to **USD 1,311 million** amounting to 35% of the Group's total cash operating costs driven by the following:

- -USD 89 million – cost decrease owing to the Russian rouble depreciation against US Dollar;
- -USD 58 million – cost decrease following the headcount reduction as part of 2018-2020 efficiency and cost optimization programme;
- +USD 66 million – increase in real terms primarily driven by the indexation of RUB-denominated salaries and wages in line with collective bargaining agreement.

Purchases of raw materials and semi-products

In 2018, purchases of raw materials and semi-products increased 47% (or USD 139 million) to **USD 436 million** driven by the following:

- +USD 193 million – cost increase owing to the processing of copper concentrate purchased from Rostec;
- -USD 24 million – cost decrease owing to lower volumes of semi-products purchased from Nkomati;
- -USD 23 million – cost reduction owing to lower volumes of purchased semi-products from third parties for processing at NN Harjavalta.

Purchases of metals for resale

In 2018, expenses related to purchase of metals for resale decreased 19% (or USD 100 million) to **USD 430 million** owing to lower metal volumes acquired by the Company's Palladium Fund.

Materials and supplies

In 2018, materials and supplies expenses decreased by 1% (or USD 5 million) to **USD 727 million** driven by the following factors:

- -USD 48 million – positive effect of the Russian rouble depreciation;
- +USD 32 million – inflationary growth in materials and supplies expenses;
- +USD 14 million – increase in consumption of process materials that was partly offset by a reduction in repairs.

Third-party services

In 2018, cost of third party services decreased by 17% (or USD 42 million) to **USD 200 million** mainly driven by:

- -USD 15 million – positive effect of the Russian rouble depreciation;
- -USD 27 million – costs decrease primarily due to lower repairs and outsourced concentrates recovery.

Mineral extraction tax and other levies

In 2018, mineral extraction tax and other levies decreased 4% (or by -USD 9 million) to **USD 212 million** driven by the depreciation of Russian rouble.

Electricity and heat energy

In 2018, electricity and heat energy expenses were flat year on year and amounted to **USD 143 million**. Positive effect of Russian rouble depreciation was partly offset by energy price inflation.

Fuel

In 2018, fuel expenses increased by 7% (or +USD 6 million) to **USD 87 million** driven by the following:

- -USD 5 million – positive effect of the Russian rouble depreciation;
- +USD 11 million – higher oil prices.

Transportation expenses

In 2018, transportation expenses increased by 8% (or +USD 5 million) to **USD 70 million** driven by the following:

- -USD 4 million – positive effect of the Russian rouble depreciation;
- +USD 7 million – costs increase driven by outsourcing of Kola MMC transportation activities and increase in metal production volumes.

Sundry costs

In 2018, sundry costs increased by 4% (or +USD 6 million) to **USD 158 million.**

Depreciation and amortisation

In 2018, depreciation and amortisation expenses increased by 4% (or +USD 23 million) to **USD 653 million** driven by the following:

- Positive effect of Russian rouble depreciation amounted to -USD 37 million.
- Depreciation charges increased by +USD 60 million mainly due to transfers from construction in progress to production assets at the Company's operating subsidiaries in Russia and completion of downstream reconfiguration in 2H2017.

Decrease/(increase) in metal inventories

In 2018, comparative effect of change in metal inventory amounted to **USD 626 million** resulting in an increase of cost of metal sales, driven by the following:

- +USD 510 million – comparative effect of change in finished goods inventories owing primarily to the sale of palladium stock accumulated in 2017;
- +USD 116 million – comparative effect of slower growth of work-in-progress inventory relative to the prior year that resulted in cost increase.

Cost of other sales

In 2018, cost of other sales decreased by -USD 10 million to USD 622 million.

Russian rouble depreciation contributed to the reduction of the cost of other sales by -USD 41 million.

Cost of other sales increased in real terms by +USD 31 million primarily due to inflation, higher volumes of services provided by the Group's transportation subsidiaries, indexation of RUB-denominated salaries and wages, and growth of other services.

Selling and distribution expenses *(USD million)*

Expense item	2017	2018	Change, %
Transportation expenses	38	39	3
Marketing expenses	14	31	2x
Staff costs	13	14	8
Other	10	8	-20
TOTAL	**75**	**92**	**23**

In 2018, selling and distribution expenses increased 23% (or +USD 17 million) to USD 92 million primarily due to increase of marketing expenses (+USD 17 million), including sponsorship of various sport activities.

General and administrative expenses *(USD million)*

Expense item	2017	2018	Change, %
Staff costs	478	541	13
Taxes other than mineral extraction tax and income tax	79	103	30
Third party services	97	93	-4
Depreciation and amortisation	32	38	19
Rent expenses	25	23	-8
Transportation expenses	8	9	13
Other	40	52	30
TOTAL	**759**	**859**	**13**

In 2018, general and administrative expenses increased 13% (or +USD 100 million) to USD 859 million. Positive effect of Russian rouble depreciation amounted to -USD 50 million. General and administrative expenses increased in real terms primarily due to the following:

- +USD 95 million – increase in staff costs mainly due to one-off payments related to bonuses paid for the completion of key projects, changes in the Management Board as well as salary indexation;
- +USD 29 million – higher property tax owing to changes in tax legislation in 2018 and additions of property, plant and equipment on the books of Polar division and GRK “Bystrinskoye”.

Other operating income and expenses *(USD million)*

Expense/income item	2017	2018	Change, %
Social expenses	303	207	-32
Change in allowance for obsolete and slow-moving inventory	11	15	36
Change in allowance for expected credit losses	19	6	-68
Net income earned during the pre-commissioning stage	–	-106	-100
Other, net	29	-27	n. a.
TOTAL	**362**	**95**	**-74**

USD 95 mln

other operating expenses in 2018

In 2018, other net operating expenses decreased -USD 267 million to USD 95 million driven by the following factors:

- Decrease of social expenses by -USD 96 million primarily owing to the completion of large-scale one-off social projects;
- Net income earned by GRK "Bystrinskoye" from products sale during the hot commissioning stage (-USD 106 million).

Finance costs *(USD million)*

Expense item	2017	2018	Change, %
Interest expense on borrowings net of amounts capitalized	386	384	-1
Unwinding of discount on provisions and payables	133	100	-25
Changes in fair value of cross-currency interest rate swap	–	51	100
Changes in fair value of non-current liabilities	–	46	100
Other, net	16	-1	n. a.
TOTAL	**535**	**580**	**8**

USD 580 mln

finance costs in 2018

Increase in finance costs by 8% y-o-y to USD 580 million was mainly driven by changes in fair value of derivative contracts, namely cross-currency interest rate swaps, and non-current liabilities. Interest expense on borrowings (net of amounts capitalized) marginally decreased.

The Company managed to maintain the average cost of debt at the prior-year level, despite an increase of base interest rates (LIBOR) in the reporting period, as the result of a number of debt optimization initiatives, including:

- Refinancing some relatively expensive bilateral credit lines with the proceeds of 5-year USD 2.5 billion syndicated term loan, secured by the Company at the end of 2017 at interest rate of Libor 1M+1.50% per annum;
- Decrease in the effective interest rate on a number of existing credit lines totaling USD 755 million; and
- Early termination of relatively expensive GRK "Bystrinskoe" Project Finance Loan in August 2018.

Income tax expense

In 2018, income tax expense increased by 17% to USD 843 million driven mostly by the increase of taxable profit, partly offset by Russian rouble depreciation against US Dollar in 2018.

The effective income tax rate in 2018 of 21.6% was above the Russian statutory tax rate of 20%, which was primarily driven by non-deductible social expenses.

Income tax expense *(USD million)*

Index	2017	2018	Change, %
Current income tax expense	686	812	18
Deferred tax expense	35	31	-11
TOTAL	**721**	**843**	**17**

The breakdown of the current income tax expense by tax jurisdictions *(USD million)*

Country of presence	2017	2018	Change, %
Russian Federation	672	789	17
Finland	8	11	38
Other countries	6	12	100
TOTAL	**686**	**812**	**18**

EBITDA *(USD million)*

Index	2017	2018	Change, %
Operating profit	**3,123**	**5,416**	**73**
Depreciation and amortisation	645	765	19
Impairment of non-financial assets	227	50	-78
EBITDA	**3,995**	**6,231**	**56**
EBITDA margin	**44%**	**53%**	**9 p. p.**

In 2018, EBITDA increased by 56% (or +USD 2,236 million) to USD 6,231 million with the EBITDA margin amounting to 53% (up from 44% in 2017) owing to higher metal revenue, decrease of one-off social expenses and Russian rouble depreciation.

Net profit before non-cash write-offs and foreign exchange differences *(USD million)*

Index	2017	2018	Change, %
Net profit	**2,123**	**3,059**	**44**
Impairment of non-financial assets	227	50	-78
Foreign exchange loss/(gain), net	-159	1,029	n. a.
Gain from disposal of subsidiaries	-20	–	100
Net profit before non-cash write offs and foreign exchange differences	**2,171**	**4,138**	**91**

Statement of cash flows *(USD million)*

Index	2017	2018	Change, %
Cash generated from operations before changes in working capital and income tax	**4,103**	**6,339**	**54**
Movements in working capital	-1,670	941	n. a.
Income tax paid	-670	-787	17
Net cash generated from operating activities	**1,763**	**6,493**	**4x**
Capital expenditure	-2,002	-1,553	-22
Other investing activities	66	-9	n. a.
Net cash used in investing activities	**-1,936**	**-1,562**	**-19**
Free cash flow	**-173**	**4,931**	**n. a.**
Interest paid	-642	-551	-14
Other financing activities	-1,595	-3,753	2x
Net cash used in financing activities	**-2,237**	**-4,304**	**92**
Effects of foreign exchange differences on balances of cash and cash equivalents	-63	-91	44
Net increase/(decrease) in cash and cash equivalents	**-2,473**	**536**	**n. a.**

Reconciliation of the net working capital changes between the balance sheet and cash flow statement *(USD million)*

Index	2017	2018
Change of the net working capital in the balance sheet	**-1,694**	**1,282**
Foreign exchange differences	115	-277
Change in income tax payable	-7	-5
Other changes including reserves	-84	-59
Change of working capital per cash flow	**-1,670**	**941**

In 2018, free cash flow increased to USD 4.9 billion primarily due to higher cash generated from operating activities and lower CAPEX.

In 2018, net cash generated from operating activities increased 4-fold to USD 6.5 billion primarily driven by the increase in EBITDA and decrease of working capital in 2018 (versus increase in 2017).

Interest paid reduced by 14% to USD 551 million as a result of the optimization of debt portfolio.

In 2018, CAPEX decreased by 22% to USD 1.6 billion primarily due to the completion of Talnakh Concentrator modernization and the construction of Chita project as well as the projects related to the development of Pelyatkinskoye gas condensate field.

Capital investments breakdown by project *(USD million)*

Project	2017	2018	Change, %
Polar Division, including:	860	696	-19
Skalisty mine	216	218	1
Taymirsky mine	93	71	-24
Komsomolsky mine	18	44	2x
Oktyabrsky mine	69	40	-42
Talnakh Concentrator	89	29	-67
Sulphur project	37	36	-3
Other Polar Division projects	338	258	-24
Kola MMC	228	292	28
Chita (Bystrinsky) project	449	168	-63
Other production projects	453	386	-15
Other non-production assets	12	11	-8
TOTAL	**2,002**	**1,553**	**-22**

Debt and liquidity management *(USD million)*

Kind of debt	As of 31 December 2017	As of 31 December 2018	Change	
			USD million	%
Long-term	8,236	8,224	-12	0
Short-term	817	215	-602	-74
Total debt	**9,053**	**8,439**	**-614**	**-7**
Cash and cash equivalents	852	1,388	536	63
Net debt	**8,201**	**7,051**	**-1,150**	**-14**
Net debt /12M EBITDA	2,1x	1,1x	-1,0x	

2018 milestones

January 29, 2018

Moody's upgraded the Company's credit rating to investment grade level of "Baa3" with "Positive" outlook in the wake of change of Russia's sovereign ceiling for foreign currency debt to "Baa3" from "Ba1" and change of Russia's sovereign outlook to "Positive" from "Stable". In Q4 2018, S&P Global and Fitch affirmed the Company's credit ratings at investment grade level of "BBB-" with "Stable" outlook.

November 30, 2018

Russian rating agency "Expert RA" assigned Nornickel its highest Russian credit rating "ruAAA" with "Stable" outlook. Therefore, as of December 31, 2018, Nornickel had investment grade credit ratings assigned from all three international rating agencies Fitch, Moody's and S&P Global, and Russian credit agency "Expert RA".

As of December 31, 2018, the Company's total debt decreased by 7% (or –USD 614 million) from December 31, 2017 and amounted to USD 8,439 million. The Company's debt portfolio remained predominantly long-term at the end of 2018 with the share of long-term debt of 97% (or USD 8,224 million) as compared to 91% (or USD 8,236 million) as of December 31, 2017.

Net debt/12M EBITDA ratio reduced to 1.1x as of December 31, 2018 from 2.1x as of December 31, 2017. The reduction of leverage resulted both from the decline of net debt by 14% to USD 7,051 million through the increase in cash and cash equivalents by 63% to USD 1,388 million and decrease in the Company's total debt and from increase of EBITDA by 56% (or +USD 2,236 million). Substantial growth of cash and cash equivalents was driven, inter alia, by the increase in advances received from customers in the amount of USD 900 million during 2018 at cost on par or lower of the cost of bank financing available for the Company. In 2018, the Company continued to build up and diversify its liquidity position, increasing committed credit lines to USD 4,290 million by December 31, 2018, and having registered in Q4 2018 the 30-year bond programme for a total amount of RUB 300 billion or the equivalent in other currencies.

In 2018, Nornickel continued to optimize its debt portfolio aiming at the extension of debt maturity and a reduction of foreign exchange risks of its financial liabilities, which allowed to maintain short-term debt refinancing risk as well as the share of RUB-denominated debt in the debt portfolio at a low level.

5

Sustainable development

HUMAN RESOURCES

Headcount breakdown by Russian operations *(%)*

Norilsk Industrial District (NID)	67
Murmansk Region	17
Moscow and other Russian regions	6
Krasnoyarsk Territory (excluding NID)	5
Trans-Baikal Territory	4
Foreign operations	1

HeadHunter ranked Nornickel fourth among Top 5 Russian employers and first in the metals and mining sector. HR Brand is the holding's annual independent award recognising companies for their strong reputation as an employer.

Nornickel also received the international Randstad Award as the best employer in the metals and mining sector based on a Russia-wide independent survey of 9,500 working-age respondents. The 2018 competition saw over 300 Russian corporates from various economy sectors.

One of the Company's focus areas is to nurture corporate culture aimed at boosting employee performance and commitment to delivering against targets. We view our people as the Company's key asset and keep investing in their professional and personal development, while also creating an environment that would enhance employee performance and engagement.

Nornickel makes sure that all employees enjoy equal rights and treatment regardless of gender, age, race, nationality and origin. We provide all our talent with the same opportunities to unlock their potential and promote them solely on the basis of professional abilities, knowledge and skills.

Respect for employees and their rights lies at the heart of Nornickel's business. The protection of human rights is reflected in a number of by-laws, including Business Ethics Code, Personal Data Policy, Anti-Embezzlement Regulation and Human Rights Policy.

STAFF COMPOSITION

In 2018, the Group's average headcount totalled 75,900 people.

A decrease in the average headcount in 2018 was caused by our programme to improve labour productivity and reduce costs.

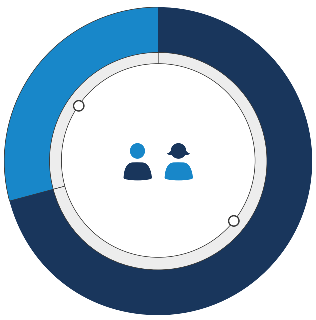
Nornickel is among the principal employers in the Norilsk Industrial District and Kola Peninsula, hiring 67% and 17% employees, respectively.

The Group's average headcount *(people)*

Location	2016	2017	2018
Russia	81,081	77,991	74,926
Africa	586	605	617
Europe	311	326	330
Asia	13	13	13
USA	10	10	10
Australia	5	5	5
TOTAL	**82,006**	**78,950**	**75,901**

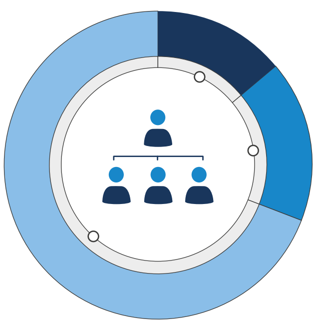
RECRUITMENT

Headcount breakdown by gender[1] (%)



Male	71
Female	29

Headcount breakdown by category[1] (%)



Managers	14
White-collar employees	17
Blue-collar employees	69

[1] *Russian operations.*

Partnerships with universities

To make jobs in the metals and mining industry more attractive for young people and help develop skills in personnel, Nornickel pays special attention to collaboration with Russian universities. In 2018, the Company invited 301 students from industry-oriented universities to take part in its Career Start-Up programme. The students obtained practical skills as part of their apprenticeship at the Company's major facilities, while also gaining unique knowledge by taking part in the Conquerors of the North business game. The event was specifically designed to develop knowledge and competencies most sought after by Nornickel.

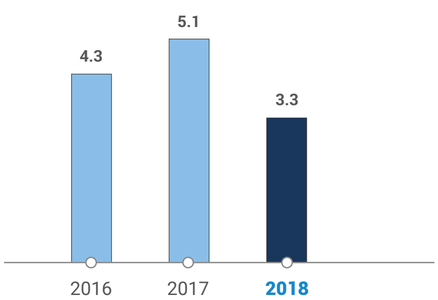
In the span of summer months, the programme participants took hands-on training and competed in a multi-stage business game with a focus on teamwork to try and tackle some of the Company's real tasks. The Company engaged 20 of its top experts to provide mentorship support to the contestants. Nornickel was the first company in the Russian mining industry to engage students and graduates in solving true business challenges. In 2018, the project saw the Company sign employment contracts with 88 participants.

Nornickel places a strong emphasis on engineering education in Russia and partakes in the promotion of relevant professions among school graduates and university students. In 2018, we supported Cup MISIS Case and Cup Technical, case-solving championships among students of Russian technical universities. During the contest, students dealt with cases related to Nornickel's operations, gaining insight into the Company's business processes.

In 2018, we launched First Arctic, a unique leadership programme that welcomed both job seekers from other companies and Nornickel's young professionals. The programme aims to attract high-potential graduates of industry-oriented universities, and retain promising young talent, including best specialists from other facilities across Russia, to strengthen the management pool of Polar Division. First Arctic targets engineers and relies on a coaching approach to growing future managers. The participants are supervised by experienced coaches from among Polar Division's top management. The July and August promo campaign helped collect more than 1,500 CVs of job seekers from 18 Russian cities. 53 candidates reached the finals in October, with as few as eight selected to participate in the programme.Assistance programme.

The Company is **actively engaging employees** from other Russian regions

Financing under the Assistance programme *(USD mln)*



379 people

joined the Assistance Programme in 2018

35,000
employees of Nornickel

participated in the Corporate Dialogues project

Assistance Programme

Due to the remote location of its industrial sites, the Company is actively engaging employees from other Russian regions. To help them settle in faster, we launched a programme called Assistance to New Employees in Adapting to the New Place of Residence in Norilsk and the Taimyrsky Dolgano-Nenetsky Municipal District (the Assistance programme).
The programme does not only target highly qualified specialists and managers, but also focuses on attracting young talents and skilled workers to fill positions on the skills shortage list. Today, it covers 1,520 of the Company's employees, including 379 new participants who joined in 2018. With this programme the Company seeks to provide comfortable living conditions for the invited employees and reimburse their relocation and resettlement costs.

Engagement

As part of its efforts to boost employee engagement, Nornickel annually runs a series of activities, which comprises a survey named “Let Everyone Be Heard. What Do You Think?", review of its outcomes, and delivering a set of improvement initiatives.

The survey includes polling and focus group research among some 75,000 employees from 32 Nornickel's facilities. Its results are subject to review, action planning and implementation at all governance levels, from facilities to the Group as a whole. In 2018, the Company built a team of engagement experts, with 120 employees selected and trained for the purpose.

Personnel development

In 2018, our work to develop corporate culture centred around:

- personnel engagement;
- corporate dialogues and forums;
- comprehensive training in corporate culture;
- training of corporate coaches;
- promotion and communication.

Corporate dialogues and forums

In 2018, Nornickel ran a Corporate Dialogues project to raise employee awareness, help them embrace more fully corporate goals and values and make employee-management relationships more open. The project saw 17 corporate dialogues and 20 communication training sessions, which helped train over 200 managers. A total of 3,500 Nornickel’s employees participated in the initiative.

Eight unit conferences as well as Technological Breakthrough, Leaders of Nornickel and Talent Pool forums featured workshops on engagement and corporate culture, covering over 1,000 people.

The economic effect of 18 business initiatives amounted to at least

USD 3.2 mln

>1,800
employees

>500
line managers

completed Our Values and Value-Based Management training programmes

Comprehensive training in corporate culture

Eight Nornickel's facilities and units attended a 125-hour training programme on workplace culture.

The programme translated into a much better alignment of employee behaviour with corporate values Group-wide, with a 1.5–2 times increase in average alignment figure revealed by the management team survey.

Some 18 business initiatives were developed and approved, delivering an economic effect of at least USD 3.2 mln (RUB 200 mln), according to participants.

More than 1,800 blue-collar employees and over 500 line managers took part in dedicated Our Values and Value-Based Management training programmes, respectively.

Promotion and communication activities

Promotion and communication activities focused on the coverage of engagement and corporate culture events in corporate media and on the portal. In 2018, we prepared 11 articles, carried out six interviews with vice presidents, created four information and advertising videos, produced handouts on the Company's programmes (leaflets, flyers), and developed a website and a brand for Norilsk Live.

Training of corporate coaches

In order to build a hub for training coaches in corporate values and roll out relevant competencies company-wide, the Company designed the Our values module. A competition was organised to select and instruct 24 corporate coaches, who later taught in more than 60 module programmes.

Talent pool

In 2018, the Company kept rolling out the talent pool management system across its mining facilities to cover recruiting of lower and middle line managers. The Company's talent pool added 115 members in Polar Transport Division, Norilsknickelremont, Norilsk Support Complex and NTEK, with 70 line managers acting as mentors. The reporting year saw the start of a training and development programme for employees and their mentors, which offers a combination of classroom and online sessions.

2018

Jan Feb Mar **Apr** May Jun Jul Aug **Sep** Oct **Nov** Dec

Apr

The Company completed the operational efficiency programme at Moscow’s School of Management Skolkovo. Its five modules helped 55 participants better understand business and business environment, expand their planning horizon, enhance their vision of the Company's prospects, analyse best practices in production management, and also their possible use and roll-out across the Group. The programme saw the Company implement eight projects to improve the operational efficiency of its assets.

Sep

Nornickel kicked off a Leaders of Nornickel corporate development programme that welcomed 54 high-potential managers. The programme focuses on project work to improve process efficiency across the Company's business units based on lean manufacturing.

Nov

Nornickel launched an IamHR corporate programme for the professional development of HR employees. It seeks to improve the human capital management function, promote interaction between the business and HR, and introduce the most advanced solutions and best practices in HR management. The participants will be tasked with cataloguing HR practices and management tools.

720 managers

were assessed under a professional competency model

In 2018, the Company went on with assessing the capacity, current performance and growth prospects of its middle and top managers. The assessment covered some 1,500 managers from both production facilities and functional divisions of Nornickel. Its outcomes and development options were reviewed by HR committees. The assessment identified over 450 managers with a high career growth potential.

In 2018, the Company organised a number of training courses in managerial competencies for some 270 high-potential employees from Monchegorsk and Norilsk. The training topics were selected based on the competency assessment and an individual development plan for each manager.

To define priority development areas for its management, the Company runs an end-of-year 360-degree competency review using a corporate competency model built around values and management competencies. Based on its results and relevant feedback from the superior, each participant can choose the right path for development and select required tools and methods using a dedicated roadmap for next year’s development activities.

In 2018, Nornickel closed the project to review the professional competencies of lower and middle line managers across its mining facilities. The project yielded a competency model and a series of relevant tests used to assess 720 line managers and identify their growth areas. Nornickel will use the review results to launch specially designed training programmes for the facilities' lower and middle line managers in 2019.

The Company pays close attention to implementing **cutting-edge education technologies**

Enhancing professional excellence

With our reconfigured production cycle, modernised operations, new technologies and approaches, and a rapidly changing operational environment, we need to make sure our employees meet the new expertise, skill and competency requirements. The corporate training framework must provide employees with a quick and unhindered access to new knowledge, helping them master new professional skills and receive training and development support for horizontal and vertical job rotation.

In 2019, we will proceed with the diagnostics and management of professional skill development across our facilities, building a professional competency model for certain functional and production divisions of the Company, defining knowledge and skills requirements for each position, and developing a set of test questions to assess professional competencies of employees in temporary fill positions.

In the reporting year, we continued to educate and develop our employees. Our training and retraining programmes covered over 87,500 staff-hours. Around 43,000 employees took courses in corporate training centres.

An area of special attention is the use of advanced technologies to assist in training various personnel categories. In 2018, 6,500 employees attended online HSE training sessions hinging on our staff expertise. We leverage internal expertise and today's formats to come up with new online training courses that help build up employee competencies promptly and efficiently.

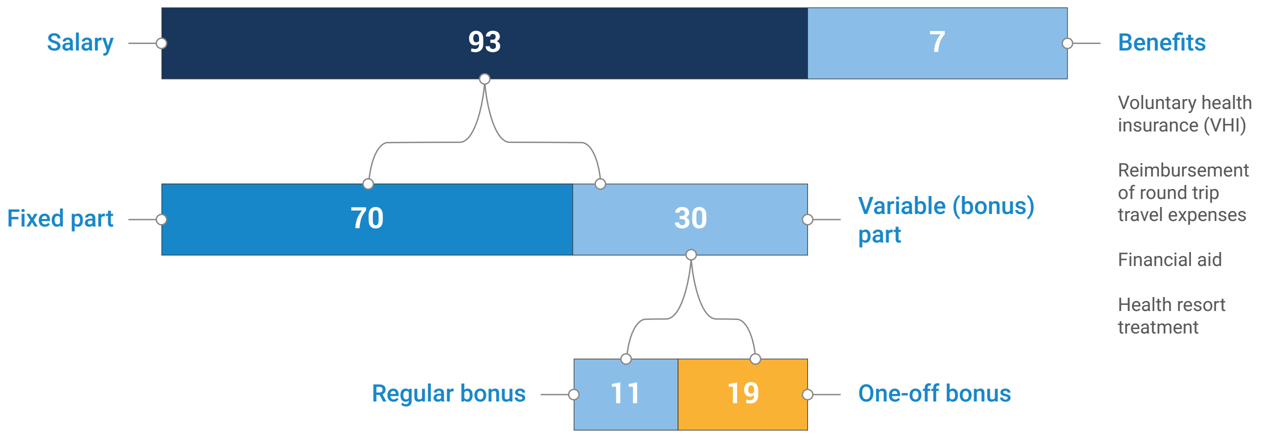
Incentives and rewards

Remuneration of Nornickel's employees depends on the complexity of the functions performed, as well as individual experience, expertise and contribution to the Company's performance.

Principles of remuneration:
- Internal equity – remuneration management is based on the job description and grading methodology. The Company has a unified grade system across all functions.
- External competitiveness – remuneration is determined based on the labour market data, with adjustments made for the company's focus area, business location and job grades.
- Performance-based incentives – pay level is reviewed subject to the annual performance assessment outcome.

Simplicity of the remuneration system – pay level calculation and review procedures are transparent, and every employee knows how to improve their remuneration. The remuneration package consists of the fixed and variable components (70% and 30%, respectively), with the latter linked to the Company's operating performance and achievement of relevant KPIs.

Remuneration package across the Group's Russian operations *(%)*



In addition to salaries, the Company's employees enjoy a variety of benefits making up 7% of the remuneration package. The social package includes the following benefits and compensations:

- voluntary health insurance with major accident coverage;
- discounted tours for health resort treatment and recreation of employees and their families;
- reimbursements of round trip travel expenses and baggage fees for employees and their families living in the Far North and equated territories;
- one-off financial aid in the face of certain life events, or hardships;
- additional employee pensions;
- other types of social guarantees under the existing collective bargaining agreements and local regulations.

EMPLOYEE AWARDS

In 2018, MMC Norilsk Nickel approved its Award Policy, which sets out the goals, principles, rules, requirements and limitations of the Company's awarding activities. Aimed at improving employee performance, the Award Policy is a fundamental document for HR decision-making and drafting the Company's by-laws.

Average monthly salary across in the Group's Russian operations

Currency	2016	2017	2018
USD[1]	1,405	1,784	1,780
RUB '000	94.2	104.1	111.6

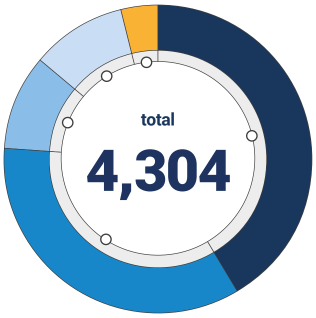
[1] *Based on the average annual RUB/USD exchange rates of 67.03 in 2016, 58.35 in 2017 and 62.71 in 2018.*

Expenses on employee benefits across the Group's Russian operations

Item	2016	2017	2018
Total expenses *(mln USD)*	103.0	122.5	127.6
including per employee *(USD)*	1,300	1,571	1,703

UNDERLYING PRINCIPLES OF THE AWARD POLICY

Employee awards *(pcs)*



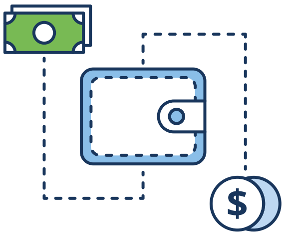
Internal awards from the Group's companies	1,996
Awards from regional and municipal authorities	1,664
Awards from ministries and agencies	286
Corporate awards	275
Government awards	83

- **Fair and transparent** procedure for nominating and awarding employees. The Company uses fair, relevant and transparent criteria to ensure that the awarded employees and their colleagues clearly understand which achievements are recognised, and create a perception that the award is fair and well-deserved.
- **Award relevance and attainability.** The Company maintains a balance between employees' award aspirations and its attainability through an objective distribution of award quotas, transparent and fair procedures, material financial and non-financial incentives, and award events.
- **Communication and awareness.** The Company makes available the documents governing the Award Policy and the list of award categories and awards while also providing for visible and clear nomination and awarding conditions, criteria and procedures.
- **Maximum awareness** of all employees about award winners. The award process is open and enjoys various types of information support. Information on the awarded employees is communicated to employees via all internal communications channels.
- **Frequency.** Award campaigns and events are evenly distributed throughout the calendar year.
- **Equal opportunities** for employees working at different locations and positions to be nominated and awarded. The Company ensures there is no gender, national, or religious discrimination in the nomination and awarding of employees.
- **Development of employees** in line with strategic priorities and corporate values through better use of their potential and motivation to improve their professional skills.

The Award Policy is closely linked to Nornickel's values and strategic priorities through corporate incentives. The Company recognises employees for their outstanding professional achievements and contribution, innovations that drive growth and add value, efforts going beyond formal agreements with the Company, and business improvement initiatives. The Company praises and distinguishes employees showing unmatched production, engineering and managerial competencies by awarding those who delivered remarkable operating and management performance and contributed a lot to advancing production. There are several categories of incentives in the Company. They include corporate incentives or awards that can be granted to the staff, and internal incentives with nomination and awarding criteria set in compliance with the Award Policy. The best employees may be nominated for agency and government awards. The Company welcomes the recognition of its employees' prodigious operating and management achievements, and significant contribution to production growth by agencies and the government.

Award events are the pinnacle of the award system. The Company bestows corporate awards at special ceremonies attended by its staff and senior management. Information about the winners is published in corporate magazines and communicated group-wide.

REMUNERATION



The key performance indicators adopted by Nornickel serve to build a transparent incentive and performance assessment system. Remuneration is linked to KPIs approved for different types of jobs, with employees consistently exceeding the targets.

The Company put in place the performance management system five years ago, with assessment reliant on a variety of key performance indicators (KPIs), including social responsibility, occupational safety, operating efficiency and capital management. In 2018, some 9,800 people (employees of the Company's Head Office, branches and subsidiaries) took part in the KPI-based assessment.

The system is instrumental in streamlining evaluation criteria and enabling the management and employees to align the current year's priorities with performance indicators of the Company/divisions/subsidiaries and link an employee's performance to their pay level.

The reporting year saw the Company kick off automation of the KPI-based employee assessment. The new system will help standardise talent pool management methods across the board, consolidate relevant data into a shared database, and provide access to the process through personal accounts for each employee. By the end of 2018, the system ran at 19 divisions and subsidiaries of the Group. In 2019, Nornickel will rolled it out across its energy assets and transport divisions.

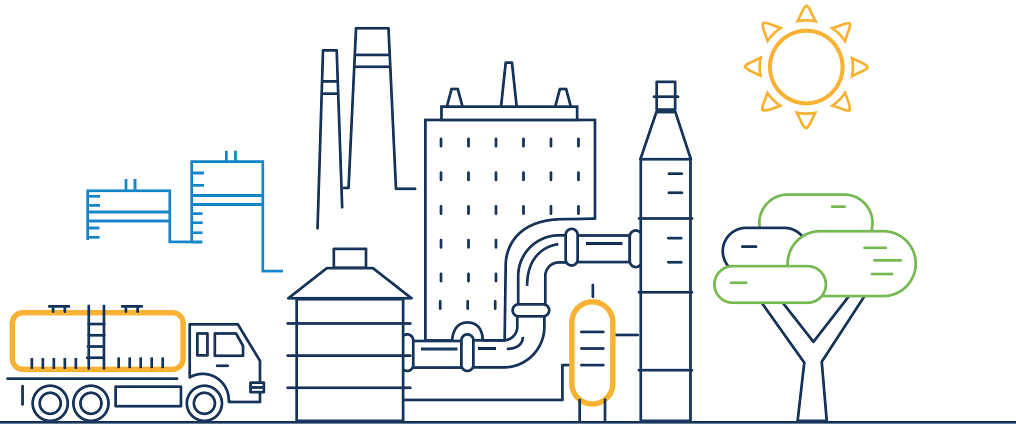
To improve the performance of the Head Office staff, Nornickel approved the Procedure for Assessing Employee Performance and the Regulation on Annual Performance Bonuses. The Procedure primarily seeks to link the assessment outcome with remuneration, development and promotion of employees, whereas the Regulation on Annual Performance Bonuses serves to review employee performance in the reporting period against team and individual KPIs.

To boost employee performance across its Russian operations, the Company put in place the Procedure for Assessing Management Performance. It calls for setting KPIs to be used as a basis for evaluating manager achievements.

OCCUPATIONAL HEALTH AND SAFETY

OUR APPROACH

Occupational health and safety and mitigation of mining and processing risks are among Nornickel's top production priorities.

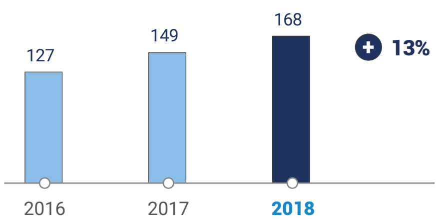


53%

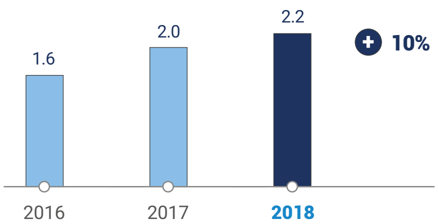
of the Group companies

are certified for compliance with HSE standards

Occupational health and safety expenses *(USD mln)*



Expenses per employee *(USD '000)*



HSE standards

As at the end of 2018, 53% of the Group companies (by the number of employees) were certified for compliance with Russian and international HSE standards. In 2019, the Company plans to start certification to comply with ISO 45001.

Nornickel's health and safety management system is aligned with the Company's Occupational Health and Safety Policy to keep up to date with best global practices and views life and health of employees as a fundamental value that takes priority over operational performance. In 2013, the Company embarked on a mission to reduce injury rates and promote health and safety culture.

Occupational health and safety matters are reserved to the Audit and Sustainable Development Committee of Nornickel's Board of Directors, which reviews dedicated management reports every quarter.

Severe occupational injuries and fatalities are to be examined on a standalone basis, with the management reporting in detail on accident causes, prevention and disciplinary action taken against the officers at fault.

Nornickel's First Vice President – Chief Operating Officer is directly responsible for the development of health and safety initiatives and ensuring compliance with the relevant requirements. The remuneration of the COO and heads of production units depends on the achievement of occupational safety targets. The health and safety component makes up from 12% to 28% of the KPI sheets, with fatal accidents serving as the blocking factor that reduces the occupational safety score to zero and diminishes the overall remuneration amount.

The Company has a Health, Safety and Environment Committee chaired by the First Vice President — Chief Operating Officer and designed to improve efficiency and promote responsibility in the realm of occupational health and safety. The Committee holds quarterly meetings at the production sites of the Group's divisions and Russian subsidiaries to review matters related to the improvement of the Company's health and safety management system, in particular by:

- analysing the causes and details of severe and fatal workplace injuries;
- checking the status of initiatives in the pipeline approved to prevent similar injuries at the Company's facilities going forward;
- discussing organisational and technical action plans to improve occupational health and safety.

The Company remains committed to:

- improving its production management methods with a view to enhancing occupational health and safety;
- supplying its production sites with new equipment and introducing cutting-edge safety systems and control tools;
- upgrading the rock bolting systems in underground mines;
- improving employees' health and safety skills, providing training in occupational safety and enforcing workplace discipline;
- minimising the negative impact of adverse workplace factors on the employees' health;
- providing employees with high-quality modern workwear and personal protective equipment that meet the Company's corporate standards;
- promoting preventive healthcare.

The production facilities of Nornickel have process-, job- and operation-specific regulations and guidelines in place containing dedicated health and safety sections. To top it off, the Group's collective bargaining agreements also have occupational health and safety provisions. At the end of 2018, key players of the copper and nickel and supporting industries developed and signed an interregional cross-industry agreement setting out the obligations of the parties in the domain of health and safety.

The Company and most of its subsidiaries have joint health and safety committees made up of management, employee and trade union representatives.

As all maintenance and construction operations at the existing production facilities are classified as high-hazard, the contractors' workers are required to attend induction and target briefings on health and safety prior to the commencement of works. Work permits also contain information on occupational safety requirements to be observed during the performance of works or in the immediate run-up to them. In 2018, Nornickel introduced a new corporate health and safety standard for contractor management.

Corporate standards and prevention

Nornickel has corporate health and safety standards that apply to both the Group's employees and the contractor personnel deployed at the Group's production sites. Nornickel's HSE Department is responsible for monitoring the implementation of the corporate standards and ensuring compliance with occupational health and safety requirements.

Production units of the Company's divisions and the Group's Russian subsidiaries hold regular second party audits for compliance with applicable health and safety requirements. In 2018, a total of 45 audits took place in accordance with the approved schedule.

In order to minimise its production risks, the Company develops and implements a comprehensive annual health and safety action plan. For example, as part of the Risk Control project (launched in 2016 to facilitate the introduction of the STO KISM 121-211-2014 occupational health and safety risk management standard), 2018 saw further work to meet the standard requirements, improve hazard identification procedures, and assess and manage health and safety risks. Heads of the production units joined forces with the OHS team to analyse changes in the indicators included in the audit matrix and use this analysis to assess the quality of safety behaviour audits and efficiency of remedial initiatives designed to reduce the number of hazardous actions and situations at the workplace.

In 2018, the Company developed a new health and safety corporate standard for contractor management, which sets out a wide range of requirements starting from the choice of contractors.

In 2018, Nornickel installed automated gas monitoring and control systems at the self-propelled mining equipment of Polar Division and Medvezhy Ruchey to power the equipment off when the gas mixture reaches an explosion limit and thereby eliminate the risk of explosions inside the mines.

Staff training and raising awareness about occupational safety

The Company strives to make sure that its employees have all the necessary knowledge and skills to perform their duties in a safe and responsible manner.

Training for a newly hired employee starts with an induction briefing on safety and continues with a series of workplace briefings. The existing corporate programmes also require staff briefings to be held on a regular basis going forward. There are also interactive training sessions for employees in key positions.

Nornickel has put in place **an OHS monitoring system**

Safety workwear, footwear and personal protective equipment for employees

To minimise the negative impact of adverse workplace factors on the Company's employees, Nornickel has developed standard requirements to safety workwear, footwear and personal protective equipment. Employees use advanced personal protective equipment, including safety workwear and footwear, helmets, respirators and goggles. Workers with on-site production experience of up to three years wear special red helmets with the word "Warning" on them and protective clothing with "Warning" badges that make them stand out.

Employees working in contaminated conditions are provided with free-of-charge wash-off and decontaminating agents.

In 2018, the Company purchased personal protective equipment worth approximately USD 41 mln (RUB 2.6 bn).

Control over compliance with health and safety requirements

The Company refuses to compromise on OHS standards, as prevention of health and safety violations is key to reducing injury and accident rates.

Nornickel has put in place an OHS monitoring system, which harnesses a multi-stage control architecture with ad hoc, targeted and comprehensive inspections. The first stage involves controls by the line manager or the supervisor (aided by professionals from the OHS team) and focuses primarily on workplace discipline. The second and higher level stages involve controls by special OHS commissions including representatives of the management and employees.

In addition to the prevention and control initiatives described above, the Company regularly conducts safety behaviour audits in accordance with the approved schedule. To date, the prevention and control team has identified some 14,900 violators of health and safety requirements and held them to account, including by partially or completely stripping them of their bonuses.

Occupational health

To minimise the risk of occupational diseases, the Company promotes medical prevention and healthy lifestyles among its employees, with the management striving to raise awareness about the importance of health and safety requirements. Nornickel also seeks to introduce meaningful occupational health initiatives taking into account both workplace and individual risk factors.

The Company offers its staff regular disease prevention check-ups in line with recommendations from the healthcare authorities. Employees undergo compulsory pre-employment, regular and ad hoc medical examinations organised at the Company's expense. Those that have contact with hazardous materials are subject to additional check-ups at occupational pathology centres (regularly and upon recommendation from a medical board).

The Group's production facilities have dedicated medical aid posts to perform pre-shift checks and provide medical assistance at request during the working hours.

If certain hazardous production factors are identified at the workplace, the Company supplies employees with free personal protective equipment (PPE), including respiratory protection (respirators, gas masks), hearing protection (earmuffs, earplugs), eye protection (glasses/goggles with UV filters, visors), skin protection (gloves, protective and regenerative creams, protective outerwear).

To improve health performance indicators and prevent occupational diseases, the Company also provides employees working in harmful and hazardous conditions with free foods, milk, and other equivalent food products for therapeutic purposes.

All these initiatives are not only designed to raise the living standards of the workforce, but also to produce a positive economic effect by reducing the number of lost time illnesses and injuries.

USD 41 mln

spent by the Company to purchase personal protective equipment in 2018

Fatalities went **down**

Health and safety performance indicators

In 2018, Nornickel's occupational health and safety initiatives helped reduce the number of workplace injuries from 60 to 32 and the lost time injury frequency rate (LTIFR[1]) from 0.44 to 0.23. The number of fatal injuries and the fatal injury frequency rate (FIFR[2]) also went down from 8 to 6 and from 0.07 to 0.05, respectively.

Investigation of workplace injuries and occupational diseases is carried out in accordance with the Labour Code of the Russian Federation, industry regulations, and the Accident Investigation corporate standard. The details of all fatal injuries were reported on to the Board of Directors and thoroughly investigated to avoid similar injuries in the future.

Nornickel's management views occupational safety and zero workplace fatalities as its key strategic objectives and keeps running dedicated programmes to prevent workplace accidents.

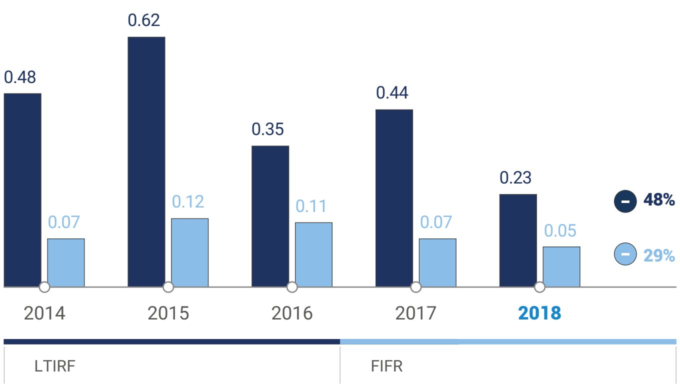
In 2018, Nornickel reduced the number of accidents

by 47% vs 2017

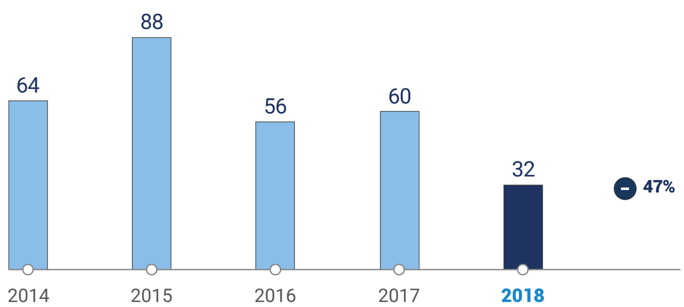
1 LTIFR stands for lost time injury frequency rate (LTIFR = non-fatal LTIs / total number of hours worked × 1,000,000).

2 FIFR stands for fatal injury frequency rate (FIFR = FIs / total number of hours worked × 1,000,000).

Workplace injury rates



Number of injuries *(injured people)*



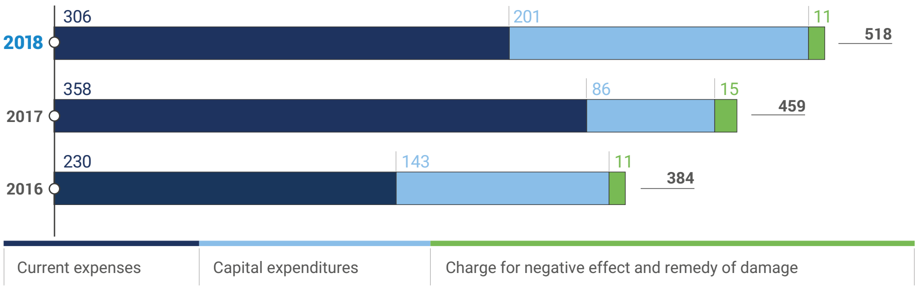
Safety performance indicators

Indicator	2016	2017	2018
FIFR	0.11	0.07	0.05
LTIFR	0.35	0.44	0.23
Workplace injuries (people)	56	60	32
Including: fatal injuries	13	8	6
lost time injuries	43	52	26
Contractors' workplace injuries (people)	18	16	19
Including: fatal injuries	8	1	2

>>> *For more details on the Company's occupational health and safety initiatives, please see the 2018 Sustainability Report*

ENVIRONMENT AND BIODIVERSITY

Environmental expenses *(USD mln)*



ENVIRONMENTAL MANAGEMENT SYSTEM

In 2018, the Environmental Management System[3] (EMS) continued to operate as part of the Corporate Integrated Quality and Environmental Management System (CIMS). This enabled the Company to harmonise environmental and quality management initiatives with the operations of other functions (such as production management, finance, health and safety) and enhance its overall performance along with environmental safety. With the EMS now in place, the Group's enterprises reap multiple benefits, as it demonstrates their compliance with global environmental standards.

System audit

To confirm compliance of the EMS with ISO 14001:2015, the Company engages Bureau Veritas Certification (BVC) to conduct surveillance audits once a year and recertification audits once every three years. In November 2018, Nornickel successfully passed a surveillance audit of its CISM. The auditors of BVC confirmed CISM compliance with the ISO 14001:2015 and ISO 9001:2015 requirements. Based on the audit findings, BVC identified the scope for potential improvements while also highlighting the overall strengths of the Company's EMS.

Throughout 2018, the Company carried out internal audits and a corporate audit as part of the CIMS in line with international standards and Norilsk Nickel's by-laws. The internal audits and the corporate audit were conducted by specially trained and competent personnel.

In line with ISO 14001 and principles of environmental openness and transparency, the Company cooperates with the legislative and executive authorities, control and supervision agencies, international and public organisations, mass media, shareholders, investors, local communities, and other stakeholders.

2018 milestones

Bystrinsky GOK passed state environmental review. Bystrinsky GOK benefits from new highly efficient equipment and technologies that help minimise its adverse environmental impact. The Company has a modern domestic and industrial waste landfill with seepage water collection and treatment systems. Flue gas emission areas are equipped with cutting-edge gas purification systems. The Company also conducts ongoing monitoring of the environmental and radiation conditions.

Kola MMC's Smelting Shop increased sulphuric acid output to 58 kt, thus exceeding the target. By replacing the obsolete technology of copper-nickel concentrate roasting, which previously caused sulphur dioxide emissions of 48 ktpa, the Company brought down these emissions to their lowest levels. Today, to prepare copper-nickel concentrate for smelting, Kola MMC uses the briquetting technology, where feedstock is pressed mechanically and briquettes have a higher sulphur content than pellets. When processed in the Smelting Shop, such feedstock produces gas that is richer in sulphur dioxide and is easier to capture and recycle.

[3] *MMC Norilsk Nickel's Environmental Management System (EMS) has been successfully operating since 2005 in the production, project management, storage, delivery, including delivery by sea, and sales.*

CLIMATE CHANGE

Climate change is a global problem of our day capable of having an adverse impact on the world community, as it will affect the biodiversity, reduce water and energy availability, and cause other environmental risks. GHG emissions are one of the key drivers of global warming and approaching climate change. Nornickel recognises the importance of fighting against climate change and supports global initiatives to reduce GHG emissions. The Company pursues its long-term development agenda through process upgrades using the best available technologies, improving its energy efficiency, increasing the share of green energy, and reducing the energy intensity of commercial production. Moreover, the Group is committed to the UN Global Compact Principles.

Nornickel's Board of Directors deals with climate change issues on a regular basis as part of discussions on the Company's Environmental Development Framework and progress reports on major investment projects, and treats them as a priority in setting Nornickel's targets and the development strategy. The First Vice President – Chief Operating Officer oversees climate change matters.

Climate risks

The Company has always worked in harsh climatic conditions, including permafrost, seasonal ice melt, and extremely low temperatures. Operations in such environment historically took into account severe climate changes, which, to crown it all, have a pronounced seasonal nature. Therefore, all structures were built on pilings, while industrial facilities are based on hard rock to avoid building decay.

Most supplies, including consumer goods, feedstock and materials for manufacture and constructions, as well as social goods arrive at the Dudinka Port located 100 km from Norilsk and accessible to sea and river vessels alike. The Company is the Port owner. It is the world's only port that gets flooded every year during the spring thaw. Located in the Far North, the port operates a seasonal service: approximately from November to May its water area and the Yenisey basin freeze. During this period, Dudinka Port handles only sea vessels using port icebreakers to de-ice the berths and provide support during manoeuvring and mooring operations. In May and June, during the flooding, the service is suspended. When ice drift passes and water level goes down, the Company promptly restores the operability of berths using its unique proprietary technology.

The Company's power supplies are also adjusted for climate conditions. The Company uses neither solar nor wind power because of violent winds and long polar nights during the winter period, but it makes a good use of green hydropower. Nornickel operates two hydropower plants covering 44% of its energy needs. The Company has established fuel-based backup generating capacity to be used in the event of drought or decline in hydropower plant output.

2018 milestones

Sulphur Project kick-off.
In September, Copper Plant officially kicked off the Sulphur Project, Nornickel's most ambitious initiative to dramatically improve local environment. The official ceremony was attended by Vladimir Potanin, Nornickel's President, and Sergey Menyaylo, the Russian President's Plenipotentiary Representative to the Siberian Federal District.

Dialogue with stakeholders. Experts from Russia and Norway discussed environmental initiatives.
Nornickel's representatives furnished their Norwegian colleagues with data on reduction of the Company's environmental footprint in Norilsk and on the Kola Peninsula and shared details of the large-scale Sulphur Project, which targets a 75% reduction in sulphur dioxide emissions in the Norilsk Industrial District by 2023.

CO_2 emissions totalled

10 mt

Renewable energy sources provide

44% of electricity consumed

Share of coal in fuel consumed stands

at **1.1%**

Key climate change risks

Risk type	Risk description	Key risk factors	Risk mitigation activities
Climate change risks	**Lack of water resources:** water shortages in storage reservoirs of the Company's hydropower facilities may result in failure to achieve necessary water pressure at HPP turbines leading to limited power production and drinking water shortages in the Norilsk Municipality territory	Abnormal natural phenomena (drought) caused by climate change	• Establish closed water circuit to reduce water withdrawal. • Use a hydrological monitoring system on a regular basis to forecast water level in rivers and water bodies. • Cooperate with Roshydromet to set up permanent hydrological and meteorological monitoring stations and improve the accuracy of water level forecasts in rivers where the Company operates. • Dredge the Norilskaya river and reduce energy consumption at the production facilities, should the risk materialise. • Replace equipment at hydropower plants to increase power output through improving the performance of hydroelectric units (implemented in 2012–2021)
	Soil thawing: loss of bearing capacity of pile foundations, deformation of buildings and structures leading to their destruction	Climate change, average annual temperature increase (over the last 15–20 years). Increased depth of seasonal thawing	• Erect buildings and structures on soil or hard rock • Regularly monitor the condition of foundation beds for buildings and structures built on permafrost • Run geodetic control of changes in buildings' positions • Monitor soil temperature at buildings' foundations • Monitor the facilities' compliance with operational requirements for crawlspaces • Develop recommendations and corrective action plans to ensure safe operating conditions for buildings and structures

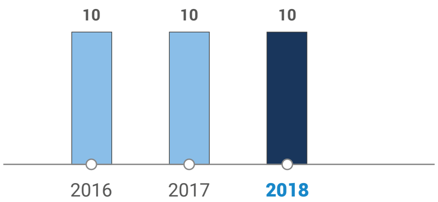
GREENHOUSE EMISSIONS

The Company assessed its GHG emissions in accordance with the existing national methodology. The assessment reflected the climatic conditions of operations, facilities upgrade and reconfiguration timelines. Direct GHG emissions total ca. 10 mtpa[1], including some 6.40 mtpa from fuel and energy assets, 3.45 mtpa from smelting operations, and up to 0.15 mtpa from transport and logistics. Next year, Nornickel intends to use the international methodology of GHG emission assessment for comparison purposes.

At the moment, Russian legislators are working to introduce statutory requirements for corporate GHG reporting.

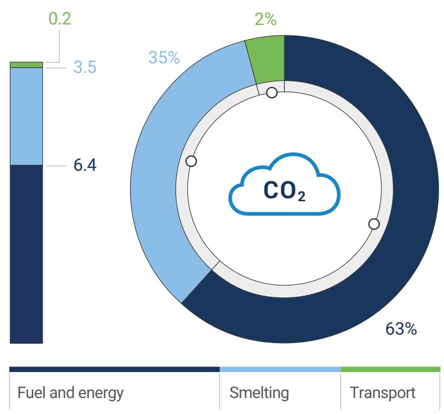
The Company is monitoring all legislative developments on this front to ensure compliance with the regulations.

Direct GHG emissions *(Scope 1, mt)*[1]



[1] *According to the GHG Emission Calculation Guidelines approved by Order No. 300 of the Russian Ministry of Natural Resources dated 30 June 2015.*

GHG emissions broken down by source *(mt)*



RENEWABLE ENERGY SOURCES

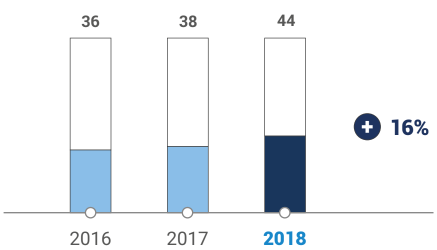
The European Union has set a target for a reduction of 20% in GHG emissions in the year 2020 compared with 1990 levels predominantly through shifting from fossil fuel to renewable energy sources.

The Company seeks to cover its energy needs primarily from renewable sources. Nornickel makes continuous efforts to reduce the consumption of such energy sources as diesel fuel, coal, and natural gas as well as to provide its enterprises with reliable and efficient low-carbon energy sources in the long term. As a result of Nickel Plant shutdown, the estimated coal consumption declined by 40–70 ktpa.

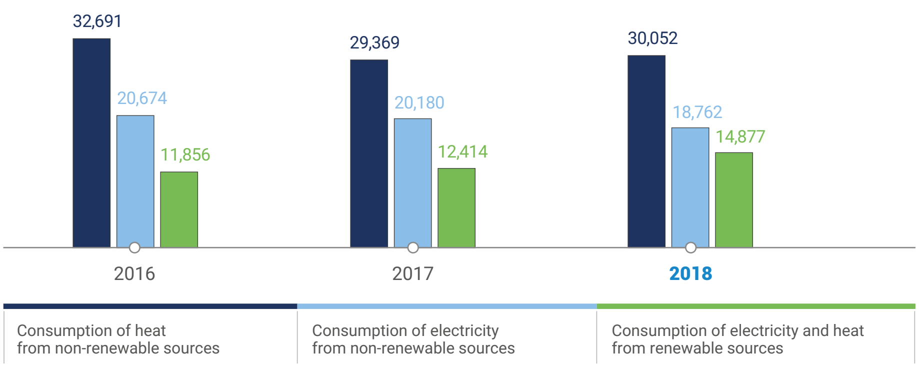
The Company's priority energy source is hydropower generated by hydropower plants: Ust-Khantayskaya and Kureyskaya HPPs (481 MW and 600 MW of installed capacity, respectively). In 2018, renewables accounted for 44% of total electric power generated by the Norilsk Nickel Group and 51% of power generated in the Norilsk Industrial District. The Company rolled out a project to replace hydropower plant equipment for rendering it more reliable and increasing power output through better performance of hydroelectric units (implemented in 2012–2021), thus laying out the groundwork to expand the share of renewables.

The use of other renewables such as solar, geothermal, and wind energy is limited, as Nornickel's major production assets are located beyond the Arctic Circle. There is not enough solar energy in winter because of polar night lasting approximately 60 days. Wind turbines are also inefficient due to changes in wind intensity: weather conditions range from dead calm lasting for weeks to snowstorms with a wind speed of up to 50 m/s.

Electric power generated from renewable sources *(%)*



Group's consumption of electricity and heat *(TJ)*



Power consumption and energy efficiency improvement

Nornickel is committed to the responsible use of heat and electricity. 85% of electricity is generated by the Company's fuel and energy companies supplying electric power to both intragroup facilities and third parties.

>>> *For more details on energy assets see*
p. 93–95

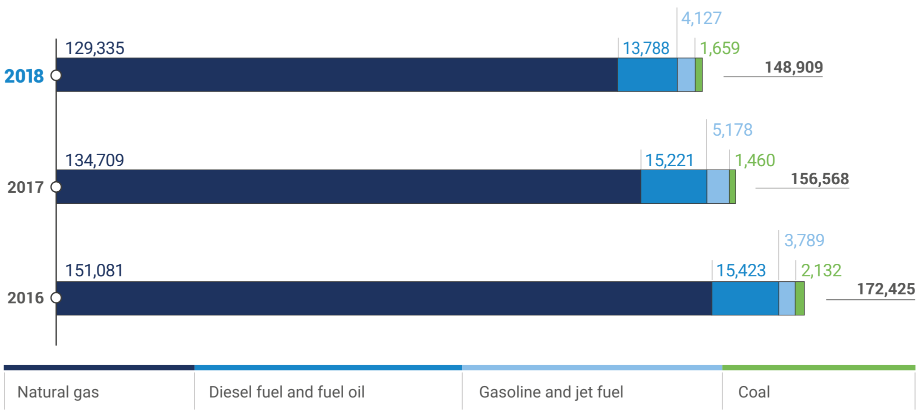
2018 saw the Company continue implementing initiatives in pursuance of Presidential Executive Order No 752 *On the Reduction of Greenhouse Gas Emission Volumes* of 30 September 2013. The Group's investment programme embraces several large-scale priority projects to fully unlock the potential of renewable power sources (hydropower) and ensure energy savings.

Major projects include:
- replacement of hydroelectric units and introduction of an automated dispatch system at Ust-Khantayskaya HPP;
- TPP-1 retrofit to enable automated process control;
- replacement of wooden supports at 110 kV lines with steel ones;
- construction of steam pipelines for the centralised heat supply system.

In 2018, significant efforts were invested in improving energy efficiency. As a result, the Group achieved savings of 87,822 tonnes of reference fuel (units). In the reporting year, per unit fuel consumption at TPPs stood at 265 g/kWh, down by 29 g/kWh vs target and by 17 g/kWh y-o-y. During the reporting year, the Company's subsidiaries saved 17.3 mcm of natural gas.

85% of electricity is generated by **the Company's fuel and energy companies**

Fuel consumption *(TJ)*



In 2018, the Company's spending under the programme totalled ca.

USD 92 mln (RUB 5.8 bn)

In 2018, the Group achieved savings of

87,822 tonnes of reference fuel

Group's electricity and fuel generation and consumption[2] *(TJ)*

Indicator	2016	2017	2018
Fuel consumption[3]	172,425	156,568	148,909
natural gas	151,081	134,709	129,335
diesel fuel and fuel oil	15,423	15,221	13,788
gasoline and jet fuel	3,789	5,178	4,127
coal	2,132	1,460	1,659
Energy from the Group's renewable sources (HPPs)	11,856	12,414	14,877
Electricity and heat procurement from third parties	8,968	10,483	10,931
Electricity and heat sales to third parties	19,882	19,503	18,926
TOTAL ENERGY GENERATION AND CONSUMPTION (1 + 2 + 3 – 4)	**173,367**	**159,962**	**155,792**

[2] *For a detailed breakdown of the Group's energy consumption by company, please see the 2018 Sustainability Report.*
[3] *Including the fuel used to generate energy for covering the needs of Norilsk.*

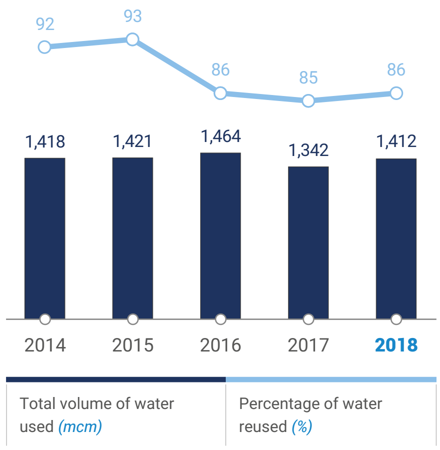
PROTECTION OF WATER BODIES

The Company's major production assets are located in regions with sufficient water resources. However, cognisant of the fact that certain regions of the world suffer from lack of water resources, the Company is extremely careful about its use of fresh water and strictly complies with restrictions applicable to industrial water withdrawal.

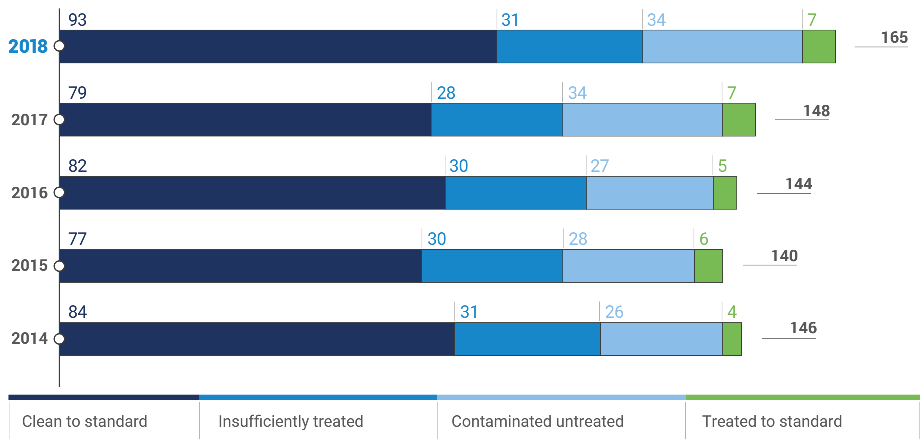
Nornickel's key facilities have a closed water circuit in place enabling them to reduce water withdrawal. Furthermore, the Company never withdraws water from protected natural areas. In 2018, 86% of all water used by the Company was recycled and reused. All sources of water used by the Company are subject to government-approved surveillance programmes for water and water protection zones.

Wastewater effluents also do not exceed the approved limits or have any major impact on biodiversity of water bodies and related habitats.

Volume of water used



Wastewater discharge *(mcm)*



EMISSIONS

High sulphur dioxide emissions resulting from smelting sulphide concentrates with high sulphur content is one of the Company's key environmental issues. Nornickel's strategic plan is to transform the Company into a cleaner and environmentally safe enterprise through implementing the Sulphur Project and environmental initiatives at Kola MMC. In 2019, the Company plans to introduce light unmanned aerial vehicles for monitoring environmental conditions on the Kola Peninsula and in the Norilsk Industrial District.

The Sulphur Project is the umbrella name for the second stage of Nornickel's large-scale environmental programme to achieve a 75% reduction in aggregate sulphur dioxide emissions across the Norilsk Industrial District by 2023. This will guarantee that Norilsk air meets the air quality requirements regardless of wind speed or direction. The total CAPEX for the Sulphur Project is estimated in the range of USD 2.5 bn.

As part of the programme, **Nadezhda Metallurgical Plant** will receive new facilities capturing sulphur-rich gases, while sulphur acid will be neutralised with natural limestone, with waste gypsum produced as a result. The gypsum will be stored in a dedicated structure. Under another project, a revolutionary continuous copper matte converting unit will be built on the Plant's site. Its emissions will also be used to produce sulphur acid. In the reporting year, the design of these projects was completed and submitted for state expert review.

Meanwhile, **Copper Plant** will see its elemental sulphur production capacities retrofitted and the entire converter section shut down, which will eliminate low-height emissions of low grade converter gases that have a pronounced effect on ground level concentrations of sulphur dioxide during unfavourable weather conditions. The total capacity for recovering sulphur from gases at Copper Plant is expected to reach ca. 280 ktpa of sulphur by 2022. Nornickel started implementing its Sulphur Project at Copper Plant in September 2018.

Kola MMC continues implementing the action plan to reduce sulphur dioxide emissions from Smelting Shop at the Nickel site by upgrading the equipment (reconstruction of feeding and sealing systems of ore-thermal furnaces, gas duct replacement, preparation of furnace charge for smelting, etc.) and lowering smelting shop utilisation through the Outotec project of concentrate separation and shipment facility at Zapolyarny while selling part of Kola MMC's concentrate to third parties. This is expected to have an environmental impact of at least 50% reduction of sulphur dioxide emissions in Nickel by 2020 vs 2015 and achieving maximum permissible emission rates.

In 2018, emissions of Norilsk Nickel's Russian operations totalled 1,927 kt, up 4.3% y-o-y. The growth was caused by a temporary increase in sulphur dioxide emissions at Polar Division. This increase resulted from the processing of an extra amount of sulphur-containing copper concentrate purchased from Rostec. Although the emissions became higher, they were still within the permissible emission rates applicable to the Company. Air pollutant emissions at Polar Division totalled 1,789 kt in 2018, up 84 kt y-o-y (+4.9%) mainly as a result of higher sulphur dioxide emissions (+5.3%).

In 2018, the Company made efforts to control pollutant emissions during unfavourable weather conditions with 140 instances of suspending operations at its metallurgical plants. To inform the local community of the environmental impact of its metallurgical operations on the quality of air in Norilsk, the Company maintains an automatic toll-free enquiry service line offering environmental forecasts for the city area to anyone dialling 420 007.

The Company's transport and logistics subsidiaries and units have all the necessary environmental permits and comply with the applicable environmental regulations, namely:

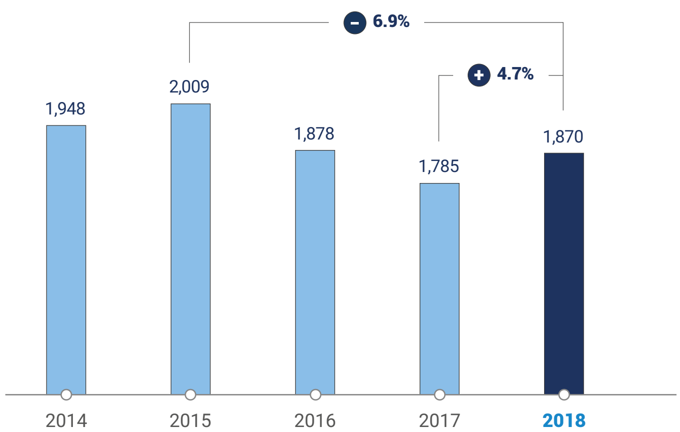
- air pollutant emissions from mobile sources do not exceed the maximum permissible concentrations;
- marine fuels are purchased from vendors that have all the required documents confirming fuel quality. The quality of fuel is verified by a third-party laboratory;
- onboard wastewater treatment plants are subject to annual certification for the avoidance of pollution and contamination of water bodies and marine environment;
- oil-containing water is transferred to specialist contractors at sea ports.

Air pollutant emissions across the Group *(kt)*

Air pollutants	2016	2017	2018
GROUP TOTAL	**1,936.4**	**1,845.6**	**1,926.6**
Including:			
sulphur dioxide (SO_2)	1,878.0	1,785.1	1,869.6
nitrogen oxide (NO_x)	10.1	11.4	11.2
solids	14.3	13.5	14.5
other	34.1	35.6	31.3
Polar Division			
TOTAL	**1,787.6**	**1,705.0**	**1,789.0**
Including:			
sulphur dioxide (SO_2)	1,758.2	1,675.9	1,764.7
nitrogen oxide (NO_x)	1.5	1.6	0.6
solids	6.2	6.1	5.5
other	21.7	21.5	18.2
Kola MMC			
TOTAL	**132.9**	**121.9**	**117.5**
Including:			
sulphur dioxide (SO_2)	119.7	109.1	104.8
nitrogen oxide (NO_x)	1.1	1.2	1.8
solids	7.4	6.9	7.6
other	4.7	4.7	3.3

Air pollutants	2016	2017	2018
Other branches and subsidiaries			
TOTAL	**16.0**	**18.7**	**20.2**
Including:			
sulphur dioxide (SO_2)	0.1	0.1	0.2
nitrogen oxide (NO_x)	7.5	8.6	8.8
solids	0.7	0.5	1.4
other	7.7	9.5	9.8

Sulphur dioxide (SO_2) emissions *(kt)*



PRODUCTION WASTE

The Company reuses most of its industrial waste as ca. 96% of the waste are class 5, i.e. non-hazardous waste. This is mostly waste from the mining and smelting operations, including rock and overburden, tailings, and metallurgical slags. Ca. 70.4% of all waste generated across the Company's operations in 2018 was reused, with the rest of waste disposed of at special facilities or transferred to special contractors for use and treatment. Waste generated from the extraction of ore mineral resources is used in backfilling of mined-out areas and pits, road filling, and strengthening of tailings pits.

A new tailings pit was commissioned at Talnakh Concentrator in 2017, allowing to dispose of 7 mt of tailings. The facility was built using the most advanced technologies to reduce environmental impact of the waste.

In 2018, as part of hot commissioning testing under the comprehensive project to upgrade and retrofit Talnakh Concentrator (first tailings pit construction stage) to increase its total ore capacity to 16 mtpa, the Company prepared the tailings pit floor for the safe operation of hydraulic structures, including the construction of barriers and an initial slope to ensure the safe operation of free-flow structures. This helped dispose of 7,311.532 kt of tailings.

The Company currently operates four tailings pits: Lebyazhye, tailings pits of Nadezhda Metallurgical Plant, Talnakh Concentrator, and Kola MMC. A tailings pit of Bystrinsky GOK has also been built and is being currently commissioned. The Company conducts regular monitoring of the environmental conditions at tailings pits and within the area of their environmental impact for the purpose of observation, assessment and forecast of environmental changes as well as for the prevention and mitigation of adverse environmental impact.

The Company's waste management efforts are focused on the following:

- development of waste disposal sites to reduce human impact on the environment;
- waste reuse maximisation.

Waste generation by hazard class *(kt)*

Hazard class	2016	2017	2018
5	32,118	30,722	29,517
4	1,114	1,190	1,191
3	30	13	15
2	5.8	2.4	1.1
1	0.1	0.1	0.1
Total	**33,268**	**31,927**	**30,724**

ENVIRONMENTAL IMPACT ACROSS NORILSK NICKEL'S FOREIGN OPERATIONS

Norilsk Nickel Harjavalta
The Company has all the necessary environmental permits and operates a certified integrated management system that meets the requirements of ISO 9001, ISO 14001 and OHSAS 18001.

Norilsk Nickel Harjavalta's main environmental impact consists in the emissions of ammonia (NH3) and nickel (Ni), and discharges of nickel, sulphates (SO42) and ammonia ions (NH4+). In 2018, Norilsk Nickel Harjavalta met all permit requirements for emissions, discharges and waste disposal volumes. Lower waste volumes in 2018 (down 2.7 kt y-o-y) are a result of switching to the Company's feedstock that is less contaminated with impurities as compared to third party materials.

Environmental impact metrics of Norilsk Nickel Harjavalta

Item	2016	2017	2018
Industrial wastewater, '000 m^3	771	899	988
Pollutants in industrial wastewater, t			
Ni	0.4	0.5	0.6
$SO_4{}^2$	22,457	25,853	30,189
NH_4+ (rebased to nitrogen)	49.5	60.3	69.6
Total water consumption, mcm	10	11.1	11.8
Air pollutant emissions, t			
Ni	1.6	1.7	1.2
NH_3	70	69	84
Waste generation, kt	7.0	5.5	2.8
Waste disposal, kt	0.8	0.8	1.1

Nkomati
The company is required to comply with both national environmental regulations and Norilsk Nickel Group's corporate standards. Nkomati pays close attention to environmental safety, is certified and regularly audited for compliance with ISO 14001.

Environmental impact metrics of Nkomati

Item	2016	2017	2018
Total water consumption, mcm	0.333	0.064	0.429
Waste generation, t	921	431	358
Waste disposal, t	1,611	845	725
Environmental expenditures, USD mln	0.42	0.27	0.31

BIODIVERSITY CONSERVATION

Cooperation with nature reserves

Nornickel's production facilities are adjacent to nature reserves on the Taimyr and Kola Peninsulas. Kola MMC's sites are only 10–15 km away from the Pasvik and the Lapland Nature Reserves (Murmansk Region). The Company's Polar Division is located some 80–100 km away from the buffer zone of the Putoransky Reserve (Krasnoyarsk Territory).

For over a decade now, Nornickel has annually provided hundreds of millions of roubles to nature reserves for the purpose of preserving the unique Arctic environment. This is in line with Nornickel's strategy set to embrace green technologies in the next five years through a new investment cycle to secure sustainable development.

In the Trans-Baikal Territory, the Company supports the R&D initiatives and environmental awareness programmes of the Relict Oaks State Reserve.

The Pasvik Nature Reserve

(Kola Peninsula)

The Pasvik Nature Reserve is home to rare animal species listed on the international and Russia's Red Data Books. Since 2006, as part of the contract signed with Kola MMC, the Pasvik Nature Reserve has been carrying out an ecological assessment of the natural environment in the area of Pechenganickel Plant (Zapolyarny, Nickel and their suburbs, including the Pasvik State Nature Reserve), and developing a long-term environmental monitoring programme.

Nornickel supports scientific research carried out by the nature reserve, its efforts to protect natural and cultural heritage, promote tourism and environmental education. The Company helps establish an international natural historical open-air museum on the Varlam island. Nornickel sponsored the book called The Varlam Island – the Pearl of Pasvik.

In addition, in 2018, the Company provided financial assistance for purchasing a mobile environmental monitoring lab.

The Lapland State Nature Biosphere Reserve

(Kola Peninsula)

The Lapland State Nature Biosphere Reserve is one of the largest protected areas in Europe covering 278,000 ha. Established with the aim of saving the wild reindeer from extinction, it now boasts over 1,000 reindeer, the largest reindeer herd in Northern Europe. The European beaver population has also been successfully restored.

Since 2002, the Lapland Biosphere Reserve has entered into contracts to reclaim disturbed natural environment in the areas affected by multi-year emissions from Severonickel Plant, and monitor areas adjacent to Monchegorsk site and the Lapland Biosphere Reserve. The data obtained during a scientific research provided a basis for the subsequent contractual work to reclaim disturbed lands, and bring about sanitary and fire protection improvements in the forest areas. The Company also provided financial aid for the Lapland Biosphere Reserve to make a new nature trail and publish books about Oleg Semyonov-Tyan-Shansky and Herman Kreps, the reserve founders.

The Putoransky State Nature Reserve

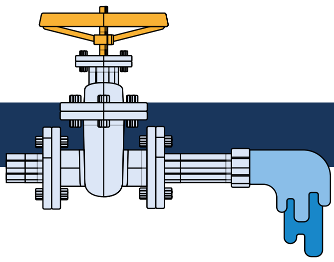
(Taimyr Peninsula)

In 2018, the Putoransky State Nature Reserve kept implementing projects selected under Nornickel's World of New Opportunities charitable programme. The projects involved annual open air events in the protected area, reclamation of lands for commercial reindeer herding and dwelling of indigenous ethnic minorities, research and environmental activities.

Nature conservation programmes

Nornickel is committed to a proactive approach to environmental protection and sustainable use of natural resources. To this end, the Company is deploying development programme 2016–2023 that involves major upgrade of its production capacities and radical environmental safety improvements.

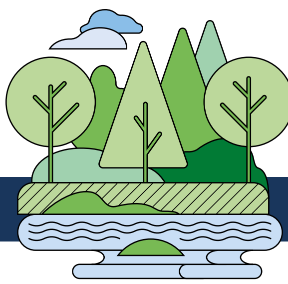
Environmental education and experience sharing are another priority area. The Company organised The Environment Protection and Sustainable Development in the North VII environmental forum held in Murmansk on 15 and 16 November 2018. The forum offered a venue for discussing Arctic region development in terms of environment and corporate social and environmental responsibility, sharing experience of implementing environmental protection initiatives in the Far North and the Environment national project in northern territories, and integrating the best available and cutting edge technologies. More than 200 experts from all over Russia and Arctic region attended the event.



Water

Norilsk Nickel's Polar Division is working on a project to breed valuable fish species and release them into natural water bodies. In 2018, the Company released 475,000 Siberian sturgeon fingerlings into the Yenisey River for the purpose of reproduction of aquatic bioresources. The initiative was supposed to compensate for the damage done to water bodies during the construction of the new tailings pit for Talnakh Concentrator and sand extraction at the Seredysh Island. The Company plans to continue valuable fish breeding and release projects in 2019.

2018 also saw Nornickel continue landscaping of the Dolgoye Lake area in Norilsk.



Landscaping and sanitary clean-up

In 2018, Polar Division together with authorities of cities where the Division operates contributed to the sanitary improvement and landscaping of urban territories. In summer, the Company also contributed to the roadside clean-up, water body protection, waterfront landscaping and facelift of several camping sites. Furthermore, Polar Division planted trees at the Zapolyarnik stadium.

Around 190 employees of the Company joined the annual environmental marathon held in Norilsk in 2018. Volunteers organised ca. 100 events involving 2,500 people of Norilsk, held 20 clean-up days as well as festivals and workshops, planted 100 trees, collected 25 tonnes of garbage, and improved several urban facilities.

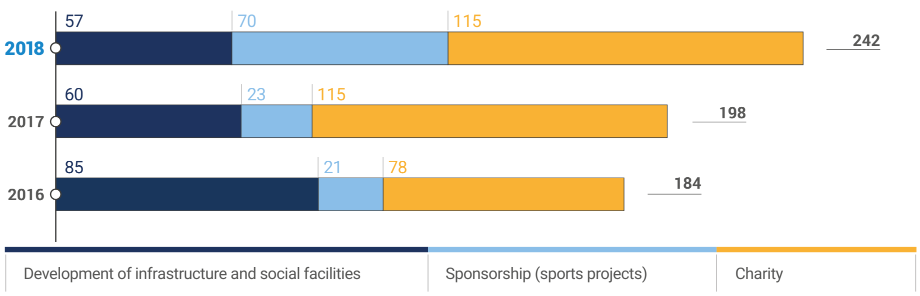
SOCIAL AND CHARITY INITIATIVES

The Norilsk Nickel Group is the world's largest metals and mining company, playing a significant role in the Russian economy. Its geography and financial performance determine the Company's strong impact on the social and economic life of the regions where it operates. With its key facilities located in one-company towns, Nornickel seeks to maintain favourable social climate and comfortable urban environment providing the Company's employees and their family members with ample opportunities for their creative pursuits and self-fulfilment.

The core principle behind this interaction is the partnership involving all stakeholders in the development and implementation of social programmes based on the balance of interests, cooperation and social consensus.

The harsh climate faced by the Company's employees in life and at work, remoteness of the Company's key industrial facilities and the toughening competition for human capital across the industry are the factors for Nornickel to make its social policy highly effective, human-centred and contributing to the Company's excellent reputation as an employer.

Social expenses[1] *(USD mln)*



1 *Exludind expenses of social programmes for employees.*

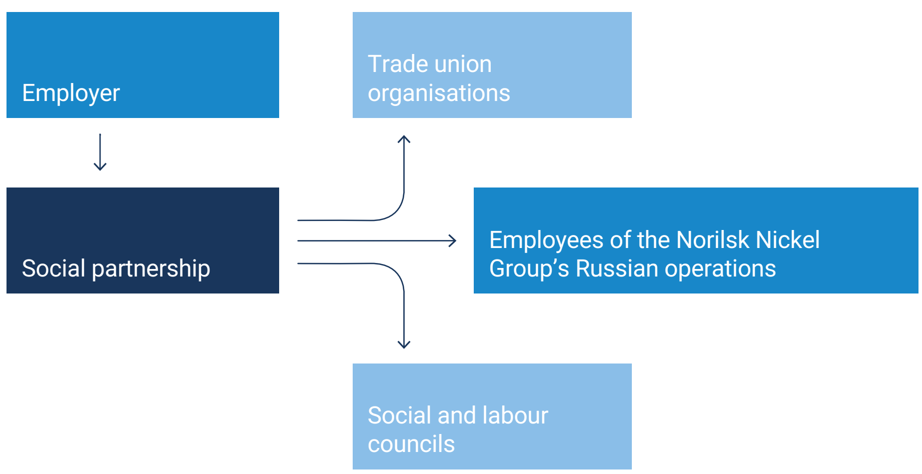
SOCIAL PARTNERSHIP

Russian operations of the Norilsk Nickel Group have established a social partnership framework aimed at reconciling the interests of employees and employers on matters pertaining to the regulation of social and labour relations.

The Company meets all obligations under the Labour Code of the Russian Federation, collective bargaining agreements and joint resolutions.

In regulating labour relations, employee interests are represented by social and labour councils and trade union organisations.

Social partnership framework



In regulating labour relations, employee interests are represented by **trade unions** and **social and labour councils**

Trade union organisations

As at the end of 2018, 10.8% of employees engaged in the Group's Russian operations were members of trade union organisations.

Trade unions of the companies located in Norilsk and on the Taimyr Peninsula form a single Trade Union Organisation of the Company and its subsidiaries. Trade unions of the companies operating in the Murmansk Region are joined under two umbrella trade union organisations – Regional Trade Union Organisation of Kola MMC and its Subsidiaries Employees and Primary Trade Union Organisation of Kola MMC.

Trade union organisations of the Company and its subsidiaries, Kola MMC, Bystrinsky GOK, NordStar Airlines and Zapolyarye Health Resort are all members of the Trade Union of MMC Norilsk Nickel Employees, an interregional trade union organisation. In the reporting year, the relationship between the employer and the Trade Union was governed by the Social Partnership Agreement signed in 2014 to formalise implementation procedures for joint initiatives ensuring sustainable performance, operating and financial excellence, employee welfare, health and safety, and enhancement of social benefits.

The trade unions of transport and logistics divisions are members of the Yenisey Basin Trade Union of Russia's Water Transport Workers (Krasnoyarsk).

In order to develop interregional social partnership, Interregional Cross-Industry Association of Employers "Union of Entities of the Copper and Nickel and Supporting Industries" (the Association of Employers) was founded by the Group's Russian companies in the Krasnoyarsk Territory and the Murmansk Region. In November 2018, the Association of Employers and the interregional public organisation initiated collective bargaining to develop and sign an interregional cross-industry agreement for the key players of the copper and nickel and supporting industries for 2019–2022. Signing the agreement and increasing the number of organisations to apply its provisions are slated for 2019.

Social and labour councils

In 2018, the share of employees represented by social and labour councils across the Group stood at 78%.

The Group's companies located on the Taimyr Peninsula and in the Murmansk Region established social and labour councils back in 2006 to represent the interests of employees who are not members of trade unions. Chairs of the local councils make up the Social and Labour Council of MMC Norilsk Nickel and the Social and Labour Council of Kola MMC.

Offices for operational, social and labour matters

In addition to the Corporate Trust Service, the Group launched offices for operating, social and labour relations back in 2003. They are primarily tasked with response to employee queries, control of their processing, and prompt resolution of conflicts. On a monthly basis, the offices monitor the staff's social status, enabling us to solve reported issues in a timely manner. In 2018, the Group's companies in the Norilsk Industrial District ran 24 offices that received about 52,000 queries and requests mostly from employees (78%), former employees (21%) and local communities (1%). They mainly focused on social and working matters (72.5% of queries and requests), legal matters (26%) and other matters (1.5%).

The Group has also set up collective bargaining commissions, labour dispute commissions, social benefits commissions/committees, social insurance commissions, health and safety commissions/committees, social and labour relations committees, etc.

Collective bargaining agreements

In 2018, the share of employees covered by collective bargaining agreements stood at 81%.

In 2010, the Group entered into 21 collective bargaining agreements, including two entities that signed these agreements for the first time.

To streamline efforts on the employment-related social partnership, in 2018, the Group prepared guidelines for developing and entering into collective bargaining agreements. The collective bargaining agreements of the Group's Russian companies comply with the applicable laws and meet the majority of employee expectations.

There were no social or labour disputes during the reporting period.

78%

the share of employees represented by social and labour councils across the Group in 2018

81%

of employees covered by collective agreements in 2018[1]

Engaged in Norilsk Nickel's Russian operations were members of trade unions as at the end of 2018

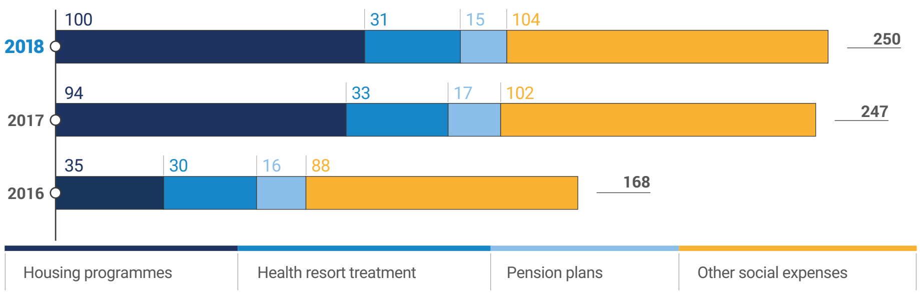
11% **of employees**

[1] *Including entities that have no collective bargaining agreements in place but have approved local regulations that make MMC Norilsk Nickel's Collective Bargaining Agreement effective at these entities, including foreign assets.*

Social programmes for employees

HEALTH IMPROVEMENT PROGRAMMES

Social programmes for employees *(USD mln)*



The harsh climate of the Far North and the heavy working conditions of the mining facilities require that the Company make extra investments in health programmes for employees and their families. Health resort treatment programmes are a key priority in Nornickel's social policy.

In 2018, about 11,000 employees and their families had recreation and treatment in Zapolyarye Health Resort (Sochi). Some 12,300 people spent their vacations in other health resorts, including approximately 4,400 employees who travelled to Bulgarian resorts and about 1,700 staff members who went to Hainan (China). The Company compensates their employees an average of about 85% of the trip voucher cost.

The health resort treatment programme is designed to prevent the development of chronic diseases among the employees' children and give them an opportunity to take full advantage of their summer vacations. As part of this initiative, about 1,500 children spent their holidays in Anapa and Golden Sands (Bulgaria).

SPORTS PROGRAMMES

Healthy lifestyle is one of the focus areas in the personal growth of the Company's employees facing the harsh climate of the Far North. Sports programmes seek to promote a healthy lifestyle, foster team spirit, improve interpersonal communication and develop corporate culture.

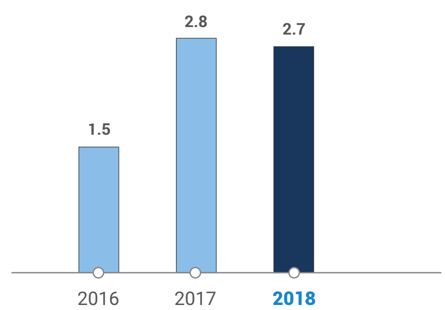
The Company pays special attention to corporate competitions, including the employees' popular sports such as futsal, volleyball, basketball, alpine skiing, snowboarding and swimming. Family sports contests are yet another focus area. One of Nornickel's social policy highlights is the support of amateur sports.

To ensure further development of amateur hockey, in 2018, the region of Norilsk hosted the Night Hockey League games as part of Conference North with eleven teams including the Company's employees taking part in the event.

Events for local communities include annual Spartakiads and various mass sports events engaging the Company's employees, their family members and the region's community.

In 2018, about 27,000 employees and local residents took part in the corporate mass sports events, spartakiads and sports initiatives held by the Company's facilities and Russian entities in the Norilsk Nickel Group.

Sports expenses *(USD mln)*



HOUSING PROGRAMMES

In 2018, the Company continued implementing the Housing Programme Policy adopted in 2017. To optimise the effort, two housing programmes, Our Home and My Home, were merged into one, Our Home / My Home, featuring better terms of participation and a broader coverage of the Group's companies. Since the launch of the programme back in 2010, the Company has purchased 3,826 apartments.

As part of the Our Home / My Home programme, Nornickel purchases ready-for-living apartments in various Russian regions at its own expense, and provides them to eligible employees under co-financing agreements. Apartments are usually purchased in the Moscow and Tver Regions, as well as in the Krasnodar Territory, with the Company seeking to buy properties located in close proximity to enhance the employees' living standards by developing additional infrastructure and optimising the scope of maintenance tasks assigned to the property management company.

The Company pays up to half the cost of the apartment of about USD 47,000 (but in any case no more than RUB 3 mln), with the rest paid by the employee within a certain period of employment with the Norilsk Nickel Group (from five to ten years). The cost of housing remains unchanged for the entire period of the participation. Title is registered at the end of participation in the programme, but the employee may move in immediately after receiving the apartment.

The Company also runs the Corporate Social Subsidised Loan Programme for Employees of Nornickel that was phased from a pilot to an ongoing project. This programme was developed primarily as a tool to retain highly qualified staff, with employees at Polar Division and Kola MMC entitled to an interest-free loan to make a down payment and to a reimbursement of a certain share of interest on their mortgage loan. Overall, more than 200 employees took part in the programme.

Since 2010, the Company has purchased

3,826 apartments

under My Home / Our Home housing programme

PENSION PLANS

Nornickel offers its employees non-governmental pension plans. Under the Co-Funded Pension Plan, the Company and its employees make equal contributions to the plan. The Complementary Corporate Pension Plan provides incentives for pre-retirement employees with considerable job achievements and an extensive employment record.

Pension plans coverage

Item	2016	2017	2018
Co-Funded Pension Plan			
Financing, USD mln	7.8	8.6	7.7
Participants, thousand people	17.3	15.7	13.9
Complementary Corporate Pension Plan			
Financing, USD mln	6.7	8.5	6.7
Participants, people	614	718	545

SOCIAL INVESTMENTS

Relocation programme

In 2018, Nornickel and the Government continued joint implementation of a long-term target programme to relocate people from Norilsk and Dudinka (Krasnoyarsk Territory) to Russian regions with more favourable climatic conditions. Introduced in 2011, this ten-year programme provides for 11,265 families (or 1,126 families per year) residing in Norilsk and Dudinka to be relocated from these municipalities as entitled to housing subsidies.

The Company acts as a programme sponsor. The programme budget totalled RUB 8.3 bn. Since the programme launch, the Company has transferred to the local budget a total of USD 183 mln (RUB 7 bn), including USD 13,2 mln (RUB 830 mln) in 2018. In 2011–2018, 7,107 families purchased new homes on the "mainland" and moved there, including 5,847 families from Norilsk and 1,260 families from Dudinka.

Relocation programme results

Item	2011	2012	2013	2014	2015	2016	2017	2018	Total
Company contribution, USD mln	39	28	27	26	22	14	14	13	**183**
Total apartments purchased as at 31 December	1,137	1,013	1,199	1,038	908	627	652	533	**7,107**

Support for local communities

The Company makes a significant contribution to the development of local communities and runs social programmes and projects. These initiatives are focused on securing an accessible and comfortable living environment, providing environmental protection and supporting local communities. The Company rolls out its programmes and projects both independently and in partnership with local authorities, regional and federal government bodies, non-profit organisations, public organisations and professional associations.

In addition, the Company supports platforms enabling an exchange of views by representatives of government, business and society as well as facilitating a constructive dialogue on matters crucial for the regional economy, business activities and social life. The fact that two regions of the Company's operations are located along the nation's borders (the Murmansk Region and the Zabaykalsky Kray) and two are included in the Russian Arctic (the Krasnoyarsk Territory and the Murmansk Region) makes forums, conferences and other similar events a vital driver for developing the regions both socially and economically, attracting investments, generating solutions for matters related to environmental protection, development of the Arctic fleets, ports and navigation along the Northern Sea Route. At the end of the day, these activities help integrate the regions into an economic space, both with the Arctic countries and with the rest of the world.

As part of the Year of Volunteer in Russia in 2018 under Presidential Executive Order No. 583 dated 6 December 2017, Nornickel and the city administrations in Krasnoyarsk, Norilsk, Chita and Monchegorsk entered into a number of cooperation agreements to support the volunteer movement, implement the state policy related to the development of free will activity and volunteering, as well as encourage participation in charitable and voluntary activities. The agreements resulted in agreed and implemented action plans to promote volunteering in the regions where the Company operates.

The Company makes a significant contribution to the development of **local communities**

Nornickel and the city administrations in Krasnoyarsk, Norilsk, Chita and Monchegorsk entered into **a number of cooperation agreements**

Support of indigenous peoples

Nornickel recognises the right of indigenous northern minorities to preserve their traditional way of life, stick to the age-old environmental management practices and have decent living conditions. The Company adopted the Indigenous Rights Policy that defines Nornickel's key commitments in this aspect. In 2018, there was no record of the Company violating the rights of indigenous minorities. The Company's representatives are also members of indigenous northern minority commissions organised by local authorities.

For several years now, the Company has been supporting initiatives to improve living standards of the Taimyr Peninsula's indigenous people. 2018 saw further implementation of the Comfortable Taimyr project, under which the Company will invest to construct 2,300 sq m of housing in the Tukhard settlement, where indigenous people live.

In an attempt to preserve national traditions and culture of indigenous Northern minorities, the Company participates in staging annual authentic festivals for tundra inhabitants on the occasion of the Reindeer Herder's Day and the Fisherman's Day and provides presents and prizes for the winners in various competitions. To that end, the Company purchases items that enjoy the greatest popularity among locals, including tents, gasoline power generators, household equipment, outboard motors, inflatable boats, GPS navigators, sleeping bags, binoculars, etc. The Company also offers regular financial help to public Taimyr-based organisations.

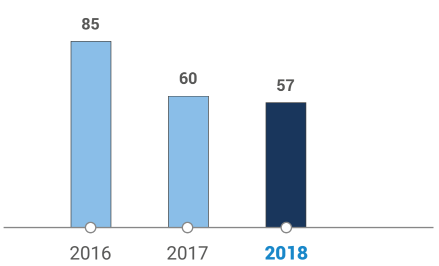
To ensure the sustainable development of the Taimyr region, the Company provides assistance to indigenous peoples of the North, including by helping to organise air transportation and supplying construction materials and diesel fuel.

Children of reindeer herders in the Tukhard tundra are provided with comprehensive meals as part of the Food Programme carried out in association with the Dudinka Department of Education. In line with the effective agreements, foods for the local hospital and primary school are supplied by Norilskgazprom's Procurement Unit at below-market prices.

INFRASTRUCTURE DEVELOPMENT

Nornickel is actively involved in the development and renovation of social infrastructure across its footprint, looking to create accessible and comfortable environments for the work and life of the Company's employees.

Financing of development and innovation of social infrastructure *(USD mln)*



Given the high importance of the XXIX International Winter Universiade to be held in 2019 in Krasnoyarsk, in 2018 the Company focused its key efforts on performing the cooperation agreement signed between MMC Norilsk Nickel and Krasnoyarsk municipal authorities and intended to improve the city landmarks. Pursuant to the agreement, Nornickel was heavily involved in a number of large-scale projects implemented as part of the public-private partnership to prepare the city for hosting athletes and guests.

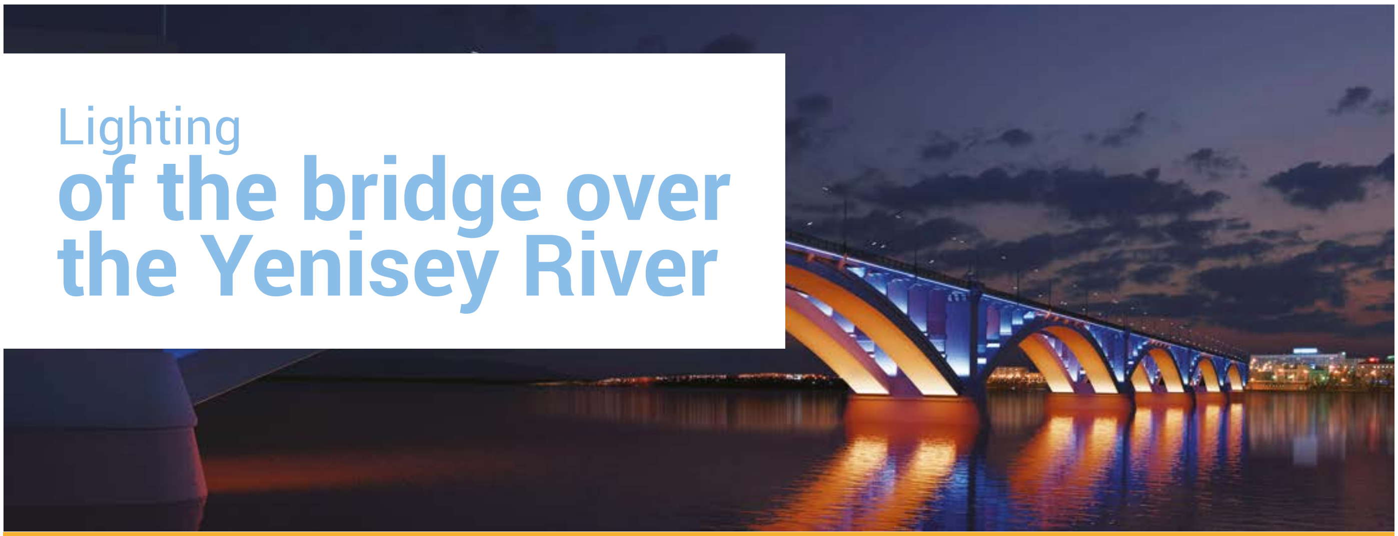
The Kommunalny Bridge over the Yenisey River saw the launch of an architectural lighting. The left embankments of the Yenisey River and the Kacha River along with their adjacent territories were improved.

A park area (the Bobrovy Ostrov) was created on the adjacent territory to the Bobrovy Log Fun Park on the Bazaikha River, the venue of the XXIX International Winter Universiade in 2019. The park area boasts sports and playgrounds, walkways, bike lanes, recreation areas, and a foot and bike bridge across the Bazaikha to make the park accessible for people with limited mobility. The access roads to the Bobrovy Log Fun Park are provided with decorative noise barriers and planted large trees.

In 2018, the Company's spending on Krasnoyarsk redevelopment totalled about USD 5.6 mln (RUB 351 mln).

In 2018, Nornickel continued its work to upgrade the civil section of Norilsk Airport in accordance with the memorandum of intent signed by MMC Norilsk Nickel and the Federal Air Transport Agency under the Russian Transport Development Federal Programme. In 2018, the third stage of the airport reconstruction was

Lighting of the bridge over the Yenisey River



completed. The construction period saw the renovation of the 1,081-meter runway, the upgrade of a taxiway, the partial repairs of the pavement in the apron for civil aircraft, installation of a drainage system, new light signalling and meteorological equipment, partial reconstruction of power supply facilities, and installation of flight radio equipment. Today, the upgraded runway meets the latest flight safety requirements. On 21 September 2018, the airport received a certificate of compliance from the Federal Air Transport Agency.

Norilsk Airport reconstruction

In 2018, Nornickel and the Zabaykalsky Kray Government continued performing the cooperation agreement, which serves as the basis for the Company to provide USD 6.2 mln (RUB 430 mln) for the following social projects of the Zabaykalsky Kray Government and municipalities:

- launched Quantorium, a science park in Chita, at the Company's discretion; upgraded rooms and premises of the Junior, children and youth centre for engineering; provided state-of-the-art equipment for the science park to run ship-building, aircraft engineering and IT projects;
- completed socially important infrastructure projects in the territory of 34 municipalities as part of the Zabaykalsky Kray of the Future and Successful School projects;
- continued refurbishment of the Dekabristov Square in Chita, with the Zabaykalsky Kray Walk of Fame opened in Bagulovaya Alley to immortalise the names of the region's prominent residents;
- financed loft platform in the Chita centre to become a multi-purpose platform for creativity development;
- financed initiatives as part of Creating a Comfortable Urban Environment, a top priority project.

SUPPORT FOR SPORTS PROJECTS

Our support for sports has been increasingly broad-based and comprehensive as we extend our efforts beyond financing occasional events to invest in sports facilities, new schools, sports grounds and mass events promoting fitness and healthy lifestyles.

As part of this effort, the Company sponsored the second Norilsk Nickel Cup – New Hopes, an inter-regional football tournament organised by the Football Union of Russia and MMC Norilsk Nickel. The competition took place in the Krasnoyarsk and the Zabaykalsky Kray, the Murmansk Region and Norilsk, bringing together 96 teams and over 1,100 young players.

Nornickel also supported the Futsal to Schools programme in the Zabaykalsky Kray, involving 63 schools in Chita and the Gazimuro-Zavodsky District. The schools received gym equipment, gear, uniforms, and education materials for sports teachers. One of the project's key goals is to identify gifted children for further training.

GOVERNMENT RELATIONS

The Company interacts with federal legislative and executive authorities, and civil society institutions. The Company is represented and expresses its interests in 21 committees, councils, commissions, expert teams, and working groups established by government bodies in association with the business community, thus supporting socially important projects. Currently, the Company mainly cooperates with the working groups and councils of the State Commission for Arctic Development and the Government Commission on the Use of Natural Resources and Environmental Protection.

The Company also actively participates in the work of regional authorities' expert boards across its geographies including the Governor's Council for Strategic Development and Priority Projects of the Krasnoyarsk Territory.

Representatives of the Company take part in parliamentary sessions and round table discussions organised by the Federation Council and State Duma of the Federal Assembly of the Russian Federation, Government of the Russian Federation, Russian Union of Industrialists and Entrepreneurs, Chamber of Commerce and Industry of the Russian Federation, Association of Managers (an interregional public organisation), etc.

The Company's experts engage in draft regulation discussions held by the Open Government and by community councils of the federal executive bodies, as well as in anti-corruption due diligence and regulatory impact assessments. All of that helps maintain a constructive dialogue with the government, cut red tape and improve the nation's business climate.

WORLD OF NEW OPPORTUNITIES CHARITABLE PROGRAMME

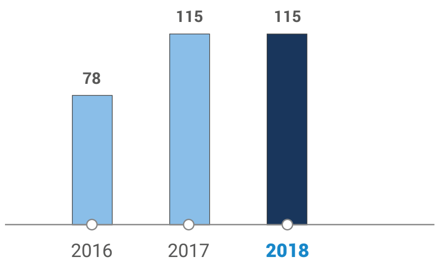
The programme has three focus areas:

Partnership
Innovations
Development

The Company runs World of New Opportunities, a charitable programme to encourage and promote sustainable development of local communities. The programme primarily aims to develop soft skills in local communities, demonstrate and introduce new social technologies, support and promote public initiatives, and encourage cross-sector partnerships.

In 2018, after the commissioning of Bystrinsky GOK in the Zabaykalsky Kray, the World of New Opportunities geography expanded to cover the Gazimuro-Zavodsky District which now hosts Nornickel's Socially Responsible Initiatives Competition, Arctic.PRO R&D marathon and School of Urban Competencies.

Charity expenses *(USD mln)*



Partnership

This area focuses on supporting volunteer initiatives of local activists, fostering new skills and developing local expertise.

In spring 2018, the Company initiated the We Are the City! social technologies forum in Norilsk and Monchegorsk to bring together local communities, inform them of the new trends and best practices in charity and volunteering, and share successes in solving social issues. In the lead-up to the forum, locals got a chance to meet a wide range of experts who imparted their ideas on upbringing children, finding your own way in life, personal development, etc. The forum venues were attended by a total of 1,500 people.

On the Company Day, Nornickel traditionally stages the We Are the City! PicNick event in Norilsk, Monchegorsk and Zapolyarny. PicNick is a festival "for a good cause" organised by local activists and participants of the World of New Opportunities programme (winners of the Socially Responsible Initiatives Competition and socially minded entrepreneurs) and Plant of Goodness corporate volunteer programme. It ran as a street festival with a project fair, workshops, training sessions, etc. For the first time, PicNick was held in Chita on the Miner's Day.

All events arranged by the Company served to raise charity awareness in local communities and encourage public-private partnerships. In 2018, the Socially Responsible Initiatives Competition, which aims to support public initiatives, received 426 project bids, 116 of which were approved for funding. The grant fund totalled USD 2 mln (RUB 125 mln).

Innovations

This area focuses on facilitating the introduction of advanced technologies, fostering R&D potential and encouraging innovation in engineering. Its target audience are schoolchildren, university students and adult activists interested in science and frontier technologies.

For the fifth year in a row, the Company hosted the Arctic.PRO R&D marathon aiming to encourage R&D creativity, innovations in engineering and thirst for knowledge among children and young people. 1,600 students aged 12 to 15 took part in the marathon, while 25 more children attended the Winter R&D School in Yekaterinburg.

For the fourth year running, the Company was a general partner of the All-Russian Science Festival held by Moscow State University. Importantly, Murmansk was selected for the first time as the event's central regional venue. In two days, the festival was attended by 3,500 people, with 50 venue organisers helping to stage it.

In 2018, we kicked off the I Make competition for young inventors. Schoolchildren from across the cities where the Company operates sent their inventions to take part in the contest. Of the 103 bids received by the organisers, eight best projects were selected to compete at the International Young Inventors Award in Indonesia, where Nornickel's delegation won 3 gold and 3 silver medals.

Development

This area focuses on engaging active citizens and SMEs to address social issues of local communities using available business technologies.

One of the Company's initiatives was to provide training in Social Entrepreneurship. With assistance and guidance from experienced coaches (active businessmen), trainees are expected to develop business plans and present them at the Investment Session. The session saw the graduates submit some 24 business projects, with four of them awarded interest-free business loans from the Company.

In 2018, Nickel hosted the second Convention of Social Entrepreneurs from the North attended by 150 active and would-be social entrepreneurs. The convention provided a platform to discuss trends, prospects and measures to support social entrepreneurship in the Polar regions and analyse relevant national and international best practices. In the run-up to the event, experts and participants from other regions took part in a quest to learn more about social entrepreneurship in the Pechengsky District.

SPONSORSHIP

Rosa Khutor Ski Resort

In 2016–2019, Nornickel will invest USD 250.5 mln in the development of the Rosa Khutor ski resort as part of the programme to support mass sports in Russia. The funds will be used to develop new ski pistes and lifts and build new recreational and sports facilities, helping to transform the Olympic resort into a year-round tourist attraction. By way of consideration, Nornickel was granted a minority stake in the Rosa Khutor project.

Russian Olympic Committee

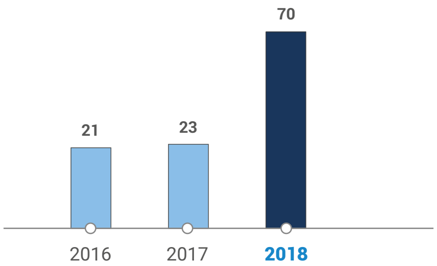
As a partner of the Russian Olympic Committee and the Russian Olympic team, Nornickel supports youth and high performance sports, among other things, by facilitating the implementation of Olympic educational programmes developed by the Russian International Olympic University.

Another area of cooperation between the Company and the Russian Olympic Committee is the inclusion of Nornickel's regions of operation in the pan-Russian Olympic Patrol project. In 2018, the Olympic Patrol visited Krasnoyarsk and Chita, giving local children a chance to meet renowned athletes who shared their personal Olympic experiences, took part in autograph and photo sessions, and held workshops and fitness tests.

The Company sponsored the Russian Youth Olympic team, which delivered a strong performance at the 3rd Summer Youth Olympics in Buenos Aires.

We also helped organise the 29th National Olympic Day, a sports festival hosted by 80 cities across Russia to promote healthy lifestyle, mass fitness and sports.

Financing of sports projects
(USD mln)



Football Union of Russia and Russia's national football team

Nornickel remains an official partner of the Football Union of Russia and Russia's national football team. The Company is the Football Union's exclusive partner in the metals sector.

The Football Union of Russia and Nornickel staged the Nornickel Cup – New Hopes inter-regional tournament that brought together youth teams from the Krasnoyarsk and the Zabaykalsky Kray and the Murmansk Region. The winning team was awarded a trip to the Futsal Academy's training camp.

International University Sports Federation

The Company will remain a partner of the International University Sports Federation (FISU), an universiade organiser, until May 2019 to support the international university sports movement. As in the previous year, we backed the FISU Volunteer Leaders Academy international forum held in June 2018 and attended by leaders of volunteering associations from over 120 FISU member states, university sports delegations and officials. The forum took place in the run-up to the 2019 Winter Universiade helping to facilitate communication between volunteers and national university sports federations and to share knowledge and experience in organising major international sporting events.

CSKA professional basketball club

Nornickel remains the general sponsor of Russia's most successful and well-known basketball club. In 2018, CSKA came out as a winner in the VTB United League and took part in the EuroLeague's Final Four.

Over the year, workshops led by the club transformed into a tournament for sports schools. The first CSKA junior basketball tournaments took place in Norilsk and Krasnoyarsk, with the winning teams offered tours to the CSKA junior camp in Moscow and workshops from the club's players.

29th International Winter Universiade in Krasnoyarsk

As a general partner of the 2019 International Winter Universiade in Krasnoyarsk, Nornickel duly and timely fulfilled its obligations to assist with preparations for the international student games in accordance with the agreement signed in 2015.

The Company's support for the universiade helped improve the local sports infrastructure, boosted the international image of the Krasnoyarsk Territory and its capital, promoted healthy lifestyles and mass sports, and enhanced living standards in the region.

In total, the Company contributed in excess of RUB 2.1 bn to the 2019 Winter Universiade.

One of our major commitments in the run-up to the universiade was to **fully upgrade the Bobrovy Log Fun Park** and prepare it for alpine skiing events. In 2018, Nornickel successfully completed the construction of a new athletic training facility equipped with a broadcasting system, expansion of the existing ski pistes and creation of an additional training track, development of an integrated security system, modernisation of the artificial snow machinery, and preparation of an ambulance helicopter pad. As a general partner of the 2019 Winter Universiade, Nornickel ensured extensive promotion of the Student Games to inform the public about the event.

In 2018, the three **NordStar Airlines planes** bearing the 2019 Winter Universiade logo continued flying domestic and international routes. They made nearly 2,927 flights during the year and carried over 385,000 passengers who were updated about the upcoming event while on board. Information about the Universiade was also available in the NordStar inflight magazine.

Among our initiatives was launching **a thematic metro train in Moscow dedicated to the Krasnoyarsk Universiade**. The train is designed in the event's signature colours and features quick facts on the history of the Winter Games, universiade facilities, and the sports included in the programme. It also showcases the diversity of Siberia's culture and nature, as well as its history and traditions.

Norislk Nickel Futsal Club

In 2016, the team and administrative personnel of Norilsk Nickel Futsal Club moved to Norilsk. The Company is the team's general sponsor. The team takes part in the Russian Super League Championship and Russian Futsal Cup. Relocation of the club gave a powerful boost to the development of futsal in the local community. The Russian Futsal Association and MMC Norilsk Nickel work closely to ensure the success of the Futsal to Polar Schools project. As part of this nationwide initiative, the Club's futsal players give master classes for schoolchildren and special workshops for trainers.

All Russian Federation of Dance Sport and Acrobatic Rock'n'Roll

In 2018, Nornickel supported the All Russian Federation of Dance Sport and Acrobatic Rock'n'Roll in developing and promoting these sports. As part of the partnership, we helped set up a corporate acrobatic rock'n'roll club in Norilsk that successfully debuted in the pan-Russian competitions. In recognition of Nornickel's contribution to dance sports and acrobatic rock-and-roll, the Company received the national Exercise Award 2018 as the Patron of the Year. The Company is the partner of the Federation of Dance Sport and Acrobatic Rock'n'Roll.

Rosgonki and Sochi Autodrom

In 2018, Nornickel was a partner of Rosgonki and Sochi Autodrom to support and promote motor racing in Russia. The Rosgonki autonomous non-profit organisation is the official organiser of the prestigious Formula One circuit race in Russia.

In 2018, the Company partnered with **Rosgonki** and **Sochi Autodrom**

The Company spent

over **USD 2.1** bn

to organise and hold the 2019 Winter Universiade

6

Corporate governance

CORPORATE GOVERNANCE STRUCTURE

Nornickel's corporate governance framework is designed to take into account and balance the interests of shareholders, the Board of Directors, managers and employees, as well as other stakeholders.

Nornickel's corporate governance framework is designed to take into account and balance the interests of shareholders, the Board of Directors, managers and employees, as well as other stakeholders.

The Company's approach to corporate governance, its key principles and mechanisms draw on the applicable Russian laws, including the Corporate Governance Code recommended by the Bank of Russia.

Nornickel's governance framework relies on the following principles:

- equitable and fair treatment of every shareholder;
- support for the shareholders to let them exercise their rights and lawful interests in the most reasonable and convenient manner;
- professionalism and leadership of the Board of Directors, and involvement of independent directors in governance;
- strategic management by the Board of Directors, its efficient control over executive bodies, and oversight of the risk management and internal control framework;
- sound, bona fide and efficient management of the Company's day-to-day operations by executive bodies accountable to the Board of Directors and the General Meeting of Shareholders;
- compliance with the Russian laws and the national laws of the countries of operation;
- corporate social responsibility;
- strong business ethics;
- zero tolerance to corruption, and effective anti-corruption measures;
- full, transparent, reliable and timely disclosure;
- robust internal controls, internal and external audits;
- active cooperation with investors, creditors, and other stakeholders in order to expand Company's assets and increase its market capitalisation.

These principles are reflected in Nornickel's official documents, including the Charter, Regulations on the Board of Directors, Information Policy Regulations, Anti-Corruption Policy, and other by-laws. All these documents are available on the Company's website.

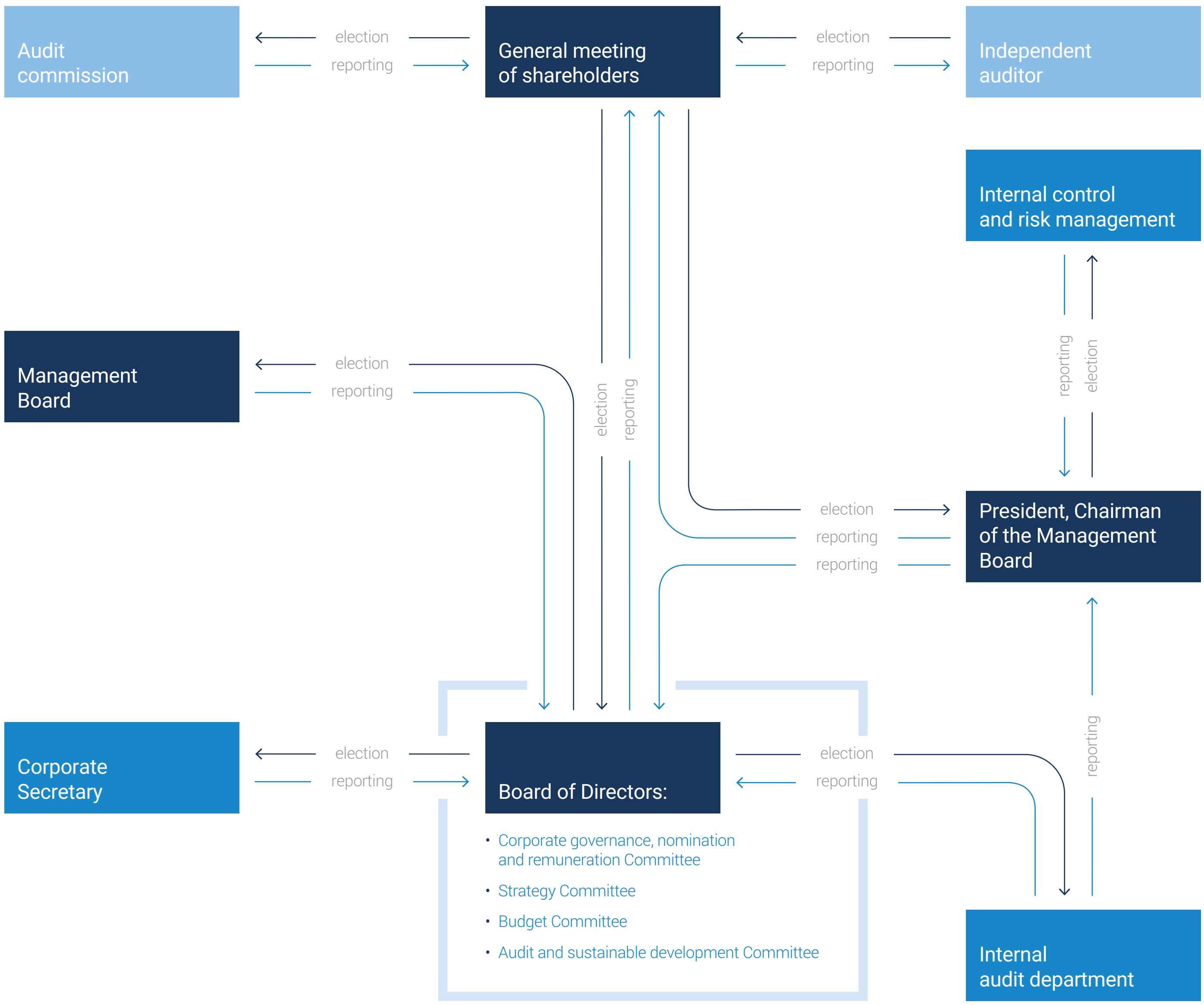
All Nornickel's by-laws are available on the Company's website at: https://www.nornickel.com/investors/disclosure/corporate-documents/

Letter from the Board of Directors

Aware of its key role in the corporate governance framework, the Board of Directors of MMC Norilsk Nickel highlights the Company's commitment to the highest relevant standards and best practices.

The Board of Directors views compliance with key principles and recommendations of the Corporate Governance Code as an efficient tool to improve corporate governance and ensure long-term sustainable growth.

Corporate governance framework



Governance structure

General Meeting of Shareholders
This is the supreme corporate body of the Company.

Competencies:
- amending the Charter;
- restructuring and liquidating the Company;
- changing the authorised capital;
- splitting or consolidating the Company's shares;
- electing the Company's President and members of the Board of Directors and Audit Commission and approving the auditor;
- approving annual reports and by-laws regulating the Company's corporate bodies;
- distributing annual profit;
- paying dividends.

It takes place no sooner than three and no later than six months following the end of the preceding financial year.

Extraordinary general meetings of shareholders may be convened by the Board of Directors or at the request of the Audit Commission, the independent auditor, or shareholders owning at least 10% of the Company's voting shares.

Except for the cumulative voting to elect members of the Board of Directors, each voting share is counted as one vote at the General Meeting of Shareholders.

Board of Directors
This is a collegial governance body in charge of strategic management of the Company and oversight of its executive bodies' activities.

Pursuant to the Charter, the Board consists of 13 directors.

Members of the Board are elected at the Annual General Meeting of Shareholders for a period extending until the next Annual General Meeting of Shareholders.

>>> *For more details on members of the Board of Directors, please see*
p. 166–171

Chairman of the Board of Directors
The Chairman is responsible for day-to-day operation of the Board of Directors, convening and chairing its meetings, making arrangements for minute-taking, and chairing the General Meetings of Shareholders.

For the last five years, the Board has been chaired by Gareth Peter Penny, an independent director.

>>> *For more details on the Chairman of the Board of Directors, please see*
p. 166

Independent directors
Independent directors are those having sufficient professional skills, experience and independence to act on their own and make impartial and reasonable decisions that are not influenced by the Company's executive bodies, particular groups of shareholders or other stakeholders.

The Company adheres to international standards and recommendations set out in the Corporate Governance Code of the Bank of Russia relating to the required number of independent directors. As at 31 December 2018, five of the Company's Board members met the director's independence criteria as defined by the Moscow Exchange, and one director was deemed independent by resolution of the Board of Directors.

Hence, independent directors make up 46.2% of the Company's Board of Directors.

>>> *For more details on independent directors, please see*
p. 166, 168–170, 172

Committees of the Board of Directors
Committees are ancillary bodies set up by the Board of Directors. Their function is to provide preliminary review of critical matters and advice to facilitate the Board's decision-making.

The Board of Directors has set up four committees:
- Audit and Sustainable Development Committee;
- Strategy Committee;
- Budget Committee;
- Corporate Governance, Nomination and Remuneration Committee.

>>> *For more details on the committees' activities, please see*
p. 172–174

President
The President is the sole executive body in charge of the day-to-day operations of the Company. The President is elected at a General Meeting of Shareholders for an indefinite period and acts as the Chairman of the Management Board.

The President reports to the Board of Directors and the General Meeting of Shareholders.

Since 2015, this position has been held by Vladimir Potanin (CEO of the Company in 2012–2015).

>>> *For more details on the President, please see*
p. 176

Management Board
This is a collegial executive body in charge of the day-to-day management of the Company within its scope of authority as set out in the Charter and the implementation of resolutions adopted by the General Meeting of Shareholders and the Board of Directors.

Members of the Management Board are elected by the Board of Directors for an indefinite period.
As at 31 December 2018, the Management Board consisted of 13 members.

>>> *For more details on the Management Board, please see*
p. 175, 176–182

Corporate Secretary
This is a corporate officer whose duties include managing shareholder relations, making the necessary arrangements to protect their rights and interests, and providing efficient operating support to the Board of Directors. The Corporate Secretary reports to the Board of Directors.

Pursuant to the Charter, the Corporate Secretary is appointed by the Board of Directors for a three-year term.

Since 2011, this position has been held by Pavel Platov
(Company's Secretary before 2017).

>>> *For more details on the Corporate Secretary, please see*
p. 183

Audit Commission
The Audit Commission controls the Company's financial and business transactions.

It performs annual internal audits of the Company's financial and business operations, as well as other internal audits as it may see fit or as requested by the General Meeting of Shareholders, the Board of Directors or any shareholders owning at least 10% of the Company's stock.

Members of the Audit Commission are elected at an Annual General Meeting of Shareholders for a period extending until the next Annual General Meeting of Shareholders. Members of the Audit Commission shall not simultaneously serve on the Company's Board of Directors or hold other positions in the Company's corporate bodies.

>>> *For more details on the Audit Commission, please see*
p. 184–185

Independent auditor
This is an audit firm commissioned to audit accounting/financial statements of the Company and provide an independent opinion regarding their accuracy.

The auditor is approved by the Annual General Meeting of Shareholders.

In 2018, the Annual General Meeting of Shareholders approved JSC KPMG as an independent auditor for both IFRS and Russian accounting standards.

>>> *For more details on the independent auditor, please see*
p. 191

Internal Control and Risk Management Unit
This unit is in charge of improving the risk management and internal control framework, detecting and preventing any waste, misuse or misappropriation of funds or assets of the Company and its subsidiaries, as well as any other wrongdoings and theft, ensuring accuracy of metrics and measurement standards and combating illegal activities, such as money laundering and terrorism financing.

>>> *For more details on the Internal Control and Risk Management Unit, please see*
p. 184–191, 196–197

Internal Audit Department
This department is in charge of independent audits, including assessment of the risk management and internal control framework of the Company and its subsidiaries.

>>> *For more details on the Internal Audit Department, please see*
p. 196–197

Achieving excellence in corporate governance

Nornickel continuously improves its corporate governance framework and adopts best global practices, keeping in mind their significant impact on the Company's sustainable development and valuation. Strengthening of corporate governance is seen as an integral part of the Company's effort to achieve operating excellence. The process is under constant supervision of the Board of Directors and executive bodies. The Bank of Russia's Corporate Governance Code serves as the main benchmark for improving the corporate governance framework. In the reporting year, the Company sought broader implementation of the Code's principles and recommendations:

- the Board of Directors assessed independent directors listed in the annual report for compliance with independence criteria;
- measures were taken to enhance risk management and internal controls;
- the Company invited an external independent consultant to assess the Board of Directors performance.

In 2018, the Company invited an independent consultant to evaluate the performance of its Board of Directors.

The following documents saw updates to reflect changes in the applicable laws on preventing unauthorised use of insider information and market manipulation:

- Regulation on the Procedure to Access Insider Information, Confidentiality Protection, and Supervision of Compliance with Laws on Preventing Unauthorised Use of Insider Information and Market Manipulation;
- list of insider information.

To streamline and bring internal audits up to date with international standards for the practice of internal auditing, the Board of Directors drafted and approved following documents:

- Guidelines for Assessing the Corporate Risk Management Framework;
- Guidelines for Assessing Internal Controls.

Corporate governance improvements had a positive effect on Nornickel's ESG scores assigned by MSCI and Sustainalytics, and placed the Company among Top 20 in the TopCompetence's National Corporate Governance Index 2018 for adherence to best practices.

>>> *For more details on the Company's sustainable development ratings, please see* **p. 13, 218**

Pursuant to the recommendations set out in the Bank of Russia's Corporate Governance Code, the Company jointly with the Registrar introduced e-voting using the Shareholder's Personal Account to allow remote participation in the meetings of shareholders. The service was first available at the Extraordinary General Meeting of Shareholders in September 2017. In 2018, the Company actively promoted e-voting among its shareholders. At the Extraordinary General Meeting of Shareholders in September 2018, over 30% of votes were collected through the service. Nornickel will be further developing e-voting to engage the shareholders in corporate activities and help them exercise their governance rights.

The Company reiterates its commitment to improving corporate governance to boost its efficiency and competitive edge. In doing so, it will rely primarily on principles and practices that are valued most by the investment community and have proved effective for large companies.

2018 milestones

The Company sought broader implementation of the Code's principles and recommendations.

The Company made it to the Top 20 of the TopCompetence's National Corporate Governance Index 2018.

September 2018

Over 30% of shareholders participated in the Extraordinary General Meeting of Shareholders through e-voting.

Board of Directors

Key powers of the Board of Directors include:

- reviewing matters related to sustainable development, environmental and health and safety strategy, and climate change;
- approving the dividend policy and providing recommendations on dividend per share;
- approving, electing and terminating powers of members of the Management Board, setting remuneration payable to the Company's President, members of the Management Board, Corporate Secretary, and Head of Internal Audit;
- acting on other matters as provided for by the Federal Law No. 208-FZ On Joint Stock Companies dated 26 December 1995, and the Company's Charter.

FUNCTIONS OF THE BOARD OF DIRECTORS

As per the Company's Charter, meetings of the Board of Directors (in person or in absentia) are held as and when required, but at least once every six weeks. In practice, the Board of Directors meets at least twice a month. The procedure for convening and holding meetings of the Board of Directors is specified in the Company's Regulations on the Board of Directors.

The Board of Directors sets the fundamental principles of business conduct and is responsible for nurturing Nornickel's business and social culture.

CHAIRMAN OF THE BOARD OF DIRECTORS

The key goal of the Chairman of the Board of Directors is to ensure high levels of trust at Board meetings and constructive cooperation between the Board members and corporate management.

Since March 2013, the Board of Directors has been chaired by independent non-executive director Gareth Peter Penny, which the Company believes to be fully in line with best global practices. An independent director appointed as a Chairman of the Company's Board of Directors ensures the most efficient interaction between the Board of Directors, shareholders and other stakeholders.

During the year the Board, under his leadership, approved several crucial resolutions dealing with Nornickel's development strategy, long-term production planning, marketing and sales strategy, strategic health and safety issues, environmental projects and human capital development, and took steps to preserve the Company's competitive edge. Gareth Penny's simultaneous participation in other companies' boards of directors helps improve the efficiency of Norilsk Nickel's Board of Directors in implementing global best practices of corporate governance.

INDEPENDENT DIRECTORS

The Company sees independent directors as valuable contributors to the efficiency of the Board, in particular, in terms of ensuring that the matters on the Board's agenda are treated fairly, and reinforcing shareholders' and investors' confidence in actions taken by the Board of Directors.

In accordance with global corporate governance practices and recommendations of the Bank of Russia's Corporate Governance Code, the Board of Directors should have a sufficient number of independent directors. For the issuer's shares to be on the First Level quotation list of the Moscow Exchange, its Listing Rules require independent directors to make up at least one fifth of the issuer's Board of Directors, and their number to be no less than three.

Moreover, the Company believes that independent directors are key to efficient operation of the Board of Directors and thoughtful decision-making. According to the Company's Charter, an independent director is a member of the Board of Directors compliant with independence criteria set out by the Moscow Exchange.

In the lead-up to the Annual General Meeting of Shareholders, the Corporate Governance, Nomination and Remuneration Committee of MMC Norilsk Nickel's Board of Directors reviewed the compliance of nominees to the Board of Directors with relevant criteria in May 2018. The five independent nominees to the Board fully met the independence criteria established by the Listing Rules of the Moscow Exchange, which state that an independent director is the one who is not related to the Company, any of its substantial shareholders, competitors or counterparties, or the government. Andrey Likhachev, one of the nominees to the Board, was recognised as independent despite being related to a substantial counterparty as the relation does not affect his ability to make independent, fair and unbiased judgements.

The current directors on the Board were elected at the Annual General Meeting of Shareholders on 28 June 2018. In October 2018, the Company's Board of Directors, following the recommendations of the Corporate Governance, Nomination and Remuneration Committee, verified the independent directors' compliance with relevant criteria. As at the end of 2018, six (46.2%) out of 13 directors were recognised as independent.

Directors' liability insurance

Since 2003, the Company has had its directors' liability insured. The insurance aims to cover potential damages arising from unintended erroneous actions of the Company's directors in their management activities. The terms and conditions of the agreement, as well as the amount of insurance coverage, are consistent with the world's best practices for such risks. The key provisions of the agreement are subject to approval by the General Meeting of Shareholders.

PERFORMANCE OF THE BOARD OF DIRECTORS

Tight cooperation between the Board of Directors and the Company's management enabled the Company to achieve target KPIs.

To support shareholder value and ensure comprehensive protection of shareholder rights and interests in the reporting period, the Company kept working on the strategy and priority areas of business, improving corporate governance and boosting social responsibility.

In 2018, the Company introduced several by-laws to align its corporate governance framework with best global practices and strengthen shareholders' and investors' confidence.

In the reporting period, the Company also focused on promoting innovations and the use of new technology as part of its operating excellence drive. Nornickel's dedicated programme embraced initiatives to step up production efficiency, cut operating costs, and boost health, safety and security across its footprint. An effective strategy and an in-depth market analysis helped the Company take its business to an entirely new level and confirm its status as a company with one of the most compelling investment cases in Russia.

PERFORMANCE ASSESSMENT

Since 2014, Nornickel's Board of Directors has been conducting annual self-assessments using the methodology developed by independent consultants in line with best global practices. All directors must fill out an online questionnaire following a schedule approved by the Board of Directors. The questionnaire contains 76 questions, divided into three parts and 15 sections. All questions are graded on a scale from 1 to 10. For each question there is a text field where directors may enter additional comments. Answering all questions is mandatory.

For an independent review of the 2018 performance, the Board of Directors' meeting **on 1 February 2019 resolved to engage an external consultant** – the Independent Directors Association (IDA), a reputable national body with an extensive expertise in corporate governance and directorship, which represents Russia in the Global Network of Director Institutes (GNDI).

IDA used polling and interviewing to assess the Board's performance. Based on polling results, the consultant quickly analysed the Board's status quo in such key areas as strategy and business practices, internal controls and risk management, the Company's performance management, and the Board's and its committees' operating procedures, and evaluated the overall efficiency of the Board, including its Chairman and the Corporate Secretary. The exercise helped uncover the Board's strengths, weaknesses and potential disagreements among directors. The Board of Directors will rely on the report with summarised polling results to further improve its efficiency. The external review revealed significant progress in corporate governance against previous assessments, which included monitoring of major investment projects, human capital development and long-term incentive programmes, better risk management, budget planning and discipline. It also identified areas for improvement, in particular the need for stronger top management incentivisation and succession planning, continued Board's involvement in reviewing of strategic projects and major investments, development of effective ESG and HSE policies, and enhancing the quality of interactions between the Board, management and key stakeholders when discussing and making strategic decisions.

In line with best corporate governance practices, the Board of Directors will keep running self-assessments every year, while also engaging an independent expert to evaluate its performance at least once every three years.

2018 milestone

The Board of Directors held 45 meetings, including 13 in person, and considered a total of 175 matters.

Number of Board of Directors meetings

Year	Total	In person	In absentia	Number of matters considered
2016	50	7	43	1,024
2017	42	7	35	199[1]
2018	45	13	32	175

[1] *Fewer matters considered from 2017 onwards are mainly due to amendments to Federal Law No. 2018-FZ On Joint Stock Companies dated 26 December 1995, effective from 1 January 2017 and pertaining to the regulation of related-party transactions.*

Directors' participation in meetings of the Board of Directors and its committees

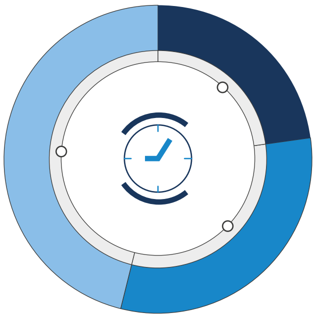
Full name	Title	Participation / number of meetings				
		Board of Directors	Strategy Committee	Budget Committee	Audit and Sustainable Development Committee	Corporate Governance, Nomination and Remuneration Committee
Gareth Peter Penny	Independent Director / Chairman of the Board of Directors	45/45	8/8	–	–	–
Andrey Bougrov	Executive director	45/45	–	–	–	–
Sergey Barbashev	Executive director (since December 2018)	45/45	–	2/4	–	6/12
Alexey Bashkirov	Non-executive Director / Chairman of the Budget Committee	45/45	8/8	3/4	16/18	6/12
Sergey Bratukhin	Independent Director / Chairman of the Corporate Governance, Nomination and Remuneration Committee	45/45	8/8	4/4	18/18	12/12
Marianna Zakharova	Executive director	45/45	–	–	–	–
Stalbek Mishakov	Non-executive director	45/45	–	2/4	8/18	12/12
Maxim Sokov	Non-executive director / Chairman of the Strategy Committee	45/45	8/8	2/4	–	–
Vladislav Soloviev	Non-executive director	45/45	–	–	–	–
Robert Edwards	Independent director	45/45	–	–	18/18	12/12
MEMBERS OF THE BOARD OF DIRECTORS FROM 28 JUNE 2018						
Artem Volynets	Independent director	22/45	4/8	2/4	–	–
Andrey Likhachev	Independent director	22/45	–	–	–	6/12
Roger Munnings	Independent director	22/45	–	2/4	8/18	–
MEMBERS OF THE BOARD OF DIRECTORS BEFORE 28 JUNE 2018						
Rushan Bogaudinov	Non-executive director	23/45	–	–	10/18	–
Gerhardus Prinsloo	Independent director / Chairman of the Audit and Sustainable Development Committee	23/45	4/8	2/4	9/18	6/12
Sergey Skvortsov	Non-executive director	23/45	–	–	–	–

Composition of the Board of Directors

As at 31 December 2018, the Board of Directors was made up of 13 members, including six independent, four non-executive and three executive directors.

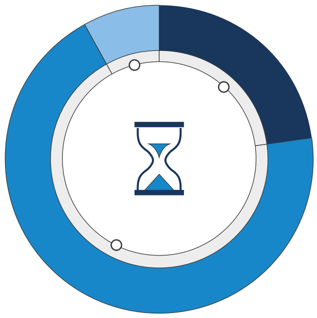
Following the Annual General Meeting of Shareholders on 28 June 2018, Roger Munnings, Andrey Likhachev and Artem Volynets were elected to the Board of Directors, replacing Gerhardus Prinsloo, Rushan Bogaudinov and Sergey Skvortsov.

Breakdown by years served on the Board of Directors *(%)*



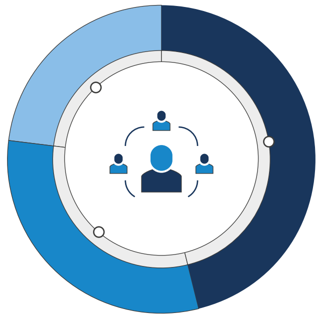
<3 years	23
3-5 years	31
>5 years	46

Breakdown by age *(%)*



Below 40 years old	23
40–60 years old	69
Above 60 years old	8

Composition of the Board of Directors *(%)*



Independent directors	46
Non-executive directors	31
Executive directors	23

Key competencies of the Board of Directors

Full name	Years on the Board of Directors	Track record as a member of the Board of Directors	Competencies				
			Strategy	Law and corporate governance	Finance	Mining and engineering	International economic relations
Gareth Peter Penny	5	Since 2013	+			+	+
Robert Edwards	5	Since 2013		+	+	+	
Sergey Bratukhin	5	Since 2013	+	+	+	+	
Andrey Bougrov	16	Since 2002		+		+	+
Marianna Zakharova	8	Since 2010		+		+	
Sergey Barbashev	7	Since 2011		+			
Alexey Bashkirov	5	Since 2013	+		+		+
Maxim Sokov	10	Since 2008	+	+		+	+
Vladislav Soloviev	8	2008–2011		+		+	
Stalbek Mishakov	6	Since 2012		+	+	+	+
Roger Munnings	1	Since 2018			+	+	
Andrey Likhachev	1	Since 2018		+	+		
Artem Volynets	1	Since 2018	+		+		
Rushan Bogaudinov A.	3	2015–2018			+	+	
Gerhardus Prinsloo	6	2012–2018	+	+	+	+	
Sergey Skvortsov	3	2014–2015, 2017–2018			+		+
Total	Average tenure on the Board of Directors is 6 years		6	10	10	11	6

BIOGRAPHIES OF MEMBERS OF THE BOARD OF DIRECTORS

Gareth Peter PENNY

Independent director

Chairman of the Board of Directors since 2013

Member of the Strategy Committee

Born in: 1962

Nationality: UK

Education:

Bishops Diocesan College, Cape Town

Eton College, UK

Oxford, Rhodes Scholar (UK), Master of Arts in Philosophy, Politics and Economics (UK)

Track record:

2007–present	Non-executive director at Julius Baer Group Ltd
2012–2016	Executive Chairman at New World Resources plc, Executive Director at New World Resources NV
2012–2016	Member of the Board of Directors at OKD
2016–2018	Non-Executive Chairman of the Board of Directors at Pangolin Diamonds Corp.
2017–present	Non-Executive Chairman of the Board of Directors at Edcon Holdings Limited
2017–present	Member of the Board of Directors at Amulet Diamond Corporation

Andrey BOUGROV

Executive director

Senior Vice President

Deputy Chairman of the Board of Directors since 2013

Member of the Management Board since 2013

Born in: 1952

Nationality: Russia

Education:

Moscow State Institute of International Relations (MGIMO University), degree in International Economic Relations; PhD in Economics

Track record:

2002–present	Member of the non-governmental Council on Foreign and Defence Policy
2006–present	Member of the Management Board of the Russian Union of Industrialists and Entrepreneurs
2013–present	Vice President at Interros Holding Company LLC (Interros Holding Company CJSC until 2015)
2013–2015	Member of the Management Board, Deputy Chairman of the Board of Directors, Deputy CEO at MMC Norilsk Nickel
2013–present	Vice President of the Russian Union of Industrialists and Entrepreneurs (RUIE)
2014–present	Member of the Board of Directors at Inter RAO UES PJSC (Inter RAO UES OJSC until 2015)
2014–present	Member of the Expert Committee of the Russian President's Anticorruption Office
2015–present	Member of the Management Board and Deputy Chairman of the Board of Directors at MMC Norilsk Nickel
2015–2016	Member of the Investment Committee at the Federal Hydro-Generating Company RusHydro
2015–present	Senior Vice President at MMC Norilsk Nickel (formerly Vice President until 2016)
2015–present	Member of Non-profit partnership National Council on Corporate Governance
2016–present	Member of the Expert Council on Corporate Governance at the Bank of Russia
2016–present	Chairman of the Issuer Committee at the Moscow Exchange
2018–present	Chairman of the Board of non-financial reporting at RUIE
2018–present	Member of the Expert Council on Corporate Governance at the Russian Ministry of Economic Development
2018–present	Member of the Advisory Board of the RBTT

Sergey BARBASHEV

Executive director (since June 2018)

First Vice President

Member of the Board of Directors since 2011

Member of the Management Board since 2018

Born in: 1962

Nationality: Russia

Education:

Moscow Higher School of Militia of the Ministry of Internal Affairs of the USSR, degree in Law

Track record:

2008–2018	CEO and Chairman of the Management Board at Interros Holding Company LLC (Interros Holding Company CJSC until 2015)
2008–present	Member of the Board at Vladimir Potanin Foundation (formerly, Vladimir Potanin Foundation, non-profit charitable organisation)
2011–present	Chairman of the Board of Directors at Rosa Khutor Ski Resort Development Company
2015–2018	Branch Director at Olderfrey Holdings Limited
2016–present	Member of the Board of Endowment for Education, Science and Culture
2018–present	Member of the Management Board, First Vice President and Head of Corporate Security at MMC Norilsk Nickel

Alexey BASHKIROV

Non-executive director

Member of the Board of Directors since 2013

Chairman of the Budget Committee, member of the Audit and Sustainable Development Committee, Strategy Committee, and Corporate Governance, Nomination and Remuneration Committee

Born in: 1977

Nationality: Russia

Education:

Moscow State Institute of International Relations (MGIMO University), degree in International Economic Relations

Track record:

2009–2015	Executive Director, Head of the Investment Department, Deputy CEO for Investments at Interros Holding Company
2009–2013	Member of the Board of Directors at Rosa Khutor Ski Resort Development Company
2009–2014	Member of the Board of Directors at Prof-Media Management
2011–2015	Member of the Management Board at Interros Holding Company
2012–2014	Member of the Board of Directors at SP Holding, Cinema Park
2014–present	Member of the Board of Directors at Petrovax Pharm and Zaodno
2015–2018	Member of the Management Board, Deputy CEO for Investments at Interros Holding Company
2016–present	Trustee of the Night Time Hockey League, a non-profit amateur hockey foundation
2016–2018	Member of the Board of Directors at iGlass Technology Inc.
2016–present	Managing Director at Winter Capital Advisors
2016–present	CEO at Translaininvest
2018–present	CEO, Chairman of the Management Board at Interros Holding Company

Sergey BRATUKHIN

Independent director

Member of the Board of Directors since 2013

Chairman of the Corporate Governance, Nomination and Remuneration Committee, member of the Strategy Committee, the Budget Committee and the Audit and Sustainable Development Committee

Born in: 1971

Nationality: Russia

Education:

Mendeleev University of Chemical Technology of Russia, degree in Engineering

Finance Academy under the Government of the Russian Federation, degree in Banking and Insurance

Warwick Business School, degree in Business Management

Track record:

2007–2017	Member of the Board of Directors at Dallesprom
2007–2014	Member of the Board of Directors at Amur Shipping Company
2011–present	President at Invest AG (CIS Investment Advisers LLC)
2014–2016	Member of the Board of Directors at AKB International Financial Club

Artem VOLYNETS

Independent director

Member of the Board of Directors since 2018

Member of the Strategy Committee and the Budget Committee

Born in: 1967

Nationality: Russia

Education:

Georgetown University

INSEAD (Institut Europeen d'Administration des Affaires)

The American University in Washington, DC

Lomonosov Moscow State University

Track record:

2010–2013	CEO at En+ Group
2010–2013	CEO at En+ Management
2013–2013	Advisor to Nafta Moskva investment group
2014–2017	CEO at ACG Eurasia (formely, Sapinda CIS)
2017–present	CEO at ACG Amur Capital Group Ltd
2018–present	Member of the Board of Directors and CEO at Chaarat Gold Holdings Limited

Marianna ZAKHAROVA

Executive director

First Vice President

Member of the Board of Directors since 2010

Member of the Management Board since 2016

Born in: 1976

Nationality: Russia

Education:

Peoples' Friendship University of Russia (RUDN), Master's degree in Law

Track record:

2010–2015	Member of the Management Board, Deputy CEO for Legal Affairs at LLC Interros Holding Company (Interros Holding Company CJSC until 2015)
2010–2015	Member of the Board of Directors at ProfEstate
2015–present	First Vice President for Corporate Governance, Asset Management and Legal Affairs at MMC Norilsk Nickel

Andrey LIKHACHEV

Independent director

Member of the Board of Directors since 2018

Member of the Corporate Governance, Nomination and Remuneration Committee

Born in: 1965

Nationality: Russia

Education:

A.A. Zhdanov Leningrad State University, degree in Applied Mathematics

Track record:

2011–2013	Member of the Board of Directors and CEO at MOEK
2012–2018	Chairman of the Board of Directors at Irkutskenergo
2013–2016	CEO at Planeta ZIL
2017–present	CEO at Rublyovo-Arkhangelskoye (Sberbank Group)

Stalbek MISHAKOV

Non-executive director

Member of the Board of Directors since 2012

Member of the Corporate Governance, Nomination and Remuneration Committee and the Audit and Sustainable Development Committee

Born in: 1970

Nationality: Russia

Education:

Moscow State Institute of International Relations (MGIMO University), degree in International Law

University of Notre Dame (USA), Master's degree

Diplomatic Academy of the Russian Foreign Ministry, PhD in Economics

Track record:

2010–2018	Advisor to CEO at RUSAL Global Management B. V.
2013–2016	Member of the Board of Directors at United Company RUSAL Plc
2013–2018	Deputy CEO at En+ Management
2018–present	Sector Lead at RUSAL Global Management B. V.

Roger Llewelyn MUNNINGS

Independent director

Member of the Board of Directors since 2018

Chairman of the Audit and Sustainable Development Committee and member of the Budget Committee

Born in: 1950

Nationality: UK

Education:

The University of Oxford, Master's degree (Hons) in Politics, Philosophy and Economics

Fellow of the Institute of Chartered Accountants in England and Wales

Track record:

2013–present	Member and Chairman of the Board of Directors of Russo-British Chamber of Commerce
2005–2014	Deputy Chairman of the Board at Association of European Businesses in Russia
2008–2014	Chairman of Audit Committee Institute in Russia
2009–2016	Trustee at the John Smith Trust
2009–2014	Member of the Board of Directors at the Moscow School of Political Studies (now Moscow School of Civic Education)
2010–2016	Member of the Board of Directors at Wadswick Energy Limited
2010–present	Independent director, Chairman of the Board of Directors' Audit, Finance and Risk Committee at Sistema
2011–2014	Member of the Advisory Board at Oracle Capital Group
2012–2013	Independent director at SUEK
2013–present	Member of Non-profit partnership National Council on Corporate Governance
2013–present	Trustee at Kino Klassika Ltd
2013–present	Advisory Council Member at International Business Leaders Forum Autonomous Non-Profit Organization
2015–present	Independent director, Chairman of the Board of Directors' Human Resources and Compensation Committee at LUKOIL
2017–present	Member of Council of National Representatives, Association of European Businesses in Russia

Maxim SOKOV

Non-executive director

Member of the Board of Directors since 2008

Chairman of the Strategy Committee, member of the Budget Committee

Born in: 1979

Nationality: Russia

Education:

Russian State Tax Academy under the Russian Ministry of Taxes, degree in Law

New York University, Master's degree in Law, lawyer (USA)

Track record:

2008–2013	CEO of OK RUSAL – Investment Management
2012–2018	Member of the Board of Directors at United Company RUSAL Plc
2012–2013	Director of Strategic Investment Management at RUSAL Global Management B. V.
2013–2014	Advisor on Strategic Investment Management at RUSAL Global Management B. V. and First Deputy CEO at En+ Group Ltd
2013–2018	CEO at En+ Management
2013–2017	Member of the Board of Directors at Eurosib Energo Plc
2013–2018	Member of the Board of Directors at En+ Group Limited
2014–2018	CEO at En+ Group Limited
2017–2018	Member of the Board of Directors at FESCO
2017–2018	CEO at En+ Group Plc and member of the Board of Directors at En+ Group Plc
2018	President at En+ Group Plc

Vladislav SOLOVIEV

Non-executive director

Member of the Board of Directors since 2013 (also in 2008–2011)

Born in: 1973

Nationality: Russia

Education:

Graduate School of Management of the State Academy of Management

Moscow State Technological University “Stankin”, MBA

Track record:

2007–2018	Member of the Board of Directors at United Company RUSAL Plc
2008–2015	Member of the Board of Directors at En+ Group Limited
2010–2014	First Deputy Director at RUSAL Global Management B. V.
2014–2018	CEO of CJSC RUSAL Global Management B. V. and United Company RUSAL Plc
2018	Member of the Board of Directors and CEO at En+ Group Plc
2018–present	President at United Company RUSAL Plc and CJSC RUSAL Global Management B. V.

Robert
EDWARDS

Independent director

Member of the Board of Directors since 2013

Member of the Corporate Governance, Nomination and Remuneration Committee and the Audit and Sustainable Development Committee

Born in: 1966

Nationality: UK

Education:

Camborne School of Mines, degree in Mining Engineering

Track record:

2013–2014	Senior Advisor at Royal Bank of Canada (Europe) Capital Markets
2013–present	CEO at Highcross Resources Ltd
2014–2018	Non-executive director at GB Minerals Ltd
2016–2016	Chairman at Sierra Rutile Limited (SRX)
2018–present	Member of the Board of Directors at Chaarat Gold Holdings Ltd
2018–present	Member of the Board of Directors at Scriptfert New Zealand Ltd

Board of Directors' holdings and transactions in the Company's shares

In 2018, Maksim Sokov held the Company's ordinary shares accounting for 0.0011% of the authorised capital.

Stalbek Mishakov completed the following transactions in the Company's securities: on 21 March, he acquired 44 thousand ADRs (0.0028% of the authorised capital), which he sold in two tranches of 22 thousand ADRs (0.0014% of the authorised capital) on 6 November and 26 November, respectively. As at 31 December 2018, Stalbek Mishakov held no ordinary shares and/or ADRs of the Company.

As at the same date, other directors had no holdings in the Company's ordinary shares and/or ADRs and did not enter into any relevant sale and purchase transactions in 2018.

COMMITTEES OF THE BOARD OF DIRECTORS

Committees established by the Board of Directors are in charge of review of the most important matters and preparation of recommendations to the Board of Directors.

To ensure efficiency and proper fulfilment of their functions, the committees may discuss matters with the Company's management bodies and seek opinions of external consultants. The Company set up four committees of the Board of Directors, each made up of five persons:

- Audit and Sustainable Development Committee;
- Strategy Committee;
- Budget Committee;
- Corporate Governance, Nomination and Remuneration Committee.

Audit and Sustainable Development Committee

The Audit and Sustainable Development Committee deals with matters related to financial statements, risk management and internal controls, internal and external audits, prevention of wrongdoings by employees and third parties, as well as matters related to the environment and health and safety.

In the reporting year, the committee held 18 meetings, including ten in person, seven in absentia, and one joint meeting (with the Budget Committee on 5 March 2018).

The committee is made up of five directors, three of which are independent, including its Chairman. On average, members of the Audit and Sustainable Development Committee of the Company's Board of Directors have more than 10 years of experience in finance.

The Audit and Sustainable Development Committee plays an important role when it comes to controls and accountability and has become an effective interface between the Board of Directors, the Audit Commission, independent auditor, the Internal Audit Department and management of the Company.

During the reporting year, the committee has developed for the Board of Directors a number of recommendations dealing with the accuracy, completeness and validity of the Company's financials, health, safety and environment, and approval of the Company's auditors. The Audit and Sustainable Development Committee also considered and took note of the results achieved in identifying, assessing and managing technical and production risks across the Norilsk Nickel Group, and the results of forensic audits conducted by the Internal Audit Department.

Members of the Audit and Sustainable Development Committee in 2018[1]
Roger Munnings (Chairman, independent director)
Alexey Bashkirov
Robert Edwards (independent director)
Stalbek Mishakov
Sergey Bratukhin (independent director)

[1] *Composition as of 31 December 2018.*

Strategy Committee

The Strategy Committee was established to support the Board of Directors by conducting preliminary reviews of matters pertaining to sustainable development, investment planning, restructuring, and interaction with capital markets and government authorities.

In 2018, the Strategy Committee regularly considered matters related to environment, health, safety, and climate change, including the infrastructure and energy development strategy, as part of the Company's Environmental Development Framework.

In the reporting year, the committee held eight meetings, including seven in person, and one in absentia.

The Strategy Committee is made up of five directors, including three independent and two non-executive directors.

The Strategy Committee's focus is on supporting the Board of Directors in developing, supervising and revising the corporate strategy and preparing recommended updates thereto.

During the year, the Strategy Committee issued recommendations to the Board of Directors to facilitate decision-making on updating the Company's development strategy and those for a number of functional areas, including sales. The committee reviewed the updates on the progress and status of major investment projects (e.g. the Bystrinsky project, Talnakh Concentrator–3 and the Southern Cluster) and prepared progress reports on production reconfiguration and the Technology Breakthrough initiative. Also, the committee discussed the progress of the shared services centre's initiatives and the Programme of IT Initiatives for Business, along with the deployment and role of SAP solutions in the Company's key business processes. To ensure efficient strategic planning, the Committee reviewed production reports and results of the programme designed to improve production efficiency and reduce operating costs.

Members of the Strategy Committee in 2018[2]
Maxim Sokov (Chairman)
Artem Volynets (independent director)
Alexey Bashkirov
Gareth Peter Penny (independent director)
Sergey Bratukhin (independent director)

[2] *Composition as of 31 December 2018.*

Budget Committee

The Budget Committee is in charge of preliminary review and issue of recommendations pertaining to finance, budgeting, business plans and monitoring of their implementation.

In the reporting year, the committee held four meetings, including two in absentia, one in person, and one joint meeting (with the Audit and Sustainable Development Committee on 5 March 2018).

The Budget Committee is made up of five directors, including three independent and two non-executive directors.

The key role of the Budget Committee throughout the year was to issue recommendations to the Board of Directors in order to facilitate decision-making on the amount of dividends and on the record date to be suggested by the Board of Directors. The Budget Committee also approved and recommended that the Board of Directors approve the Company's 2019 budget.

Members of the Budget Committee in 2018[1]
Alexey Bashkirov (Chairman)
Artem Volynets (independent director)
Maxim Sokov
Roger Munnings (independent director)
Sergey Bratukhin (independent director)

[1] *Composition as of 31 December 2018.*

Corporate Governance, Nomination and Remuneration Committee

The Corporate Governance, Nomination and Remuneration Committee supports the Board of Directors by way of:

- assessing, controlling and improving the Company's corporate governance framework;
- ensuring succession planning for the Board of Directors and the Management Board of the Company;
- providing incentives, assessing the performance of the Company's Board of Directors, Management Board, President and Corporate Secretary, and setting applicable remuneration policies;
- supervising the development and implementation of the Company's information policy.

In the reporting year, the committee held twelve meetings, including ten in absentia, and two in person.

The committee is made up of five directors, including three independent directors, one of whom chairs the committee, and two non-executive directors.

The committee issued recommendations to the Board of Directors in order to facilitate decision-making on the convocation, preparation and running of annual and extraordinary general meetings of shareholders, and on the matters reserved to the General Meeting of Shareholders (remuneration and reimbursement of expenses of the members of the Board of Directors and the Audit Commission, liability insurance and indemnification of the members of the Board of Directors and the Management Board).

Additionally, the Corporate Governance, Nomination and Remuneration Committee advised the Board of Directors on approval of the Company's by-laws, and evaluation of directors' performance in 2018. The committee reviewed the updates on the Our Home and My Home programmes, corporate social subsidised loan programme, and the Company's charitable policy, and noted the progress of the Human Capital Development Programme.

Members of the Corporate Governance, Nomination and Remuneration Committee in 2018[2]
Sergey Bratukhin (Chairman, independent director)
Alexey Bashkirov
Andrey Likhachev (independent director)
Robert Edwards (independent director)
Stalbek Mishakov

[2] *Composition as of 31 December 2018.*

President and Management Board

The President and the Management Board are executive bodies in charge of day-to-day operations. The President serves as the Chairman of the Management Board.

The executive bodies are a key element in the Company's management system ensuring enactment of resolutions adopted by the Board of Directors and the General Meetings of Shareholders and implementation of Nornickel's core corporate plans and programmes, and maintaining the efficiency of risk management and internal control functions.

The Company insures the liability of the Management Board members. The insurance aims to cover potential damages arising from unintended erroneous actions of the Management Board in its decision-making. The terms and conditions of the agreement, as well as the amount of insurance coverage, are consistent with the world's best practices for such risks.

The President and members of the Management Board are elected for an indefinite period. The Board of Directors may at any time dismiss any member of the Management Board. Since 1 July 2016, the General Meeting of Shareholders has the authority to elect and dismiss the President.

COMPOSITION OF THE MANAGEMENT BOARD

2018 milestones

In 2018, the composition of the Company's Management Board remained unchanged.

The last change in the membership was approved by the Board of Directors on 27 April 2016. From 24 December 2018, the Management Board consisted of 13 members.

In 2018, the Management Board held 32 meetings in absentia.

Changes in the Management Board composition in 2018

Resolution dated	Action	Full name
12 February 2018	Left the Management Board due to termination of employment contract	Alexander Ryumin
8 June 2018	Left the Management Board due to termination of employment contract	Elena Bezdenezhnykh
21 September 2018	Left the Management Board due to termination of employment contract	Onik Aznauryan
24 December 2018	Joined the Management Board	Sergey Barbashev
24 December 2018	Joined the Management Board	Alexander Grubman
24 December 2018	Joined the Management Board	Sergey Dubovitsky

Name	Participation / Number of meetings
Vladimir Potanin	32/32
Marianna Zakharova	32/32
Sergey Batekhin	32/32
Larisa Zelkova	32/32
Nina Plastinina	31/32
Vladislav Gasumyanov	32/32
Sergey Malyshev	31/32
Elena Kondratova	32/32
Andrey Bougrov	32/32
Sergey Dyachenko	32/32
Sergey Barbashev[1]	0/32
Alexander Grubman[1]	–0/32
Sergey Dubovitsky[2]	–0/32
Alexander Ryumin[2]	3/32
Onik Aznauryan[2]	22/32
Elena Bezdenezhnykh[2]	15/32

[1] *Left the Management Board as per the Board of Directors' resolution.*

[2] *Elected to the Management Board as per the Board of Directors' resolution of 24 December 2018. There were no meetings of the Management Board between the date of election and 31 December 2018.*

BIOGRAPHIES OF THE MANAGEMENT BOARD MEMBERS

Vladimir POTANIN

The Company's President since 2015 (the Company's CEO in 2012– 2015)

Chairman of the Management Board since 2012

Born in: 1961

Nationality: Russia

Education:

Moscow State Institute of International Relations (MGIMO University), degree in International Economic Relations

Track record:

1995–present Member of the Presidium of the International Foundation for the Unity of Orthodox Christian Nations

2000–present Member of the Bureau and Management Board of the Russian Union of Industrialists and Entrepreneurs

2001–present Member of the Board of Trustees of the Solomon R. Guggenheim Foundation (New York)

2003–present Chairman of the Board of Trustees of the State Hermitage Museum

2004–present Chairman and member of the Presidium of the National Council on Corporate Governance

2005–present Member of the Council of Trustees and the Board of the Russian Olympians Foundation

2006–present Deputy Chairman of the Board of Trustees of the Moscow State Institute of International Relations (MGIMO University), member of the Board of Trustees of the Graduate School of Management (St Petersburg University), and member of the Bureau and Management Board of the Russian Union of Industrialists and Entrepreneurs

2007–present Member of the Board of Trustees of St Petersburg State University and Deputy Chairman of the Board of Trustees of the MGIMO Endowment Fund

2007–2014 Member of the Supervisory Board of the Sochi 2014 Steering Committee

2008–present Member of the Board at Vladimir Potanin Foundation (formerly, Vladimir Potanin Foundation, non-profit charitable organisation)

2009–2016 Chairman of the Supervisory Board of the Russian International Olympic University

2009–present Deputy Chairman of the Board of Trustees of the Russian International Olympic University

2010–present member of the Board of Trustees of the Russian Geographical Society

2011–present Member of the Board of Trustees of the State Hermitage Museum Endowment Fund and the Moscow Church Construction Foundation

2012–2015 CEO and Chairman of the Management Board of MMC Norilsk Nickel

2013–2014 Member of the Board of Directors of OJSC Inter RAO UES

2013–2015 President of CJSC Interros Holding Company

2014–present Chairman of the Board of Trustees of the ROZA Club for Sport Development and Support

2015–present President of LLC Interros Holding Company

2016–present Member of the Board of the Endowment Fund for Education, Science and Culture, and Chairman of the Board of Trustees of the Night Hockey Foundation for the Development of Amateur Hockey

2017–present Chairman of the Supervisory Board of the Norilsk Development Agency

2018–present Member of the Board of Trustees of the Solovki Archipelago Preservation and Development Foundation

2018–present Member of the Board of Trustees of the Russia-U.S. Council on Business Cooperation, Trade Association

Sergey BARBASHEV

Member of the Management Board since 2018

Member of the Board of Directors since 2011

First Vice President

Born in: 1962

Nationality: Russia

Education:

Moscow Higher School of Militia of the Ministry of Internal Affairs of the USSR, degree in Law

Track record:

2008–2018	CEO and Chairman of the Management Board at Interros Holding Company LLC (Interros Holding Company CJSC until 2015)
2008–present	Member of the Board at Vladimir Potanin Foundation (formerly, Vladimir Potanin Foundation, non-profit charitable organisation)
2011–present	Chairman of the Board of Directors at Rosa Khutor Ski Resort Development Company
2015–2018	Branch Director at Olderfrey Holdings Limited (Olderfrey Holdings Limited LLC until 2016)
2016–present	Member of the Board of Endowment for Education, Science and Culture
2018–present	Member of the Management Board, First Vice President and Head of Corporate Security at MMC Norilsk Nickel

Sergey DYACHENKO

Member of the Management Board since 2013

First Vice President

Born in: 1962

Nationality: Russia

Education:

Plekhanov Leningrad Mining Institute, degree in Mining Engineering

University of Pretoria (South Africa), master's degree

Track record:

2010–2013	COO at Kazakhmys Group
2013–2014	Deputy CEO and Head of Operations at MMC Norilsk Nickel
2014–2015	First Deputy CEO and COO at MMC Norilsk Nickel
2015–present	First Vice President and COO at MMC Norilsk Nickel
2016–present	Member of the Board of the Non-Profit Russian Mining Council Partnership
2017–2018	Member of the Board of Directors at Norilsk Nickel Harjavalta Oy
2017–present	Member of the Board of Directors at MPI Nickel Pty Ltd, Norilsk Nickel Cawse Pty Ltd, Norilsk Nickel Avalon Pty Ltd, Norilsk Nickel Wildara Pty Ltd, Norilsk Nickel Africa (Pty) Ltd, Norilsk Nickel Mauritius, and also member of the Executive Committee at Nkomati

Marianna ZAKHAROVA

Member of the Management Board since 2016

Member of the Board of Directors since 2010

First Vice President

Born in: 1976

Nationality: Russia

Education:

Peoples' Friendship University of Russia (RUDN), Master's degree in Law

Track record:

2010–2015	Member of the Management Board, Deputy CEO for Legal Affairs at LLC Interros Holding Company (Interros Holding Company CJSC until 2015)
2010–2015	Member of the Board of Directors at ProfEstate
2015–present	First Vice President for Corporate Governance, Asset Management and Legal Affairs at MMC Norilsk Nickel

Sergey BATEKHIN

Member of the Management Board since 2013

Senior Vice President

Born in: 1965

Nationality: Russia

Education:

Krasnoznamenny Military Institute of the USSR Ministry of Defence, major in foreign languages (military and political translation)

Plekhanov Russian Academy of Economics, degree in Finance and Credit

Moscow International Higher Business School (MIRBIS), Master of Business Administration

Track record:

2009–2015	Member of the Board of Directors of the Continental Hockey League
2010–2013	Vice President of CJSC Interros Holding Company
2012–2015	Chairman of the Board of Directors at Interport Management Company
2013–2015	Member of the Management Board, Deputy CEO, Head of Sales, Commerce and Logistics at MMC Norilsk Nickel, and member of the Board of Directors at Metal Trade Overseas Sa and Norilsk Nickel Marketing (Shanghai) Co., Ltd
2013–2014	Member of the Board of Directors, Chairman of the Board of Directors at Yenisey River Shipping Company and member of the Board of Directors at Norilsk Nickel (Asia) Ltd
2015–2018	Senior Vice President, Head of Sales, Commerce and Logistics at MMC Norilsk Nickel (Vice President until 2016)
2018–present	Senior Vice President, Head of Sales, Procurement and Innovation at MMC Norilsk Nickel, member of the Board of Directors of the Continental Hockey League

Andrey BOUGROV

Member of the Management Board since 2013

Deputy Chairman of the Board of Directors since 2013

Senior Vice President

Born in: 1952

Nationality: Russia

Education:

Moscow State Institute of International Relations (MGIMO University), degree in International Economic Relations; PhD in Economics

Track record:

2002–present	Member of the non-governmental Council on Foreign and Defence Policy
2006–present	Member of the Management Board of the Russian Union of Industrialists and Entrepreneurs (RSPP)
2013–present	Vice President at Interros Holding Company LLC (Interros Holding Company CJSC until 2015)
2013–2015	Member of the Management Board, Deputy Chairman of the Board of Directors, Deputy CEO at MMC Norilsk Nickel
2013–present	Vice President of the Russian Union of Industrialists and Entrepreneurs (RSPP)
2014–present	Member of the Board of Directors at Inter RAO UES PJSC (Inter RAO UES OJSC until 2015)
2014–present	Member of the Expert Committee of the Russian President's Anticorruption Office
2015–present	Member of the Management Board and Deputy Chairman of the Board of Directors at MMC Norilsk Nickel
2015–2016	Member of the Investment Committee at the Federal Hydro-Generating Company RusHydro
2015–present	Senior Vice President at MMC Norilsk Nickel (Vice President until 2016)
2015–present	Member of Non-Profit Partnership National Council on Corporate Governance
2016–present	Member of the Expert Council on Corporate Governance at the Bank of Russia
2016–present	Chairman of the Issuer Committee at the Moscow Exchange
2018–present	Chairman of the Council of Non-Financial Reporting at RSPP
2018–present	Member of the Expert Council on Corporate Governance at the Russian Ministry of Economic Development
2018–present	Member of the Advisory Board of the RBTT

Larisa ZELKOVA

Member of the Management Board since 2013

Senior Vice President

Born in: 1969

Nationality: Russia

Education:

Lomonosov Moscow State University, degree in Journalism

Track record:

1999–2014	CEO of Vladimir Potanin Foundation, non-profit charitable organisation
2007–present	Member of the Presidium of the MGIMO Endowment Fund
2009–present	Member of the Board of Trustees at Pavlovsk Gymnasium Private Non-Profit School
2011–present	Member of the Board of Directors at LLC Rosa Khutor Ski Resort Development Company, Chair of the Management Board at the State Hermitage Museum Endowment Fund
2011–2016	Member of the Supervisory Board at the Russian International Olympic University
2012–2018	Member of the Russian Presidential Council for Culture and Art
2013–2014	Member of the Board of Directors at Prof-Media Management LLC
2013–2015	Member of the Management Board and Deputy CEO for Social Policy and Public Relations at MMC Norilsk Nickel
2014–2018	President of Vladimir Potanin Foundation, non-profit charitable organisation
2014–present	Chair of the Board at Vladimir Potanin Foundation (formerly, Vladimir Potanin Foundation, non-profit charitable organisation)
2015–present	Member of the Board of Trustees at the Hermitage Foundation UK and member of the Board of Trustees at the Russian Federal Public Academy of Education
2015–present	Senior Vice President for HR, Social Policy and Public Relations at MMC Norilsk Nickel (Vice President until 2016)
2016–present	Member of the Board of Trustees at the Endowment Fund for Education, Science and Culture
2017–present	Member of the Supervisory and Management Boards of the Norilsk Development Agency

Sergey MALYSHEV

Member of the Management Board since 2013

Senior Vice President

Born in: 1969

Nationality: Russia

Education:

Finance Academy under the Government of the Russian Federation, degree in Finance and Credit

Institute of Advanced Training at Russian Presidential Academy of National Economy and Public Administration, degree in Public and Municipal Administration

A.N. Kosygin Russian State University, degree in Mechanical Engineering

Track record:

2009–2013	Deputy CEO for Economics and Finance, First Deputy CEO at OJSC Energostroyinvest-Holding
2013–2015	Deputy CEO, Head of Economics and Finance at MMC Norilsk Nickel
2015–2016	Senior Vice President, Head of Economics and Finance at MMC Norilsk Nickel (Vice President until 2016)
2016–present	Senior Vice President and CFO at MMC Norilsk Nickel

Alexander GRUBMAN

Member of the Management Board since 2018

Senior Vice President

Born in: 1962

Nationality: Russia

Education:

Moscow State University of Food Production, degree in Mechanical Engineering

Track record:

2010–2014	CEO of Severstal's Russian Steel Division, Deputy CEO of OJSC Severstal
2014	First Deputy CEO of Chelyabinsk Pipe-Rolling Plant
2015–2017	CEO of OJSC Chelyabinsk Pipe-Rolling Plant (PJSC Chelyabinsk Pipe-Rolling Plant from 8 July 2016) and CEO of OJSC Pervouralsk New Pipe Plant (on a part-time basis)
2018–present	Senior Vice President for Strategy and Business Development at MMC Norilsk Nickel

Vladislav GASUMYANOV

Member of the Management Board since 2014

State Secretary – Vice President[1]

Born in: 1959

Nationality: Russia

Education:

Kiev Civil Aviation Engineering Institute

North-West Academy of Public Administration

Track record:

2012–2015	Director of Corporate Security and Head of Security at MMC Norilsk Nickel
2014–2015	Member of the Management Board at MMC Norilsk Nickel
2014–2016	Member of the Board of Directors at OJSC Yenisey River Shipping Company
2015	Vice President, Director of Corporate Security and Head of Security at MMC Norilsk Nickel
2015–2018	Vice President and Head of Corporate Security at MMC Norilsk Nickel
2017–present	Member of the Board of Directors of Dynamo Moscow Football Club
2017–present	Head of the Department of Corporate Security at MGIMO's International Institute of Energy Policy and Diplomacy (MIEP MGIMO)
2017–present	Member of the Board of Directors at Norilsk Nickel Africa (Pty) Ltd and Norilsk Nickel Mauritius, and also member of the Executive Committee at Nkomati
2018–present	State Secretary – Vice President of Government Relations at MMC Norilsk Nickel

Elena KONDRATOVA

Member of the Management Board since 2014

Vice President

Born in: 1972

Nationality: Russia

Education:

Moscow Pedagogical State University, degree in Psychology

Track record:

2013–2015	Chief of Staff at MMC Norilsk Nickel, Advisor to the President of Interros Holding Company CJSC (on a part-time basis)
2014–present	Member of the Management Board at MMC Norilsk Nickel
2015	Chief of Staff at MMC Norilsk Nickel
2015–present	Vice President and Chief of Staff at MMC Norilsk Nickel, Advisor to the President of LLC Interros Holding Company (on a part-time basis)

[1] *Senior Vice President since March 2019.*

Nina PLASTININA

Member of the Management Board since 2013

Vice President

Born in: 1961

Nationality: Russia

Education:

Moscow Chemical Machinery Construction Institute, degree in Mechanical Engineering

Bauman Moscow Technical Institute, research degree in Economics and Production Management

Track record:

2008–2013	Director of Financial Department at CJSC Interros Holding Company
2013–2015	Director of Internal Control Department at MMC Norilsk Nickel
2015–2016	Vice President for Internal Audit at MMC Norilsk Nickel
2016–present	Vice President for Internal Controls and Risk Management at MMC Norilsk Nickel

Sergey DUBOVITSKY

Member of the Management Board since 2018

Vice President

Born in: 1978

Nationality: Russia

Education:

Moscow State Institute of International Relations (MGIMO University), School of International Information

INSEAD Business School, Master of Business Administration

Track record:

2005–2013	Strategy work within the Oil & Gas Practice, McKinsey & Co (global consultancy)
2013–2016	Head of Strategic Planning Department at MMC Norilsk Nickel
2016–present	Vice President for Strategic Planning at MMC Norilsk Nickel

Management Board members' holdings and transactions in the Company's shares

As at 31 December 2018, the members of the Management Board have no holdings in the Company's ordinary shares and/or ADRs and did not enter into any relevant sale and purchase transactions in 2018.

CORPORATE SECRETARY

The mission of the Corporate Secretary is to ensure compliance with the procedures for the protection of shareholders' rights and legitimate interests, as prescribed by the applicable laws and the Company's by-laws, and to monitor such compliance.

Pursuant to the Charter, the Corporate Secretary is appointed by the Board of Directors for a three-year term. The Board of Directors may terminate the powers of the Corporate Secretary prior to their expiration.

In accordance with the Regulation on the Corporate Secretary of PJSC MMC Norilsk Nickel approved by the Board of Directors on 20 April 2015, the Company's Corporate Secretary has an administrative reporting line to the President and is accountable to the Board of Directors.

At this time, the Corporate Secretary is Mr. Pavel Platov. In the reporting year, Pavel Platov's appointment was extended by resolution of the Board of Directors.

As at 31 December 2018, the Corporate Secretary has no holdings in the Company's ordinary shares and did not enter into any relevant sale and purchase transactions in 2018.

The Corporate Secretary is responsible for:

- preparation and running of the General Meeting of Shareholders;
- making arrangements for and running meetings of the Board of Directors and its committees;
- contributing to the improvement of the Company's corporate governance framework and practices;
- managing the operations of the Secretariat;
- other functions as per the Company's by-laws.

Pavel PLATOV

2017–present: Corporate Secretary
(2011–2017: Company Secretary)

Born in: 1975

Nationality: Russia

Education:

Dobrolyubov Linguistics University of Nizhny Novgorod

Russian Presidential Academy of National Economy and Public Administration

Track record:

2017–present Corporate Secretary at PJSC MMC Norilsk Nickel (2011–2017: Company Secretary)

CONTROLS SYSTEM

INTERNAL CONTROL FRAMEWORK

The Company has an internal control system in place intended to promote the achievement of the Company's goals and enhance investor confidence in its business and corporate bodies. The internal control system is aimed at improving the effectiveness and efficiency of activities, keeping reliable and accurate financial and management accounts, ensuring compliance with the requirements of applicable Russian laws and the Company's by-laws.

The Company has the Internal Control Policy adopted by resolution of the Board of Directors in October 2018. In addition, internal control requirements, procedures, and processes are covered by the procedure for "Internal Control Processes at MMC Norilsk Nickel", as well as by business unit regulations and other internal guidelines.

ICS components are also assessed annually as part of the audit of the financial statements.

The ICS effectiveness report is reviewed by the Board of Directors' Audit Committee.

All internal control processes, principles, mechanisms, means, and procedures make up a system of elements:

- control environment;
- assessment of risks to business processes;
- control procedures;
- information and communications;
- monitoring of the internal control system.

Entities that form the internal control system are structured on a number of levels, which comprise the Company's and subsidiaries' corporate bodies, business units and employees as well as dedicated control bodies:

- Audit and Sustainable Development Committee,
- Internal Audit Department,
- Audit Commission,
- Internal Control and Risk Management Unit, including the Internal Control Department, Risk Management Service, and Financial Control Service.

Depending on the risk level, the Company monitors the effectiveness of the internal control system through:

- routine monitoring of the business processes as part of the day-to-day operations;
- annual self-assessment of internal controls;
- internal audit.

The Financial Control Service audits the financial and business operations of the Company and its subsidiaries to report and issue recommendations to the President and directors of the Company. The head of the Financial Control Service is appointed by a resolution adopted by the Company's Board of Directors.

Internal Control Department

The Internal Control Department aims to create an efficient internal control framework that represents a combination of organisational processes, policies and guidelines, control procedures, corporate culture principles and actions that the internal control entities perform to provide reasonable assurance that the Company will achieve its targets. The Department's functions include:

- developing and boosting efficiency of the internal control framework;
- ensuring a consistent approach to the design, operation and development of the internal control framework;
- detecting and preventing any waste, misuse or misappropriation of funds or assets of the Company and its subsidiaries, wrongdoings and theft;
- ensuring accuracy of metrics and measurement standards for the control and accounting of metal bearing products;
- arranging and implementing internal controls so as to combat illegal activities, such as money laundering and terrorism financing;
- managing the Corporate Trust Service operations.

Internal Audit Department

The Internal Audit Department was established to assist the Board of Directors and executive bodies in enhancing the Company's management efficiency and improving its financial and economic operations through a systematic and consistent approach to the analysis and evaluation of risk management and internal controls as tools to provide reasonable assurance that the Company will achieve its goals.

The Internal Audit Department conducts unbiased and independent audits, assessing how effective the internal controls and the risk management system are. Based on the audits, the department prepares reports and proposals for the management on how to improve internal controls, and monitors the development of action plans to eliminate violations.

In order to ensure independence and objectivity, the Internal Audit Department functionally reports to the Board of Directors through the Audit and Sustainable Development Committee and has an administrative reporting line to the Company's President. The Board of Directors' Audit and Sustainable Development Committee regularly reviews the department's work plan and audit reports.

In 2018, the Department conducted the following audits:

- occupational health and safety risk management;
- management of rarely used and non-liquid inventory;
- energy assets;
- IT;
- effectiveness of control procedures in preparation of the financial statements;
- non-industrial assets.

Based on these audits, the management developed action plans which provide for a range of activities aimed at improving internal control procedures and mitigating risks.

It continuously monitors the implementation of activities developed by the management. The monitoring analytics is regularly reviewed by the Audit and Sustainable Development Committee.

Audit Commission

The Audit Commission monitors the financial and business operations of the Company. The commission audits the Company's financial and business operations on an annual basis and at any time as decided by the commission, resolutions of the General Meeting of Shareholders and the Board of Directors or as requested by shareholders who hold collectively at least 10% of the Company's voting shares. Following the review of financial and business results, the Audit Commission issues an opinion. Business operations were last audited in April–May 2018.

The Audit Commission works in the shareholders' interests and reports to the General Meeting of Shareholders, which elects members of the Audit Commission until the next Annual General Meeting of Shareholders. The Audit Commission is independent from the officers of the Company's governance bodies, and its members do not hold positions in the Company's governance bodies.

In the reporting year, the Audit Commission consisted of five people as prescribed by the resolution of the Annual General Meeting of Shareholders dated 28 June 2018.

Remuneration payable to the members of the Audit Commission was approved by the Annual General Meeting of Shareholders. Members of the Audit Commission employed by the Company are remunerated throughout the year as per their job description and employment terms.

Remuneration of the Audit Commission members in 2018

Remuneration type	Remuneration amount	
	thousand RUB	thousand USD
Remuneration for the membership in a control body	7,200	115
Salary	5,087	81
Bonus	0	0
Commissions	0	0
Benefits	0	0
Compensation	0	0
Other types of remuneration	0	0
Total	**12,287**	**196**

Members of the Audit Commission

Name	Primary employment and position
Vladimir Shilkov	Chief Investment Officer at CIS Investment Advisers, Deputy Project Manager of the Financial Control Service at MMC Norilsk Nickel
Anna Masalova	Chief Financial Officer, Moscow–McDonalds CJSC
Artur Arustamov	Director of Price Control and Commercial Operations Department, En+ Management
Georgy Svanidze	Head of Financial Department, member of the Management Board at Interros Holding Company
Elena Yanevitch	Chief Executive Officer, Interpromleasing

ANTI-CORRUPTION AND INTEGRITY

The Company complies with anti-corruption laws of the Russian Federation and other countries where it operates, as well as with applicable international laws and internal regulations. This promotes the Company's reputation and strengthens trust and confidence of shareholders, investors, business partners and other stakeholders. As part of its effective anti-corruption combat, the Company has developed and approved the following anti-corruption regulations:

- Business Ethics Code;
- Code of Conduct and Ethics for Members of the Board of Directors;
- Anti-Corruption Policy;
- Regulation on the Product Procurement Procedure for MMC Norilsk Nickel's Enterprises;
- standard anti-corruption agreement – appendix to the employment contract;
- Regulation on Information Security;
- Regulation on the Prevention and Management of Conflicts of Interest;
- Regulation on Business Gifts;
- Procedure for Anti-Corruption Due Diligence on Internal Documents at the Head Office of MMC Norilsk Nickel;
- Regulation on the Conflict of Interest Commission;
- Information Policy.

Having joined the Anti-Corruption Charter of the Russian Business, **the Company implements dedicated anti-corruption measures based on the Charter and set forth in the Company's Anti-Corruption Policy**. In November 2016, the Company joined the United Nations Global Compact, which aims to promote recognition and practical application of ten basic principles of human rights, labour, environment and anti-corruption by businesses worldwide.

Starting in 2015, all of the Company employees sign an agreement setting out their obligations in the anti-corruption area. All of the Company's employees are familiarised with the corporate Anti-Corruption Policy and related regulations.

The Company ensures functioning of the Preventing and Fighting Corruption page on the corporate intranet containing information on anti-corruption regulations adopted, measures taken, preventive procedures introduced, legal training sessions organised and law-abidance promotion efforts taken.

Nornickel's Corporate Security Unit continuously identifies, analyses and assesses the financial, corruption, reputational and other risks entailed by large-scale operations, with close attention paid to business reputation, reliability and solvency of potential partners and counterparties.

Regulating the conflict of interest

One of the key anti-corruption measures is timely prevention and management of conflicts of interest. Procedures for assessing and settling conflicts of interest are set forth in the Regulation on the Prevention and Management of Conflicts of Interest at MMC Norilsk Nickel. As part of the regulation, the Company has approved the standard declaration form for reporting conflicts of interest, to be filled in by candidates applying for vacant positions or by the Company's employees whenever required.

The regulation extends to all employees of the Company and sets forth key principles that include obligation of each employee to disclose a conflict of interest, as well as non-retaliation for reporting the conflict of interest.

On top of that, the Company has undertaken measures aimed at preventing potential conflict of interest involving the directors and senior managers. From December 2016, members of the Board of Directors are required to annually submit information on relatives and family as per the approved form.

The Company takes measures aimed at identifying related-party transactions. All measures combined, undertaken

Starting in 2015, all of the Company employees sign an agreement setting out their obligations in the anti-corruption area. All of the Company's employees are familiarised with the corporate Anti-Corruption Policy and related regulations.

2016 milestone

November 2016

the Company joined the United Nations Global Compact, which aims to promote recognition and practical application of ten basic principles of human rights, labour, environment and anti-corruption by businesses worldwide.

To make a report, anyone is invited to call a toll-free 24/7 hotline:

+7 800 700-19-41,
+7 800 700-19-45,

or e-mail to
skd@nornik.ru.

From December 2016, members of the Board of Directors are required to annually submit information on relatives and family as per the approved form.

In 2018, the corporate security was ensured through continuous review of corporate risks and threats.

in order to identify and prevent conflicts of interest, minimise the probability of negative consequences for the Company.

Insider information

The Company implements initiatives to prevent unauthorised use of insider information. In accordance with Federal Law No. 224-FZ of 27 July 2010 On Prevention of Unlawful Use of Inside Information and Market Manipulation and on Amendments to Certain Legislative Acts of the Russian Federation, as well as the Market Abuse Regulation of the European Parliament and of the Council No. 596/2014 of 16 April 2014, the Company keeps a list of insiders, reviews by-laws and corporate events, to control implementation of measures as provided for in the Russian and international legislation, which includes disclosure of insider information. The Company also undertakes other measures aimed at preventing unlawful use of insider information.

Corporate Trust Service

The Corporate Trust Service is part of the Internal Control Department and helps the Company's management to promptly respond to reports of abuses, embezzlement and other violations. Employees, shareholders and other stakeholders have an opportunity to report any actions that will or might result in financial damages or be detrimental to the business reputation of the Company. The key principles underlying the Corporate Trust Service include guaranteed confidentiality for whistleblowers, timely and unbiased consideration of all reports. In no circumstances does the Company impose sanctions (dismissal, demotion, deprivation of a bonus) against the employee who submitted a report to the Corporate Trust Service.

To make a report, anyone is invited to call a toll-free 24/7 hotline: +7 800 700-1941, +7 800 700-1945, or e-mail to skd@nornik.ru.

Information on received and processed reports is disclosed annually by the Company as part of its CSR report.

Comprehensive security framework

In 2018, the corporate security was ensured through continuous review of corporate risks and threats. The comprehensive corporate security system underpinned by the MBO (Management by Objectives) principles enabled the Company to promptly respond to key risks in economic, corporate, information and physical security, counter embezzlement and illicit trafficking of precious and non-ferrous metals, and efficiently prevent in-house corruption.

As the Company is engaged in manufacturing and selling products containing precious metals, Nornickel's Corporate Security Unit developed a comprehensive identification methodology for products containing precious metals which have been stolen or illicitly traded. The methodology have gained recognition internationally and was further developed into an automated information retrieval wizard powered by a unique databank of strategically important raw materials.

As part of its efforts to improve the effectiveness of the measures against cross-border illicit trading and smuggling of precious metals, the Company participates in developing a unified databank of products of Russian and South African MMCs.

Nornickel complies with anti-terrorism requirements and enhances security of the Company's strategic power and transportation facilities. In 2018, Nornickel conducted 126 routine training sessions and organised four tactic drills together with the Federal Security Service, Ministry of Internal Affairs, EMERCOM and National Guard of the Russian Federation. The main objective of these activities was to enhance anti-terrorist security at industrial and social sites.

As part of its efforts to improve the effectiveness of the measures against cross-border illicit trading and smuggling of precious metals, the Company participates in developing a unified databank of products of Russian and South African MMCs.

In 2018, Nornickel conducte

126

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and organised **four** **tactic drills** together with the Federal Security Service, Ministry of Internal Affairs, EMERCOM and National Guard of the Russian Federation

The Company has an Information Security Policy in place that defines relevant business processes and areas including governance processes at strategic and tactical levels, operational processes, and corporate governance responsibility for information security.

As part of its information security framework, Nornickel:

- categorises information assets and assesses information security risks;
- manages information security requirements at different stages of the information system life cycle;
- ensures compliance with the legal and regulatory information security requirements;
- manages its information security architecture;
- uses technical means to ensure information security of assets;
- raises awareness in information security;
- manages information security incidents;
- ensures information security of the process control system;
- conducts information security assessment and reporting.

The Company pays close attention to safety and confidentiality of the employee and counterparty personal data. The implemented solutions allow to identify and properly respond to new threats and risks.

Monitoring of cyber security performance is part of the Company's information security management system and information security assessment and reporting. The results of performance assessment of cyber security systems are reviewed at a corporate level and are circulated to the governance bodies and employees through corporate procedures and initiatives.

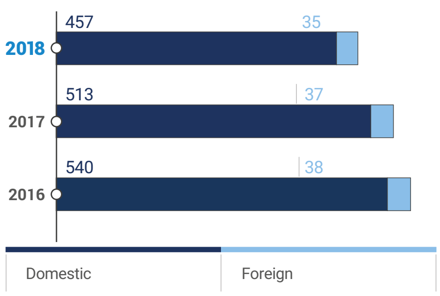
On top of that, Nornickel's Information Security Charter for Critical Industrial Facilities, an initiative proposed at a meeting of the Club of Information Security in Industry, stood the test of Russian companies and was welcomed at the Partnership of State Authorities, Civil Society and the Business Community science forum (tech version of Davos) held in Germany. The Charter was praised at the OSCE's cyber security conference in Rome and was handed over to the OSCE Secretariat for review as part of proposals for combating cyber threats and attacks on information infrastructure.

SUPPLY CHAIN AND PROCUREMENT CONTROL

The Company aims to work with partners that are committed to environmental protection and work safety.

Nornickel pays close attention to fostering ties with reliable domestic suppliers and contractors.

The Company's suppliers and contractors, items



>1,400

potential suppliers

registered in SAP SRM, an automated solution for supplier relationship management

Supply chain management at Nornickel seeks to ensure continuous operation of the Group's companies, and reliability of shipments to customers. The Company aims to work with partners that are committed to environmental protection and work safety. The Company expects its suppliers to follow the global best practices in sustainable use of resources and materials, and to have the relevant certificates.

Nornickel pays close attention to fostering ties with reliable domestic suppliers and contractors. In 2018, the Company continued to apply a life cycle costing approach to selecting suppliers (based on the costs of ownership, operation and utilisation). The selected suppliers are required to sign a set of agreements obliging them not only to make a delivery, but also to ensure compliance of the supplied equipment with the relevant technical operability coefficients as well as its uninterrupted operation.

Nornickel is committed to working with more local suppliers. To this end, it developed a centralised pilot testing procedure enabling it to phase out imported equipment with that manufactured locally. Foreign suppliers are mainly engaged for delivering unique equipment or systems that do not have Russian alternatives.

Nornickel strives to create an environment of shared culture, visions and values in its relationships with suppliers. An ESG clause is incorporated into the standard agreement with suppliers and contractors. The Company adheres to the codes of conduct applied by its business partners and devised by foreign manufacturers. There is also ongoing work to develop Nornickel's Charter for Suppliers that is expected to be signed by the Company's suppliers and contractors. The Charter reflects the values that underpin the Company's business **(reliability, development, efficiency, responsibility, professionalism, and cooperation)** and is aligned to the principles on human rights, anti-corruption, legal, safety, environmental and energy efficiency.

Our procurement team together with experts from other departments are looking into alternative technologies (alternative fuel and energy sources) that can reduce the Company's environmental footprint and cut costs. The current tender procedure includes a criterion of the supplier's readiness to participate in the Company's alternative energy initiatives.

Creating effective feedback mechanisms is one of the Company's priorities for supplier relationship development. Nornickel has put in place SAP SRM, an automated solution for supplier relationship management. This gives the suppliers continuous access to information relating to the Company's procurement procedures. Over 1,400 potential suppliers are currently registered and licensed to work in the system.

Procurement

The Company's procurement activities are aimed at catering to its needs with regard to required products and their quality, reliability, and price in a full and timely manner, as well as at using relevant funds efficiently.

At Nornickel, the procurement process is certified for compliance with ISO 9001 and ISO 14001. In 2018, Nornickel's divisions amended their procurement procedures to reflect the changes in the Federal Law No. 223-FZ On Procurement of Goods, Work and Services By Certain Types of Legal Entities. The documents

Procurement activities can be either centralised or organised independently by the Head Office, branches or Group enterprises

In 2018, the tender committee and tender commissions of the Head Office carried out procurement for

over USD 330 mln

(RUB 20.9 bn)

provide a framework for small and medium-sized businesses (SMEs) to compete for procurement contracts and set the minimum threshold of annual procurement contracts that can be awarded to SMEs.

Procurement activities can be either centralised or organised independently by the Head Office, branches or Group enterprises. Depending on the expected purchase price, procurement can be organised either as a bidding procedure (tender), simple procurement, or simplified procurement. Procurement procedures may involve collective procurement bodies, such as the tender committee, tender commissions of the Head Office, procurement and tender commissions of the branches and Group companies.

In 2018, the tender committee and tender commissions of the Head Office that are in charge of the most expensive procurement items, full-cycle projects and IT products, carried out procurement for over USD 330 mln (RUB 20.9 bn). The Company's tender committee focuses on improving procedures for identifying reliable suppliers of quality products at a fair market price.

Preventing corruption and other misconduct

Nornickel evaluates the business reputation, reliability and solvency of potential counterparties to mitigate risks. To prevent procurement misconduct and secure maximum benefit through unbiased selection of the best proposal, Nornickel adheres to the following rules:

- procurement relies on the role allocation principle (procurement owner, customer and secretary of a collective procurement body);
- business or technical and business proposals of qualified suppliers are compared based on objective and measurable criteria approved prior to the request of proposals stage;
- the results of the qualification-based selection and the winner are approved by the collective procurement body comprising representatives from various functional units of the Company.

INDEPENDENT AUDIT

2018 milestone

June 2018

The General Meeting of Shareholders, following the recommendation of the Board of Directors, approved JSC KPMG as the Company's auditor for RAS and IFRS 2018 accounts.

In 2018:

The auditor's fee of MMC Norilsk Nickel amounted to

USD 3.5 mln

The share of non-audit services rendered to the Company accounted for

55%

of the total fee

The Company has approved the Procedure to Select an Auditor for MMC Norilk Nickel's RAS and IFRS Financial Statements, which requires first to establish a tender commission to produce a list of auditors who perform best in the Russian market of audit services. The auditor whose conditions are recognised to be the best following the procedure, is recommended to the Audit and Sustainable Development Committee which, in its turn, assesses the candidate for an independent auditor and provides recommendations to the Board of Directors. Under applicable laws and Clause 7.1.9 of the Company's Charter, the auditor shall be approved by an Annual General Meeting of Shareholders.

In June 2018, the General Meeting of Shareholders, following the recommendation of the Board of Directors, approved JSC KPMG as the Company's auditor for RAS and IFRS 2018 accounts.

The auditor receives a fixed fee as determined in the technical and business proposal that sets out the audit procedure for all material audited facilities and calculates the labour input and travel expenses required to conduct the audit, based on the qualifications and hourly rates of experts engaged. In 2018, the auditor's fee of MMC Norilsk Nickel amounted to USD 3.5 mln[1], including overhead charges.

KPMG also provides non-audit tax and advisory services to Nornickel. To avoid a conflict of interest, KPMG has a policy regulating the services that can be provided to its clients. The policy ensures compliance with IESBA requirements, the Russian Rules for the Independence of Auditors and Audit Organisations, and other applicable requirements. In 2018, the share of non-audit services rendered to the Company stood at 55% of the total fee.

1 *The auditor's fee includes VAT (18%).*

Auditor's fee for 2018

Service type	Fee	
	RUB mln	USD mln
Audit of consolidated IFRS financial statements for 2018	67.7	1.1
Audit of RAS financial statements for 2018	10.7	0.2
Review of interim IFRS financial statements for 6M 2018	17.3	0.3
Non-audit services	117.8	1.9
Total	**213.5**	**3.5**

REMUNERATION

The Company’s remuneration framework is continuously and directly supervised by the Board of Directors, with the Corporate Governance, Nomination and Remuneration Committee responsible for the development, oversight, and regular revisions of the Remuneration Policy for the Company's Board of Directors, Management Board and the President.

Remuneration paid to the members of governance bodies in 2018 including salaries, bonuses, commissions, benefits and reimbursement of expenses totalled RUB 5.7 bn (USD 91.0 mln)[1].

[1] *The amount of remuneration is different from that specified in the 2018 consolidated IFRS financial statements as it excludes non-cash remuneration (insurance and VHI payments, and annual remuneration liabilities as at 31 December 2018). The remuneration accrued to the members of governance bodies in 2018 under IFRS totalled USD 109 mln (RUB 6.8 bn).*

Board of Directors Remuneration

The Board of Directors’ annual remuneration is set out in the Remuneration Policy for Members of the Board of Directors approved by the General Meeting of Shareholders in June 2014

The Policy is available on the Company's website at: https://www.nornickel.com/files/en/corporate_documents/constituent_documents/REMUNERATION-POLICY-for-MEMBERS-OF-BOARD-OF-DIRECTORS-.pdf

The Policy is guided by the rule of equal remuneration for non-executive directors.

To avoid any potential conflict of interest, executive directors do not receive any additional remuneration for their membership in the Board of Directors.

The Remuneration Policy for Members of the Board of Directors sets forth the following annual remuneration for non-executive directors:

- **base remuneration** of USD 120,000 for the Board membership;
- **additional remuneration** of USD 50,000 for membership in a Board committee;
- **additional remuneration** of USD 150,000 for chairing a Board committee;

On top of that, non-executive directors are entitled to reimbursement of expenses incurred while discharging their duties.

Remuneration payable to executive directors features the following unique components:

- remuneration linked to the Company’s operating results;
- stock options;
- additional benefits, including all forms of insurance other than directors' liability insurance;
- severance pay and any payments related to the change of ownership;
- pension plans and schemes.

Board of Directors remuneration in 2018

Remuneration types	RUB mln	USD mln
Remuneration for membership in a governance body	248.4	4.0
Salary	0	0
Bonus	0	0
Commissions	0	0
Benefits	0	0
Reimbursement	0.7	0.01
Other	0	0
Total	**249.2**	**4.0**

The annual base remuneration for the Chairman of the Board of Directors is USD 1 mln, payable every quarter in equal instalments (in roubles at the Bank of Russia's exchange rate). Subject to a special resolution of the General Meeting of Shareholders, the Chairman of the Board of Directors may be entitled to additional remuneration and benefits.

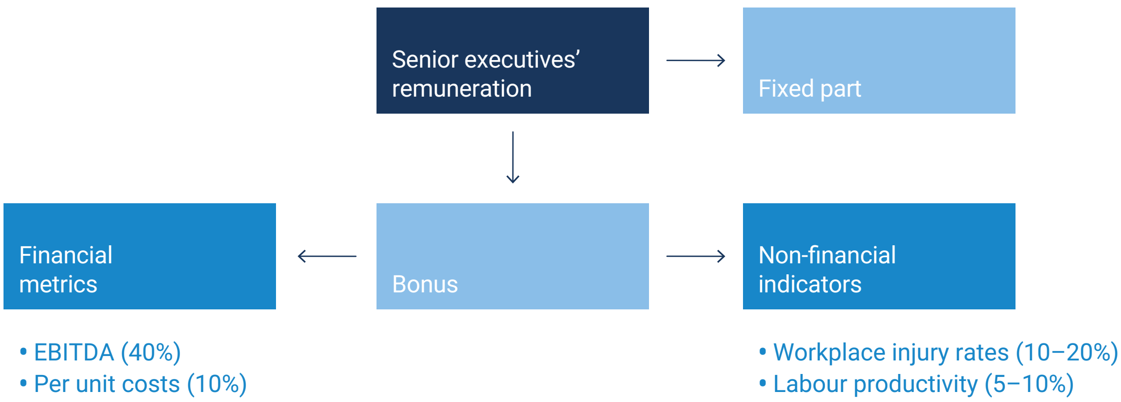
The Company's remuneration framework clearly differentiates between non-executive and executive directors.

Additional benefits for directors include liability insurance and reimbursement of losses incurred in connection with their membership in the Board of Directors.

Key performance indicators and management remuneration

KPIs used to assess the senior executives' performance reflect the achievement of Nornickel's strategic objectives. As per the Company's Charter, the remuneration and reimbursement payable to the Company's President and members of the Management Board are determined by the Board of Directors.

Total remuneration payable to senior executives comprises the base salary and bonuses. Bonuses are linked to the Company's performance, including both financial metrics (EBITDA, per unit costs) and non-financial indicators (lower workplace injury rates and labour productivity). The variable part of the remuneration payable to the Management Board takes into account key performance indicators updated and approved annually by the Corporate Governance, Nomination and Remuneration Committee of the Board of Directors.



Management Board remuneration in 2018

Remuneration types	RUB mln	USD mln
Remuneration for membership in a governance body	2.3	0.04
Salary	3,117.5	49.7
Bonus	2,338.3	37.3
Commissions	0	0
Benefits	0	0
Reimbursement	0	0
Other	0	0
Total	**5,458.1**	**87.0**

7 Risk report


75%

RISK MANAGEMENT

Board of Directors	Managing and monitoring strategic and key operational risks, approving the risk map and by-laws on risk management, reviewing the risk report
Senior management	Managing and monitoring strategic and key operational risks, improving the risk management system, producing recommendations to the Board of Directors on the performance of the risk management system
Vice President for internal controls and risk management	Implementation and improvement of the corporate risk management framework
Heads of business units and subunits	Material operational risk management

The Company continuously manages risks that affect its strategic and operational goals. These efforts include identification and assessment of external and internal risks in terms of their impact on key financial and non-financial metrics along with the development and implementation of response and minimisation measures.

The Company has developed and adopted all relevant risk management documents, including:

- Corporate Risk Management Policy;
- Corporate Risk Management Framework Regulations;
- Risk Management Regulations;
- Investment Project Risk Management Regulations;
- risk management regulations for specific processes (management of tax, health and safety and market risks;
- Guidelines for development of business continuity plans.

Risk management embraces all business areas and governance levels:

- strategic risks are managed by the Board of Directors and the Company's senior management;
- key operational risks are managed by the Company's senior management;
- other material operational risks are managed by heads of business units and subunits.

The corporate policy sets out the following key risk management objectives:

- increase the likelihood of achieving the Company's goals;
- improve the resource allocation efficiency; and
- boost the Company's investment case and shareholder value.

The risk management framework relies on the principles and requirements of Russian and international laws, and professional standards, including the Corporate Governance Code recommended by the Bank of Russia, ISO 31000 (Risk Management) and COSO ERM (Enterprise Risk Management – Integrated Framework).

To manage catastrophic production risks, the Company develops and approves business continuity plans that in case of emergency set out:

- interaction procedure for business units;
- operations support or resumption plan;
- rehabilitation or reconstruction plan for affected assets.

The corporate risk management framework (CRMF) implementation and improvement initiatives are spearheaded by the Company's Vice President and Head of Internal Controls and Risk Management and its Risk Management Service.

In 2019, key initiatives aimed at improving the CRMF will include:

- continued improvement of risk management practices in strategic and operational planning;
- use of simulation modelling for investment risk assessment;
- methodology enhancement to analyse and manage various categories/types of technical and production risks;
- development of online learning programmes on risks for the Company's employees;
- broadening of the business continuity management perimeter to non-production risks: information technology, security, staffing, etc.

Insurance

Insurance is one of the most important tools for managing risks and finances and protecting the assets of the Company and its shareholders against any unforeseen losses related to our operations, including due to external hazards.

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

We have implemented a corporate insurance programme that covers assets, equipment failures and business interruptions across the Group. Our corporate insurance policies are issued by major Russian insurers in cooperation with an international broker. This helps the Company make sure that its risks are underwritten by highly reputable international re-insurers.

The same principles of centralisation apply to our freight, construction and installation, aircraft and ship insurance arrangements. The Group, as well as its directors and officers, carry business and third-party liability insurance.

To optimise terms of coverage and better manage covered risks, we follow the best mining industry practices.

KEY RISKS

Strategic risks

Price risk (decrease in market prices for Nornickel metals)

Potential decrease in revenues due to lower prices for metals (nickel, copper, platinum, palladium, etc.) subject to the actual or potential changes in demand and supply on certain metal markets, global macroeconomic trends, and the financial community's interest in speculative/investment transactions in the commodity markets.

Key risk factors	Mitigants
• Lower demand for metals produced by the Company; • inventory liquidation by market participants; • speculative price decrease; • supply and demand imbalance in metal markets	To manage this risk, the Company: • continuously monitors and forecasts changes in key metals supply and demand; safeguards feedstock supplies for key customers through long-term contracts to supply metals in fixed volumes; • as a member of the global Nickel Institute and the International Platinum Group Metals Association, works with other nickel and PGM producers to maintain and increase the demand for these metals. Should the price risk materialise, the Company will consider cutting capital expenditures (revising the investment programme for projects that do not have a material impact on the Company's development strategy)

Market risk (the appeal of the Company's products going down)

Inability of the Company's products to successfully compete in the market may result in discounts to the market price and a decrease in the Company's income.

Key risk factors	Mitigants
• Higher market standards for product quality; • competition from producers of cheaper nickel; • car manufacturers switching out the main type of catalyst (palladium getting substituted with platinum in petrol car catalysts)	To manage this risk, the Company: • cooperates with other market players to monitor changes in the market's requirements to product quality; • makes sure its metal product sales are diversified across industries and geographies; • improves and diversifies the product range; • considers partnerships with key producers of batteries for electric cars; • enters into strategic partnerships with car makers built on guarantees of long-term palladium supplies

Tighter environmental requirements

Tightening environmental legislation may have a number of consequences for the Company:

- need to reissue environmental permits;
- need to upgrade and install additional waste treatment equipment;
- restrictions on the operations for up to 90 days.

Key risk factors	Mitigants
• Emphasis placed by domestic and international communities on environmental protection and sustainable development; • changes in environmental laws and regulations. For example, on 1 January 2019 the environmental permits framework was amended with requirements on an integrated environmental permit and a new system of standards that sets out technological limits	To manage this risk, the Company: • carries out an environmental action plan to reduce emissions and discharges, as well as to ensure timely waste management; • involves its employees in working groups of dedicated committees, regional ministries and government agencies; • takes part in joint projects with nature reserves located in the Company's regions of operation

FX risk

USD depreciation against RUB, including due to changes in the Russian economy and the policy of the Bank of Russia, may adversely affect the Company's financial performance, as most of its revenues are denominated in USD, while most of its expenses are denominated in RUB.

Key risk factors	Mitigants
• Increase in Russia's balance of payments, higher oil exchange prices and lower imports; • different country macroeconomics; • change in ratings; • lower volatility in financial markets of Russia and other developing countries	To manage this risk, the Company: • maintains a balanced debt portfolio where USD-denominated borrowings prevail to ensure a natural hedge; • implements regulations that limit fixing of prices in foreign currencies in expenditure contracts; • uses derivatives to mitigate the exposure by balancing cash flows between revenues (denominated in USD) and liabilities (denominated in other currencies)

Investment risk

Failure to meet timeline and technological indicator targets for the Company's major investment projects.

Key risk factors	Mitigants
• Uncertainty associated with the occurrence of ore bodies; • changing forecasts of ore composition and properties in the course of follow-up exploration; • obsolescence of technologies and equipment included in the design documents	To manage this risk, the Company: • updates the mining plan (a long-term production plan) based on the current status of its major investment projects developing the mineral resource base; • holds external audits of geological data; • improves the risk management process for investment projects; • develops mining and geological information systems; • as part of the project assurance process, conducts internal audits of large investment projects at each stage in their life cycle; • provides better incentives when it comes to the project work; • ensures that short-term, mid-term and long-term planning processes are in synch; • implements an integrated system for managing mining operations

Operational risks

Workplace injury risk

Failure to comply with the Company’s health and safety rules may result in threats to employee health and life, temporary suspension of operations, and property damage.

Key risk factors	Mitigants
• Unsatisfactory organisation of work execution; • disruptions in technological processes; • exposure to hazardous factors	Pursuant to the Occupational Health and Safety Policy approved by the Company's Board of Directors, the Company: • continuously monitors compliance with the health and safety requirements; • improves the working conditions for employees of the Company and its contractors deployed at the Company's production facilities, including by implementing new technologies and labour saving solutions, and enhancing industrial safety at production facilities; • provides staff with certified state-of-the-art personal protective equipment; • carries out preventive and therapeutic interventions to reduce the potential impact of hazardous and dangerous production factors; • regularly trains and instructs employees and assesses their health and safety performance, and conducts corporate workshops, including by deploying special simulator units; • enhances methodological support for health and safety functions, including through the development and implementation of corporate health and safety standards; • improves the risk assessment and management framework at the Group’s companies and production facilities as part of the Risk Control project; • analyses the competencies of line managers at the Company’s production facilities, develops health and safety training programmes and arranges relevant training sessions; • provides training for managers under the programme to determine root causes of accidents using best international practices (“Tree of Causes and Hazards”, 5-why, etc.); • provides information about the circumstances and causes of an accident to all employees of the Company, conducts ad hoc instruction sessions; • introduces frameworks to manage technical, technological, organisational and HR changes

Information security risks

Potential cyber crimes may result in an unauthorised transfer, modification or destruction of information assets, disruption or lower efficiency of IT services, business, technological and production processes of the Company.

Key risk factors	Mitigants
• Growing external threats; • unfair competition; • rapid development and automation of IT infrastructure, technological and business processes; • employee and third party wrongdoing	To manage this risk, the Company undertakes to: • comply with Russian laws and regulations with respect to personal data and trade secret protection, insider information, and critical information infrastructure; • implement MMC Norilsk Nickel's Information Security Policy; • categorise information assets and assess information security risks; • raise awareness in information security; • use technical means to ensure information security of assets and manage access to information assets; • ensure information security of the process control system; • monitor threats to information security and use technical protection means, including vulnerability • analysis, penetration testing, cryptographic protection of communication channels, controlled access to removable media, protection from confidential data leakages, mobile device management; • draft information security rules and regulations; • set up and certify the Information Security Management System

Technical and production risk

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

Key risk factors	Mitigants
• Harsh weather and climatic conditions, including low temperatures, storm winds, snow load; • unscheduled stoppages of key equipment; • release of explosive gases and flooding of mines; • collapse of buildings and structures; • infrastructure breakdowns	To manage this risk, the Company undertakes to: • properly and safely operate its assets in line with the requirements of the technical documentation, technical rules and regulations as prescribed by the local laws across the Company's footprint; • develop ranking criteria and criticality assessment for key industrial assets; • timely replace its fixed assets to achieve production safety targets; • implement automated systems to control equipment's process flows, use state-of-the-art engineering controls; • improve the maintenance and repair system; • train and educate its employees both locally, on site, and centrally, through its corporate training centres; • systematically identify and assess technical and production risks, implement a programme of organisational and technical actions to mitigate such risks; • develop the technical and production risk management system, including by engaging independent experts to assess the system efficiency and completeness of data; • develop and test business continuity plans which set out a sequence of actions to be taken by the Company's personnel and internal contractors in case of technical and production risks causing maximum damage and aimed at the earliest resumption of the Company's production operations; • engage, on an annual basis, independent surveyors to analyse the Company's exposure to disruptions in the production and logistics chain and assess related risks. In 2018, key technical and production risks were insured as part of the property and business interruption (downtime) insurance programme, with emphasis placed on best risk management practices in the mining and metals industry

Compliance risk

The risk of legal liability and/or legal sanctions, significant financial losses, suspension of production, revocation or suspension of a licence, loss of reputation, or other adverse effects arising from the Company's non-compliance with the applicable regulations, instructions, rules, standards or codes of conduct.

Key risk factors	Mitigants
• Changes in legislation and law enforcement practices;	To manage this risk, the Company: • makes sure the Company complies with the applicable laws; • defends the Company's interests during surveillance inspections or in administrative offence cases;

Key risk factors	Mitigants
• discrepancies in rules and regulations; • considerable powers and a high degree of discretion exercised by regulatory authorities; • potential violation of legal requirements by the Company's business units	• uses pre-trial and trial remedies to defend the Company's interests; • includes conditions defending the Company's interests in the contracts signed by the Company; • implements anti-corruption, anti-money laundering and counter-terrorist financing initiatives; • takes actions to prevent unauthorised use of insider information and market manipulation; • ensures timely and reliable information disclosures as required by the applicable Russian and international laws; • has the Company's employees attend a course on dealing with insider information. In 2018, the Company developed and approved the following documents: • Regulation on the Antitrust Compliance System of MMC Norilsk Nickel and similar documents; • Procedure for Interaction of the Legal Teams of MMC Norilsk Nickel and Russian Entities Comprising the Norilsk Nickel Group (for better identification and assessment of legal risks); • Procedure for Notifying Persons Discharging Managerial Responsibilities at MMC Norilsk Nickel, and for Disclosing Information on Transactions by Such Persons and Their Closely Associated Persons; • updated version of the Company's List of Insider Information based on the changed requirements of the Russian law

Power blackouts at production and social facilities in the Norilsk Industrial District (NID)

The failure of key equipment at the generating facilities and transmission networks may result in power, heat and water shortage at key production facilities of the Company's Polar Division and social facilities in the NID.

Key risk factors	Mitigants
• The isolation of the NID's power system from the national grid (Unified Energy System of Russia); • harsh weather and climatic conditions, including low temperatures, storm winds, snow load; • length of power, heat and gas transmission lines; • wear and tear of key production equipment and infrastructure	To manage this risk, the Company: • operates and maintains generating and mining assets as required by the technical documentation, industry rules, regulations, and laws; • timely constructs and launches transformer facilities, timely replaces transmission towers; • timely upgrades (replaces) TPP and HPP power units' equipment; • timely upgrades and renovates trunk gas and condensate pipelines and gas distribution networks

Social risk

Escalating tensions among the workforce due to the deterioration of social and economic conditions in the Company's regions of operation.

Key risk factors	Mitigants
• Headcount / staff composition optimisation projects; • rejection of the Company's values by some employees and third parties; • limited ability to perform annual wage indexation; • dissemination of false and inaccurate information about the Company's plans and operations among the Group's employees; • reallocation in spending on social programmes and charity	To manage this risk, the Company: • strictly abides by the collective bargaining agreements made between the Group's companies and employees. In 2018, MMC Norilsk Nickel signed a new collective bargaining agreement for 2018–2021; • actively interacts with regional and local authorities, and civil society institutions; • fulfils its social obligations under public-private partnership agreements; • implements the World of New Opportunities charity programme aimed at supporting and promoting regional public initiatives; • implements the Norilsk Upgrade project to introduce innovative solutions for sustainable social and economic development of the region; • implements monitoring across the Group's operations; • conducts opinion polls among Norilsk's communities to learn more about their living standards, employment, migration trends and general social sentiment, and identify major challenges; • implements social projects and programmes aimed at supporting employees and their families, as well as the Company's former employees. • engages in dialogues with stakeholders and conduct opinion polls while preparing public sustainability reports of the Group

Changes in legislation and law enforcement practices

Adverse consequences arising from the Company's non-compliance with the applicable regulations, instructions, rules, standards or codes of conduct.

Key risk factors	Mitigants
• Unstable legal environment (including lack of codified/uniform regulations in various areas); • frequent changes to legislative acts; • complicated geopolitical situation; • budget deficit (need to boost tax and other proceeds)	To manage this risk, the Company: • continuously monitors changes in legislation and law enforcement practices in all its business areas; • performs legal due diligence of draft regulations and amendments; • participates in discussions of draft regulations, both publicly and as part of the expert groups; • engages its employees in relevant professional and specialist training programmes, corporate workshops, and conferences; • cooperates with government agencies to ensure that new laws and regulations take into account the Company's interests.

Climate change risks

Lack of water resources

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

Key risk factors	Mitigants
• Abnormal natural phenomena (drought) caused by climate change	To manage this risk, the Company: • implements a closed water circuit to reduce water withdrawal; • carries out regular hydrological examinations to forecast water levels in rivers and water bodies. • cooperates with the Federal Service for Hydrometeorology and Environmental Monitoring (Rosgidromet) on setting up permanent hydrological and meteorological monitoring stations in order to improve the accuracy of water level forecasts in the Norilsk Municipality territory; • dredges the Norilskaya River and reduces energy consumption at the production facilities, should the risk materialise; • replaces equipment at hydropower plants to increase power output through improving the performance of hydroelectric units (implementation in 2012–2021)

Soil thawing

Loss of bearing capacity of pile foundations, deformation of buildings and structures leading to their destruction.

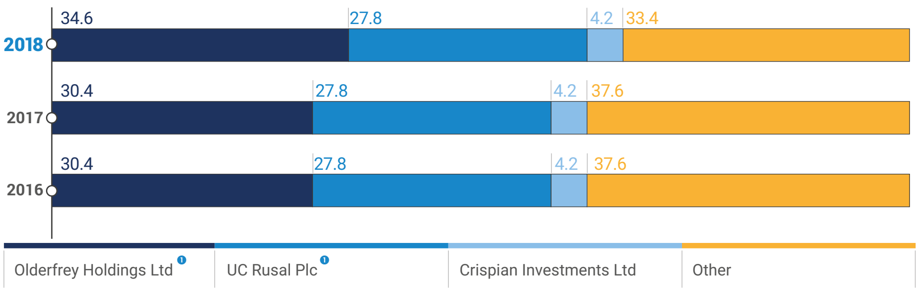
Key risk factors	Mitigants
• Climate change, average annual temperature increase (over the last 15–20 years); • increased depth of seasonal thawing	To manage this risk, the Company: • regularly monitors the condition of foundation beds for buildings and structures built on permafrost; • runs geodetic control of changes in buildings' positions; • monitors soil temperature at buildings' foundations; • monitors the facilities' compliance with operational requirements for crawlspaces; • develops recommendations and corrective action plans to ensure safe operating conditions for buildings and structures

8

Shareholder information

SECURITIES

Share capital structure, calendar year-end *(%)*



1 *Indirect owership via controlled entities.*

As at 31 December 2018, the authorised capital of MMC Norilsk Nickel comprised 158,245,476 ordinary shares with a par value of RUB 1 each. The Company placed no preferred shares.

As at 31 December 2018, there were 38,834 persons registered in the shareholder register – 38,806 individuals and 28 legal entities, including 3 nominal holders.

The reporting year saw minor changes in the shareholding structure. Olderfrey Holdings Ltd, the Company's major shareholder, built up its holding from 30.4% to 34.6% as at the year-end. The shares of UC Rusal Plc and Crispian Investments Ltd remained unchanged at 27.8% and 4.2%, respectively. Shares and American depositary receipts (ADRs) in free float owned by institutional and private investors from Europe, USA, Russia, Asia and elsewhere accounted for 33.4% of the issued capital.

The Company's ordinary shares are traded mostly on the Moscow Exchange, while ADRs are traded in the electronic trading system of OTC markets of the London Stock Exchange. As at 31 December 2018, the Company's capitalisation remained flat y-o-y at USD 29.7 bn.

As at 31 December 2018, there were

38,834 persons

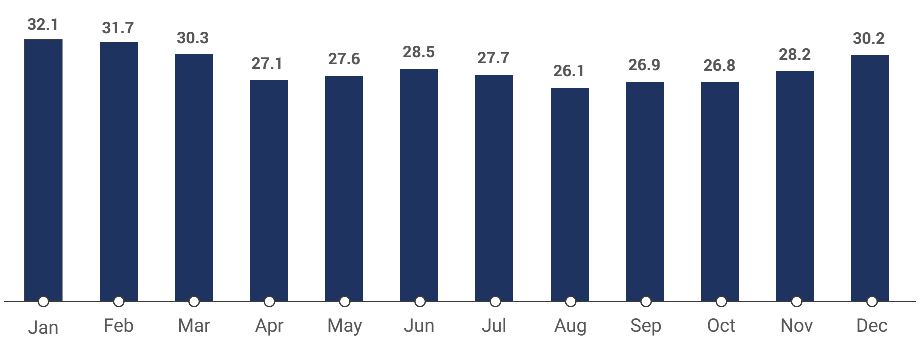
registered in the shareholder register

38,806 **individuals**

28 **legal entities,**

including 3 nominal holders

Average monthly capitalisation in 2018 *(USD bn)*



Source: *Bloomberg*

As at 31 December 2018, the Company's capitalisation amounted to

USD 29.7 bn

Shares

The Company's ordinary shares have been trading on the Russian market since 2001. They are included in the Moscow Exchange's Blue Chip Index (ticker symbol: GMKN) and rank among the most liquid instruments in the Russian securities market.

As at 31 December 2018, the Company's registrar was Independent Registrar Company. Following the reorganisation completed on 4 February 2019, Independent Registrar Company became part of the IRC – R.O.S.T. Group. As a legal successor of Independent Registrar Company, IRC – R.O.S.T. has been keeping Nornickel's shareholder register and providing a full scope of registrar services from 5 February 2019.

Holders of the Company's shares can participate in the General Meeting of Shareholders through e-voting using the Shareholder's Personal Account set up by the registrar. Besides, shareholders registered in the shareholder register can:
- view the number and price of their shares;
- check dividends accrued and paid;
- see the date of the upcoming General Meeting of Shareholders.

Access to the personal account can be obtained at a branch of Independent Registrar Company. Individual shareholders with a verified Public Services Portal account can connect to their personal account remotely. The procedure to connect to the Shareholder's Personal Account is available at the registrar's website.

>>> *For more details on the registrar, please see the Contacts section on*
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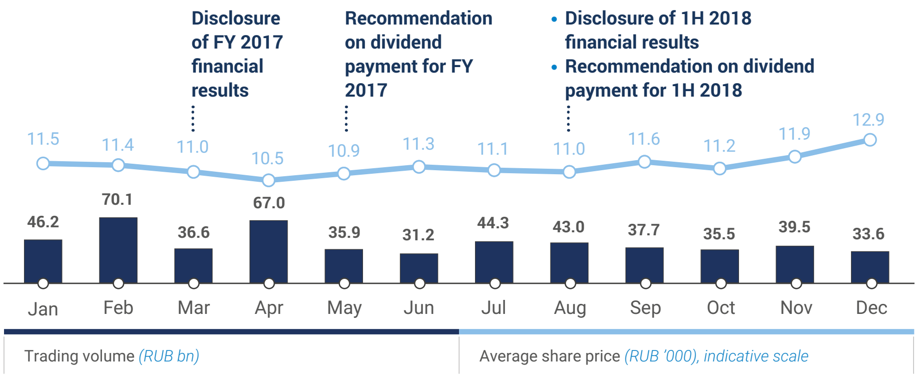
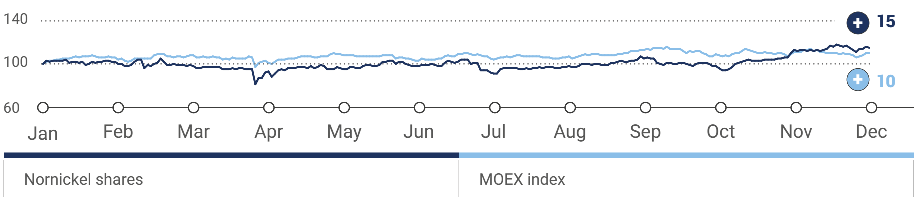
Average share price and trading volume on the Moscow Exchange in 2018



Share and ADR split, 31 December 2018 (%)

Share price and MOEX Russia Index in 2018 (%)



The procedure to connect to the Shareholder's Personal Account is available at the registrar's website.

Access to the personal account can be obtained at a branch of IRC – R.O.S.T. Individual shareholders with a verified Public Services Portal account can connect to their personal account remotely.

Share price and trading volume on the Moscow Exchange

Date	Share price, RUB			Volume, mln shares	Market cap at end of period, RUB bn
	Min	Max	End of period		
2014	5,150	10,805	8,080	75	1,279
2015	8,590	12,106	9,150	58	1,448
2016	8,050	11,070	10,122	48	1,602
2017	7,791	11,610	10,850	49	1,717
2018	**9,170**	**13,349**	**13,039**	**46**	**2,063**
Q1	10,695	11,874	10,760	13	1,703
Q2	9,170	11,644	11,039	13	1,804
Q3	10,255	12,073	11,388	11	1,802
Q4	10,650	13,349	13,039	9	2,063

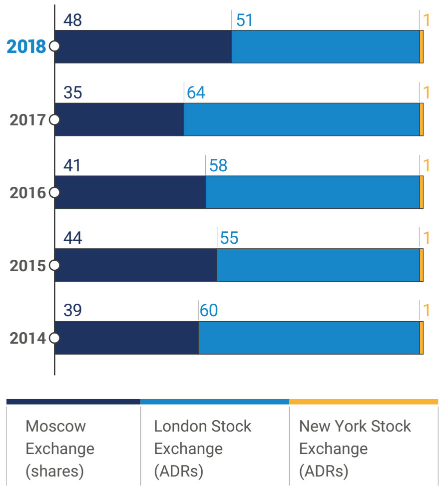
Source: *Company calculations based on the Moscow Exchange price*

ADRs

In 2001, MMC Norilsk Nickel issued ADRs for its shares. Currently, shares are convertible into ADRs at a ratio of 1:10. Depositary services for ADR transactions and custody services are provided by the Bank of New York Mellon and VTB Bank, respectively. ADRs are traded in the electronic trading system of OTC markets of the London Stock Exchange (ticker symbol: MNOD), on the US OTC market (ticker symbol: NILSY), and on other exchanges.

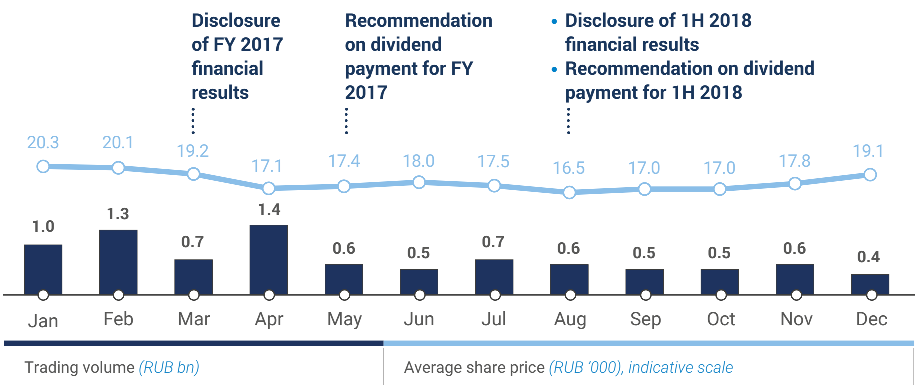
As at 31 December 2018, the total number of ADRs issued against MMC Norilsk Nickel's shares was 396,925,820, or 25.1% of the authorised capital. The number of ADRs traded on stock exchanges is not constant, as depositary receipt holders may convert their securities into shares and vice versa.

Share and ADR trading volume by exchange *(%)*



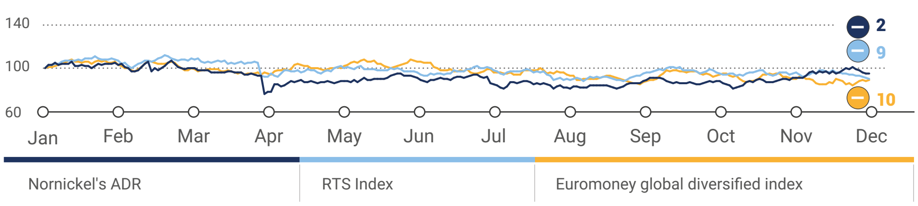
Source: *Bloomberg*

Average ADR price and trading volume on the London Stock Exchange in 2018



For more details on trading in the Company's share and ADRs, please see our website at https://www.nornickel.com/investors/tools/stockchart/

ADR price and global indices *(%)*



Source: *Bloomberg*

ADR price and trading volume on the OTC market of the London Stock Exchange

Date	ADR price, USD			Volume, mln ADRs	Market cap at end of period, USD mln
	Min	Max	End of period		
2014	14.2	21.5	14.2	1,163	22,503
2015	12.4	21.6	12.7	722	20,042
2016	10.4	18.2	16.8	647	26,569
2017	13.0	20.2	18.7	738	29,655
2018	**14.9**	**21.2**	**18.8**	**491**	**29,687**
Q1	18.5	21.2	18.5	153	29,339
Q2	14.9	18.8	18.0	150	28,405
Q3	15.9	18.7	17.3	102	27,376
Q4	16.1	19.9	18.8	86	29,687

Bonds

As at the end of 2018, the Company had four Eurobond issues outstanding for a total amount of USD 3.5 bn with maturities in 2020, 2022 and 2023, and one issue of rouble exchange-traded bonds for RUB 15 bn due in 2026. In April 2018, Nornickel redeemed the Eurobond issue for USD 750 mln.

In late November 2018, the Company registered its 30-year exchange-traded bond issuing programme on the Moscow Exchange. The programme provides for exchange-traded bond issues for up to RUB 300 bn or its equivalent in a foreign currency.

Eurobonds

	Eurobonds				
Instrument	**2018 (LPN) (redeemed)**	**2020 (LPN)**	**2022 (LPN)**	**2022 (LPN)**	**2023 (LPN)**
Issuer	MMC Finance D.A.C.	MMC Finance D.A.C.	MMC Finance D.A.C.	MMC Finance D.A.C.	MMC Finance D.A.C.
Issue size, USD mln	750	1,000	500	1,000	1,000
Coupon rate, %	4.375	5.550	3.849	6.625	4.100
Offering date	30 April 2013	28 October 2013	08 June 2017	14 October 2015	11 April 2017
Maturity date	30 April 2018	28 October 2020	08 April 2022	14 October 2022	11 April 2023
Coupon dates	30 October / 30 April	28 October / 28 April	08 October / 08 April	14 October / 14 April	11 October / 11 April
Issue rating	BBB– / Baa3 / BBB–	BBB– / Baa3[1] / BBB–	BBB– / – / BBB–	BBB– / Baa3[1] / BBB–	BBB– / – / BBB–

[1] *Rating revised upwards to Baa2 from 12 February 2019.*

Rouble bonds

Instrument	Exchange-traded bonds, BO-05
Issuer	MMC Norilsk Nickel
ISIN	RU000A0JW5C7
Offering date	19 February 2016
Maturity date	06 February 2026
Issue size	RUB 15 bn
Coupon rate	11.60%
Coupon dates	Each 182 days starting from the offering date

Credit ratings

On 29 January 2018, Moody's upgraded Nornickel's credit rating to Baa3 (investment grade) and raised its outlook from stable to positive following an increase in Russia's country ceilings for foreign currency debt to the same Baa3 level and a change in the outlook on Russia's rating from stable to positive.

On 30 November 2018, Nornickel received the highest creditworthiness rating according to the Russian national scale (ruAAA, outlook stable) from the RAEX (Expert RA) rating agency.

On 12 February 2019, Moody's upgraded Nornickel's credit rating to Baa2, outlook stable, following an increase in Russia's country ceilings for foreign currency debt to the same Baa2 level and an upgrade in Russia's sovereign credit rating to Baa3 (investment grade), outlook stable.

As at the year-end, the Company boasted investment grade credit ratings from the three leading international rating agencies and the Russian RAEX:

Fitch	BBB–	Stable
Standard & Poor's	BBB–	Stable
Moody's	Baa3	Positive
Expert RA	ruAAA	Stable

DIVIDEND POLICY

MMC Norilsk Nickel's Dividend Policy aims to balance the interests of the Company and its shareholders, enhance the Company's investment case and market capitalisation, and ensure respect of shareholder rights.

The Company has put in place the Regulations on the Dividend Policy to ensure transparency on how dividends are calculated and paid out.

When calculating dividends, MMC Norilsk Nickel factors in the cyclical nature of the metals market and the need to maintain a high level of creditworthiness. As a result, the amount of dividends may change depending on the Company's operating profit and leverage.

The decision to pay dividends is made by the General Meeting of Shareholders based on recommendations of the Board of Directors. The General Meeting of Shareholders determines the dividend amount and record date, which, as per the Russian law, shall be set not earlier than 10 days before and not later than 20 days after the General Meeting of Shareholders.

Dividends to a nominee shareholder listed on the shareholder register shall be paid within 10 business days, while dividends to other persons listed on the shareholder register shall be paid within 25 business days after the record date.

Dividend report

Individuals/entities whose rights to shares are recorded in the shareholder register are paid dividends by Independent Registrar Company upon Nornickel's instruction.

Individuals/entities whose rights to shares are recorded by a nominee shareholder are paid dividends via their nominee shareholder.

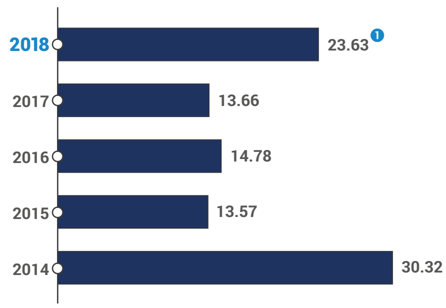
In accordance with Clause 9 of Article 42 of Federal Law No. 208-FZ On Joint-Stock Companies dated 26 December 1995, any person who has not received the declared dividends due to the fact that their accurate address or banking details were not available to the company or the registrar as required, or due to any other delays on the part of the creditor, may request payment of such dividends (unpaid dividends) during the period of three years from the date of the resolution to pay the same.

On 26 April 2019, the Company's Board of Directors recommended that the General Meeting of Shareholders approve dividends for FY 2018 in the amount of

USD 792.52

(USD 12.25)

Declared dividends per share *(USD)*



[1] Based on the total amount of dividends for 2018 recommended by the Board of Directors for approval by the General Meeting of hareholders. Declared dividends based on the Bank of Russia's exchange rate as at the date of the Board of Directors' meeting.

Dividend history[2]

Period	Declared dividends		Dividend per share/ADR[3]	
	RUB mln	USD mln	RUB	USD
Total for 2018	**248,214**	**3,739**	**1,569**	**23.63**
FY2018[4]	125,413	1,939	793	12.25
6M 2018	122,802	1,800	776	11.37
Total for 2017	**131,689**	**2,162**	**832**	**13.66**
FY2017	96,210	1,562	608	9.87
6M 2017	35,479	600	224	3.79
Total for 2016	**140,894**	**2,339**	**890**	**14.78**
FY2016	70,593	1,239	446	7.83
9M 2016	70,301	1,100	444	6.95
Total for 2015	**135,642**	**2,148**	**857**	**13.57**
FY2015	36,419	548	230	3.46
9M 2015	50,947	800	322	5.06
6M 2015	48,276	800	305	5.06
Total for 2014	**226,668**	**4,798**	**1,432**	**30.32**
FY2014	106,031	2,018	670	12.75
9M 2014	120,637	2,780	762	17.57

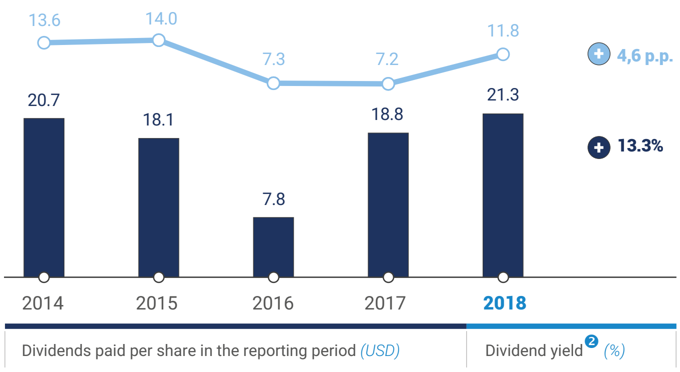
[2] For dividend history covering earlier periods, please see our website.
[3] Calculated at the Bank of Russia's exchange rate as at the date of the Board of Directors' meeting.
[4] On 26 April 2019, the Company's Board of Directors recommended that the General Meeting of Shareholders approve dividends for 2018.

Over the last five years, Nornickel has been developing its Tier 1 assets and providing a consistently high dividend yield to its shareholders. We expect the trend to continue.

Dividends paid

Year[1]	Dividend amount RUB mln	Dividend amount USD mln
2018	**218,873**	**3,369**
2017	176,246	2,971
2016	86,712	1,232
2015	154,227	2,859
2014	159,914	3,281

Dividend yield



[1] *Dividends paid during the periods, excluding payouts on treasury stock.*
[2] *Dividend yield for the periods calculated based on the amount of dividends for the calendar year recommended by the Board of Directors and on the average ADR price according to Bloomberg.*

Taxation

Income from securities is taxable pursuant to the applicable tax laws of the Russian Federation[3].

Chapter 23 (Personal Income Tax) and Chapter 25 (Corporate Income Tax) of the Russian Tax Code.

Reduced tax rates or exemptions may apply to individuals and foreign entities who are not tax residents of Russia pursuant to international double tax treaties.

Starting from 1 January 2017, in order to apply for tax benefits under international double tax treaties, foreign organisations must confirm their permanent residence in a state which has a double tax treaty signed with Russia, and also provide the income paying tax agent with a document confirming the right of the organisation to receive such income (Clause 1, Article 312 of the Russian Tax Code).

Should the organisation fail to provide such confirmation by the date of the payout, the Russian tax agent shall withhold the tax at the standard rates stipulated by Clauses 2 and 3, Article 284 of the Russian Tax Code.

Tax treatment of income from securities *(%)*

Item	Income from securities transactions	Interest income on securities	Dividend income on securities
Individuals			
Residents	13[4]	13	13
Non-residents	30[5]	30	15
Legal entities			
Russian companies	20[4]	20	13[6]
Non-resident companies	20[7]	20	15

[3] *Chapter 23 (Personal Income Tax) and Chapter 25 (Corporate Income Tax) of the Russian Tax Code.*
[4] *Or 0%, if shares (interests) of Russian entities acquired on or after 1 January 2011 are sold, provided that as at the date of their sale the shares (interests) have been owned for over five years and subject to (in respect of shares) one of the conditions stipulated by Clause 2, Article 284.2 of the Russian Tax Code. The condition of being acquired on or after 1 January 2011 does not apply to shares (interests) sold on or after 27 November 2018.*
[5] *If shares or other securities are sold in Russia.*
[6] *Or 0%, if as at the date of the dividend payout resolution a Russian entity has been owning an interest of 50% (and more) in the authorised capital of the entity paying dividends, for 365 days (and more).*
[7] *Provided the income is classified as income of a foreign entity from sources in the Russian Federation in accordance with Clause 1, Article 309 of the Russian Tax Code.*

Dividend tax formula[8]

AT = P × TR × (D1 – D2)

where:

AT — amount of tax to be withheld from the income of the recipient of dividends;

P — proportion of the dividend amount payable to one recipient to the total dividend amount to be distributed;

TR — tax rate for Russian entities (0% or 13%);

D1 — dividend amount to be distributed among all recipients;

D2 — dividend amount received[9] by the entity paying dividends, provided that previously these amounts were not included in the taxable income.

SHAREHOLDER RIGHTS

All shareholders, including minority and institutional shareholders, enjoy equal rights and treatment in their relations with the Company, in particular the rights to:

- participate in General Meetings of Shareholders and vote on all items within its competence, unless otherwise provided for by Federal Law No. 208-FZ On Joint Stock Companies dated 26 December 1995;
- receive dividends should the General Meeting of Shareholders pass the relevant resolution;
- receive part of the Company's property in case of its liquidation;
- have access to information about the Company's operations.

The Company has the Regulations on the General Meeting of Shareholders in place that set forth procedures to convene, prepare and conduct its general meetings.

The Annual General Meeting of Shareholders is held on an annual basis not earlier than three months before and not later than six months after the end of the financial year. General meetings other than Annual General Meetings of Shareholders are defined as Extraordinary General Meetings of Shareholders and are convened as per resolution of the Board of Directors at their discretion or at the request of the Audit Commission, the Company's auditor, or shareholders who own at least 10% of the Company's voting shares as at the date of the request.

The notice of a General Meeting of Shareholders is published in the Rossiyskaya Gazeta and Taimyr newspapers and posted on the Company's website not later than 30 days prior to the date of the general meeting. If a general meeting is conducted in the form of absentee voting (by ballot), the notice is given in the above mentioned newspapers at least 30 days prior to the deadline set for the collection of ballot sheets.

For more details on the Regulations on the General Meeting of Shareholders, please see the Investor Relations section on the Company's corporate website at [https://www.nornickel.com/files/en/corporate_documents/constituent_documents/Regulations-AGM-2014(1).pdf]

Holders of MMC Norilsk Nickel's shares who are registered in the shareholder register receive a ballot from the Company and are entitled to exercise their voting right by sending the ballot sheet to the Company or by attending the General Meeting of Shareholders (in person or by proxy).

Shareholders of MMC Norilsk Nickel who own the Company's shares via nominal holders receive the voting ballot from the nominal holder. They are entitled to vote at the meeting in the same way as the holders registered in the shareholder register (see the paragraph above) or instruct the nominal holder to do the same as prescribed by the Russian

8 *The formula is not applicable to dividends paid to foreign entities and/or individuals who are not tax residents of Russia.*

9 *Excluding the dividend amount eligible for a zero tax rate pursuant to Subclause 1, Clause 3, Article 284 of the Russian Tax Code.*

securities law. The nominal holders duly instructed by their clients communicate the voting instructions to the registrar. The receipt of instructions by the registrar shall be equivalent to ballot voting.

Should the Board of Directors make arrangements for e-voting at the general meeting, the shareholders (individuals and legal entities registered in the shareholder register and clients of nominal holders) can participate in the process using the Shareholder's Personal Account. Access to the personal account can be obtained at a registrar's branch. Individual shareholders with a verified Public Services Portal account can connect to their personal account remotely.

ADR holders do not receive ballot sheets directly from the Company. According to the depository agreement, the Company notifies the depository, which as soon as possible, and provided it is not prohibited by the Russian law, notifies ADR holders about the general meeting and encloses voting materials and a document describing the voting procedure for ADR holders. To exercise their voting rights, ADR holders instruct the depository accordingly.

A General Meeting of Shareholders shall be considered properly convened (having a quorum) if the shareholders who own in aggregate more than 50% of the votes granted by the voting shares of the Company are present at the meeting.

Voting at the General Meeting of Shareholders takes place in accordance with the "one share, one vote" rule, unless otherwise provided for in the Federal Law. Members of the Company's Board of Directors are elected through cumulative voting, i.e. the number of votes held by each shareholder is multiplied by the number of persons to be elected to the Board of Directors.

Shareholders can exercise other rights as prescribed by the federal laws On Joint-Stock Companies and On the Securities Market, and other regulations of the Russian Federation.

>>> *For more details on the registrar, please see the Contacts section on*
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The procedure to connect to the Shareholder's Personal Account is available at the registrar's website at http://rrost.ru/ru/shareholder/online-services/new_lka/

TRANSPARENCY

MMC Norilsk Nickel has in place Information Policy Regulations approved by the Company's Board of Directors. The regulations primarily seek to provide stakeholders with full and reliable information on the Company's operations, and collect feedback.

In line with its key disclosure principles, the Company strives to make information equally available to all stakeholders on a regular and timely basis. We also work to ensure that the information is reliable and complete while maintaining a reasonable balance between transparent operations and business considerations. The Company publishes updates in the media and on its corporate website at https://www.nornickel.com/.

The Company's disclosure procedures comply with the Russian law, rules of the Moscow Exchange, and applicable foreign/international legislation.

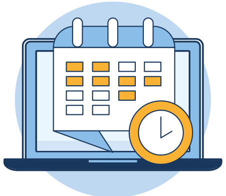
MMC Norilsk Nickel also seeks to improve transparency by releasing additional information in excess of statutory

>350 meetings

with institutional investors held in 2018

20 meetings

with investors centred around environmental protection, social responsibility and corporate governance



For details on the events, please see the IR Calendar on the Company's website at https://www.nornickel.com/investors/events/

Information on ESG is available on the Company's website in the ESG Strategy section: https://www.nornickel.com/investors/esg/

The Company engages in **an ongoing dialogue** with both existing shareholders and potential investors

requirements. The Company uses the following channels to disclose information to shareholders and investors: press releases, presentations, annual and sustainability reports, corporate action notices, news feeds, and RNS. The Company makes a point of parallel disclosure in domestic and foreign markets.

Nornickel's quarterly disclosures include operating indicators, the issuer's quarterly reports, RAS financial (accounting) statements, and affiliate lists. IFRS statements are released on a semi-annual basis. IFRS disclosures are followed by conference calls and webcasts of the Company's senior management with analysts and investors to provide the market with the required information and comments. In addition, to enhance transparency, the Company makes an extensive use of all communication tools available, including participation of senior managers in conferences, speeches, presentations, investor days, and production site visits for investors.

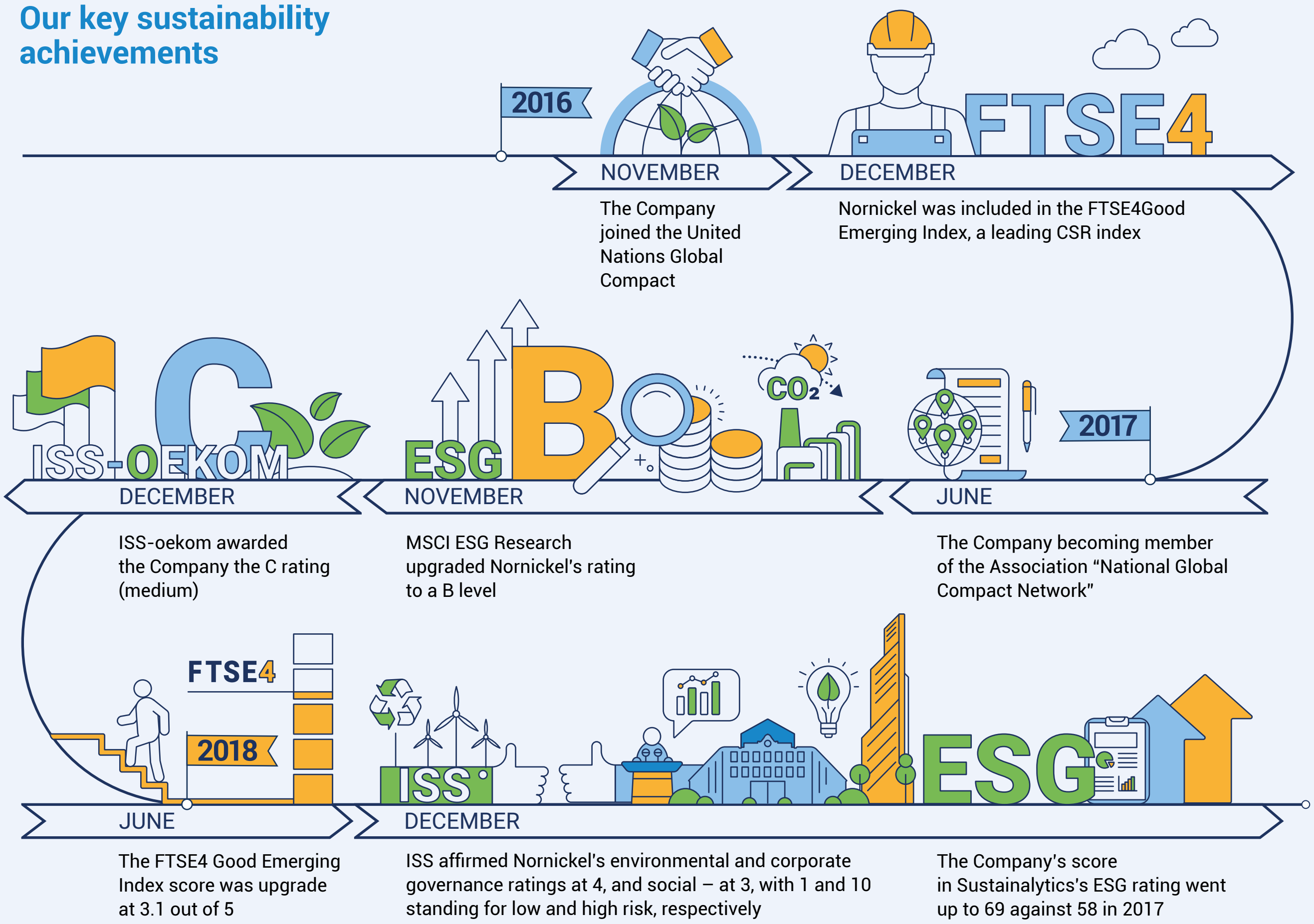
The Company engages in an ongoing dialogue with both existing shareholders and potential investors. During the past year, the Company maintained close interaction with the investor community and shareholders, organising over 350 meetings with institutional investors and an Investor Day in London followed by a road show in Europe and the US.

In recent years, the sustainable development agenda has been gaining ground, with an increasing number of investors and asset managers opting for responsible investment. In 2018, the Company held around 20 target meetings with investors centred around environmental protection, social responsibility and corporate governance (ESG).

To improve interaction with investors and ESG rating agencies, Nornickel set up a dedicated section on its website that features all the required information.

Also, it developed an ESG databook disclosing sustainability indicators starting from 2010.

Our key sustainability achievements



Stakeholder engagement

Stakeholders	Key interests of stakeholders	Interaction channels	Key interaction events in 2018
Shareholders and investors	• Capitalisation growth • Dividend payments • Transparency of information	• One-on-one meetings • Conference calls • Phone calls • Emails • Site visits	• Investor Day in London • Conference calls and a road show following the IFRS disclosure
Investment banks (brokers)	• Transparency of information • Stability	• Meetings • Conference calls • Phone calls • Emails	• Investor Day in London • Conference calls and a road show following the IFRS disclosure

AWARDS FOR PUBLIC DISCLOSURE

2017 Annual Report

Moscow Exchange competition

Interactive version of the 2017 Annual Report

Expert RA competition | LACP Vision Awards | ARC Awards | ReportWatch

Norilsk Nickel Group's 2017 Sustainability Report

Moscow Exchange competition | MarCom Awards | Deloitte — Green Frog Award | Expert RA competition | LACP Vision Awards

Corporate website of Nornickel

Corporate & Financial Awards 2018 | IR Society (shortlist)

The Company's Annual report is a regular winner of prestigious domestic and international awards and accolades. For example, Nornickel's 2017 report received the highest recognition from the Moscow Exchange for the best strategy presentation and investment case. The interactive Annual report's design was named best at the Expert RA competition, won three LACP and two ARC awards, and ranked among the Top 15 global reports in ReportWatch's Best Practice Report category, while also scoring first in the Business Model – Value – Strategy and Infographics – Data – Ratios categories.

Norilsk Nickel Group's 2017 Sustainability Report also reaped a number of awards. At the XXI Annual Report Competition held by the Moscow Exchange and RCB Group in early December 2018, Nornickel received the Best CSR and Sustainability Report award. With over 130 companies participating, the contest is one of Russia's topmost events in the fields of corporate governance and investor relations.

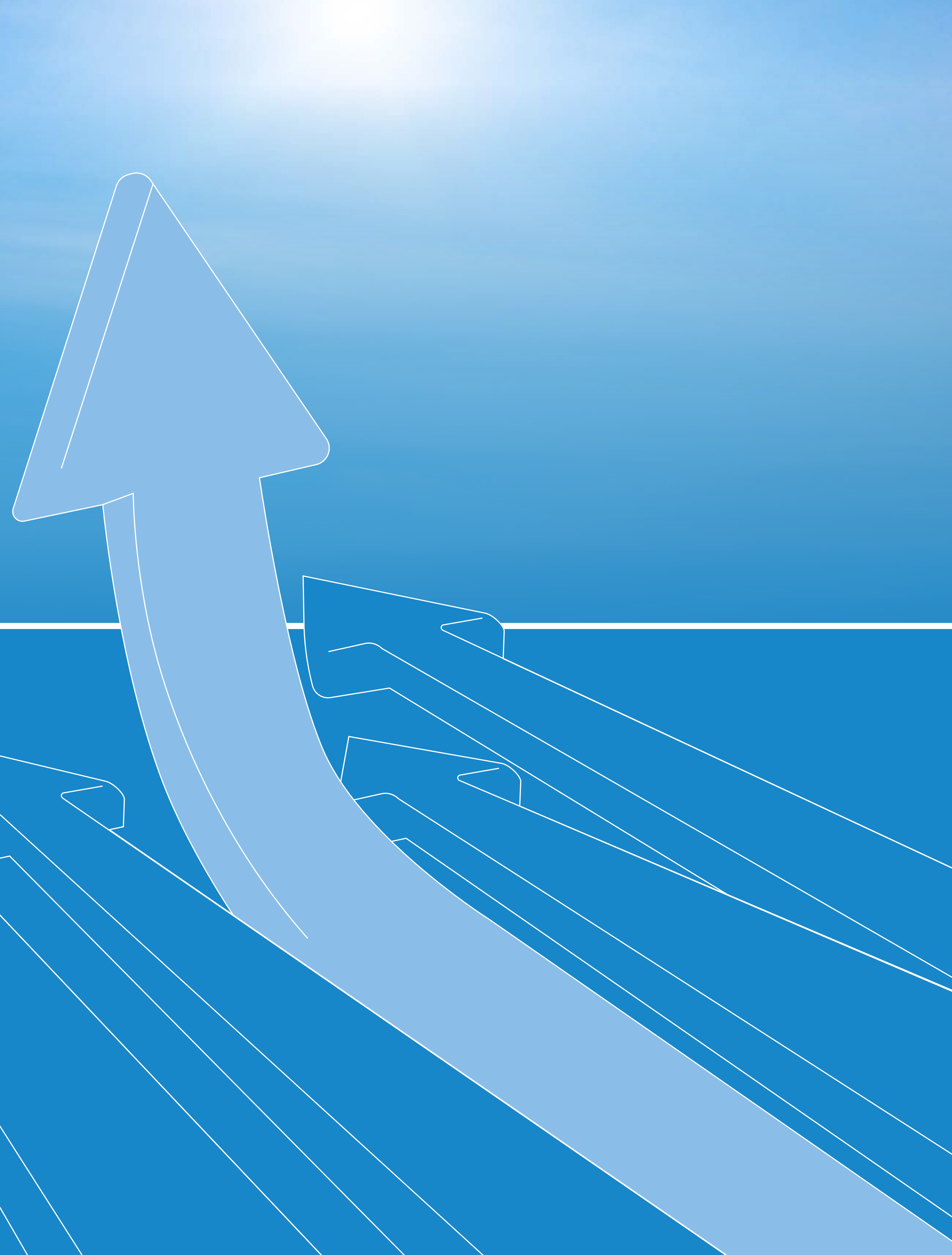
In October 2018, the prestigious MarCom Awards competition honoured the Company's Sustainability Report with platinum statuettes in two categories – Best Report and Best Design.

The MarCom Awards recognises outstanding achievements in marketing and communications. On top of that, the Report received Deloitte's Green Frog Award in November 2018. RAEX (Expert RA), a reputable rating agency, granted Nornickel a diploma for the best design of the Sustainability Report. The Company also took home platinum in the LACP Vision Awards competition.

Nornickel won the Best Corporate Website award as part of the 2018 Corporate & Financial Awards and got short-listed for effective ESG integration and use of digital communications in the IR Society awards.

9

Consolidated financial statements



CONSOLIDATED FINANCIAL STATEMENTS

for the year ended 31 December 2018

Content

Statement of management's responsibilities for the preparation and approval of the consolidated financial statements

for the year ended 31 december 2018

The following statement, which should be read in conjunction with the auditors' responsibility stated in the auditors' report set out on pages 224–227, is made with a view to distinguishing the respective responsibilities of management and those of the auditors in relation to the consolidated financial statements of Public Joint Stock Company "Mining and Metallurgical Company Norilsk Nickel" and its subsidiaries (the "Group").

Management of the Group is responsible for the preparation of the consolidated financial statements that present fairly in all material aspects the consolidated financial position of the Group as at 31 December 2018 and consolidated statements of income, comprehensive income, cash flows and changes in equity for the year then ended, in accordance with International Financial Reporting Standards ("IFRS").

In preparing the consolidated financial statements, management is responsible for:

- selecting suitable accounting principles and applying them consistently;
- making judgements and estimates that are reasonable and prudent;
- stating whether IFRS have been followed, subject to any material departures disclosed and explained in the consolidated financial statements; and
- preparing the consolidated financial statements on a going concern basis, unless it is inappropriate to presume that the Group will continue in business for the foreseeable future.

Management, within its competencies, is also responsible for:

- designing, implementing and maintaining an effective system of internal controls throughout the Group;
- maintaining statutory accounting records in compliance with local legislation and accounting standards in the respective jurisdictions in which the Group operates;
- taking steps to safeguard the assets of the Group; and
- detecting and preventing fraud and other irregularities.

The consolidated financial statements for the year ended 31 December 2018 were approved by:

President
V.O. Potanin

Senior Vice President –
Chief Financial Officer
S.G. Malyshev

Moscow, Russia
26 February 2019

KPMG

Independent Auditors' Report

TO THE SHAREHOLDERS AND BOARD OF DIRECTORS OF PJSC "MINING AND METALLURGICAL COMPANY NORILSK NICKEL"

Opinion

We have audited the consolidated financial statements of PJSC "Mining and Metallurgical Company Norilsk Nickel" (the "Company") and its subsidiaries (the "Group"), which comprise the consolidated statement of financial position as at 31 December 2018, the consolidated income statement, the consolidated statements of comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at 31 December 2018, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the independence requirements that are relevant to our audit of the consolidated financial statements in the Russian Federation and with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with the requirements in the Russian Federation and the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Audited entity: PJSC "Mining and Metallurgical Company Norilsk Nickel"

Registration No. in the Unified State Register of Legal Entities 1028400000298

Dudinka, Krasnoyarsk region, Russian Federation

Independent auditor: JSC "KPMG", a company incorporated under the Laws of the Russian Federation, a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity

Registration No. in the Unified State Register of Legal Entities 1027700125628

Member of the Self-regulated organization of auditors "Russian Union of auditors" (Association). The Principal Registration Number of the Entry in the Register of Auditors and Audit Organisations: No. 1603053203.

KPMG

Impairment of property, plant and equipment of Nkomati Nickel Mine

Please refer to the Note 14 in the consolidated financial statements.

The key audit matter	How the matter was addressed in our audit
As at 31 December 2018 the Group identified impairment indicators for property, plant and equipment of its joint operation Nkomati Nickel Mine (hereinafter “Nkomati”) and performed an impairment test. As a result the Group recognized an impairment loss for the excess of the carrying value over value in use. Given significant judgement involved in preparation of discounted cash flow model of Nkomati, we consider the determination of recoverable amount to be a key audit matter.	Our audit procedures included testing significant assumptions (metal prices and forecasts of exchange rate of South African rand to US dollar, as well as discount rate) and evaluating methodology used by the Group. We involved KPMG valuation specialists to assist us in evaluating the methodology used by the Group and analysis of key assumptions in terms of their reasonableness and relevance, taking into consideration current macroeconomic conditions, historic performance results and future plans. We compared: • forecast metal prices, inflation rates in South Africa and the USA with publicly available market information; • discount rate calculation to our own assessment of key components of discount rate calculation. In addition, we analyzed forecast cash flows, by comparing production volumes to reserves estimates and historical operating performance of Nkomati. We also assessed appropriateness and completeness of the disclosures in the financial statements in relation to significant assumptions used in determination of recoverable amount.

Other Information

Management is responsible for the other information. The other information comprises the Financial Overview (MD&A) (but does not include the consolidated financial statements and our auditors’ report thereon), which we obtained prior to the date of this auditors’ report, and the information included in other sections of Annual Report for 2018, which is expected to be made available to us after that date.

Our opinion on the consolidated financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information that we have obtained prior to the date of this auditors’ report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditors' report is:

Natalia Velichko
JSC "KPMG"

АКЦИОНЕРНОЕ ОБЩЕСТВО ОГРН 1027700125628 КПМГ KPMG * МОСКВА *

Moscow, Russia
26 February 2019

Consolidated financial statements
for the year ended 31 December 2018

CONSOLIDATED INCOME STATEMENT
for the year ended 31 december 2018

US Dollars million

	Notes	For the year ended 31 December 2018	For the year ended 31 December 2017
REVENUE			
Metal sales	6	10,962	8,415
Other sales		708	731
Total revenue		**11,670**	**9,146**
Cost of metal sales	7	(4,536)	(3,968)
Cost of other sales		(622)	(632)
Gross profit		**6,512**	**4,546**
General and administrative expenses	8	(859)	(759)
Selling and distribution expenses	9	(92)	(75)
Impairment of non-financial assets	14	(50)	(227)
Other operating income and expenses	10	(95)	(362)
Operating profit		**5,416**	**3,123**
Foreign exchange (loss)/gain, net		(1,029)	159
Finance costs	11	(580)	(535)
Gain from disposal of subsidiaries	20	–	20
Income from investments	12	95	77
Profit before tax		**3,902**	**2,844**
Income tax expense	13	(843)	(721)
Profit for the year		**3,059**	**2,123**
Attributable to:			
Shareholders of the parent company		3,085	2,129
Non-controlling interests		(26)	(6)
		3,059	**2,123**
EARNINGS PER SHARE			
Basic and diluted earnings per share attributable to shareholders of the parent company (US Dollars per share)	21	19.5	13.5

The accompanying notes on pages 235–269 form an integral part of the consolidated financial statements

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME for the year ended 31 december 2018

US Dollars million

	For the year ended 31 December 2018	For the year ended 31 December 2017
Profit for the year	**3,059**	**2,123**
Other comprehensive (loss)/income		
Items to be reclassified to profit or loss in subsequent periods:		
Effect of translation of foreign operations	(2)	15
Other comprehensive (loss)/income to be reclassified to profit or loss in subsequent periods, net	**(2)**	**15**
Items not to be reclassified to profit or loss in subsequent periods:		
Effect of translation to presentation currency	(905)	277
Other comprehensive (loss)/income not to be reclassified to profit or loss in subsequent periods, net	**(905)**	**277**
Other comprehensive (loss)/income for the year, net of tax	**(907)**	**292**
Total comprehensive income for the year, net of tax	**2,152**	**2,415**
Attributable to:		
Shareholders of the parent company	2,232	2,417
Non-controlling interests	(80)	(2)
	2,152	**2,415**

CONSOLIDATED STATEMENT OF FINANCIAL POSITION at 31 december 2018

US Dollars million

	Notes	At 31 December 2018	At 31 December 2017
ASSETS			
Non-current assets			
Property, plant and equipment	14	9,934	10,960
Intangible assets		163	148
Other financial assets	15	141	192
Deferred tax assets	13	73	77
Other non-current assets	17	386	732
		10,697	**12,109**
Current assets			
Inventories	17	2,280	2,689
Trade and other receivables	18	204	327
Advances paid and prepaid expenses		75	71
Other financial assets	15	147	99
Income tax receivable		92	82
Other taxes receivable	16	271	296
Cash and cash equivalents	19	1,388	852
Other current assets		97	110
		4,554	**4,526**
TOTAL ASSETS		**15,251**	**16,635**
EQUITY AND LIABILITIES			
Capital and reserves			
Share capital	21	6	6
Share premium		1,254	1,254
Translation reserve		(5,343)	(4,490)
Retained earnings	27	7,306	7,557

The accompanying notes on pages 235–269 form an integral part of the consolidated financial statements

	Notes	At 31 December 2018	At 31 December 2017
Equity attributable to shareholders of the parent company		**3,223**	**4,327**
Non-controlling interests	22	250	331
		3,473	**4,658**
Non-current liabilities			
Loans and borrowings	23	8,224	8,236
Provisions	25	365	464
Trade and other long-term payables		200	402
Derivative financial instruments		61	–
Deferred tax liabilities	13	385	407
Other long-term liabilities		185	116
		9,420	**9,625**
Current liabilities			
Loans and borrowings	23	215	817
Trade and other payables	26	1,551	783
Dividends payable	27	6	6
Employee benefit obligations	24	307	377
Provisions	25	77	189
Derivative financial instruments		5	24
Income tax payable		35	9
Other taxes payable	16	162	147
		2,358	**2,352**
TOTAL LIABILITIES		**11,778**	**11,977**
TOTAL EQUITY AND LIABILITIES		**15,251**	**16,635**

The accompanying notes on pages 235–269 form an integral part of the consolidated financial statements

CONSOLIDATED STATEMENT OF CASH FLOWS for the year ended 31 december 2018

US Dollars million

	For the year ended 31 December 2018	For the year ended 31 December 2017
OPERATING ACTIVITIES		
Profit before tax	**3,902**	**2,844**
Adjustments for:		
Depreciation and amortisation	765	645
Impairment of non-financial assets	50	227
Loss on disposal of property, plant and equipment	1	9
Gain from disposal of subsidiaries	–	(20)
Change in provisions and allowances	61	41
Finance costs and income from investments, net	485	458
Foreign exchange loss/(gain), net	1,029	(159)
Other	46	58
	6,339	**4,103**
Movements in working capital:		
Inventories	297	(346)
Trade and other receivables	102	(174)
Advances paid and prepaid expenses	(5)	10
Other taxes receivable	(15)	(5)
Employee benefit obligations	11	9
Trade and other payables	676	(1,118)
Provisions	(28)	(48)
Other taxes payable	(97)	2
Cash generated from operations	**7,280**	**2,433**
Income tax paid	(787)	(670)
Net cash generated from operating activities	**6,493**	**1,763**

The accompanying notes on pages 235–269 form an integral part of the consolidated financial statements

	For the year ended 31 December 2018	For the year ended 31 December 2017
INVESTING ACTIVITIES		
Purchase of property, plant and equipment	(1,480)	(1,940)
Purchase of intangible assets	(73)	(62)
Purchase of other non-current assets	(104)	(88)
Loans issued	(7)	(18)
Proceeds from repayment of loans issued	13	48
Net change in deposits placed	5	(80)
Proceeds from sale of other financial assets	–	9
Proceeds from disposal of property, plant and equipment	3	29
Proceeds from disposal of subsidiaries	–	99
Interest and other investment income received	81	67
Net cash used in investing activities	**(1,562)**	**(1,936)**
FINANCING ACTIVITIES		
Proceeds from loans and borrowings	2,173	4,233
Repayments of loans and borrowings	(2,547)	(3,140)
Financial lease payments	(9)	(10)
Dividends paid (note 27)	(3,369)	(2,971)
Dividends paid to non-controlling interest	(1)	(1)
Interest paid	(551)	(642)
Proceeds from sale of a non-controlling interest in a subsidiary (note 22)	–	294
Net cash used in financing activities	**(4,304)**	**(2,237)**
Net increase/(decrease) in cash and cash equivalents	**627**	**(2,410)**
Cash and cash equivalents at the beginning of the year	**852**	**3,325**
Effects of foreign exchange differences on balances of cash and cash equivalents	(91)	(63)
Cash and cash equivalents at the end of the year	**1,388**	**852**

The accompanying notes on pages 235–269 form an integral part of the consolidated financial statements

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY for the year ended 31 december 2018

US Dollars million

		Equity attributable to shareholders of the parent company							
	Notes	Share capital	Share premium	Treasury shares	Translation reserve	Retained earnings	Total	Non-controlling interests	Total
Balance at 1 January 2017		**6**	**1,254**	**–**	**(4,778)**	**7,340**	**3,822**	**74**	**3,896**
Profit/(loss) for the year		–	–	–	–	2,129	2,129	(6)	2,123
Other comprehensive income		–	–	–	288	–	288	4	292
Total comprehensive income/ (loss) for the year		**–**	**–**	**–**	**288**	**2,129**	**2,417**	**(2)**	**2,415**
Dividends	27	–	–	–	–	(1,846)	(1,846)	(1)	(1,847)
Increase in non-controlling interest due to decrease in ownership of a subsidiary	22	–	–	–	–	35	35	259	294
Other effects related to transactions with non-controlling interest owners		–	–	–	–	(100)	(100)	–	(100)
Decrease in non-controlling interest due to increase in ownership of a subsidiary		–	–	–	–	(1)	(1)	1	–
Balance at 31 December 2017		**6**	**1,254**	**–**	**(4,490)**	**7,557**	**4,327**	**331**	**4,658**
Profit/(loss) for the year		–	–	–	–	3,085	3,085	(26)	3,059
Other comprehensive loss		–	–	–	(853)	–	(853)	(54)	(907)
Total comprehensive income/ (loss) for the year		**–**	**–**	**–**	**(853)**	**3,085**	**2,232**	**(80)**	**2,152**
Dividends	27	–	–	–	–	(3,336)	(3,336)	(1)	(3,337)
Balance at 31 December 2018		**6**	**1,254**	**–**	**(5,343)**	**7,306**	**3,223**	**250**	**3,473**

The accompanying notes on pages 235–269 form an integral part of the consolidated financial statements

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS for the year ended 31 december 2018

US Dollars million

1. GENERAL INFORMATION

Organisation and principal business activities

Public Joint-Stock Company "Mining and Metallurgical Company Norilsk Nickel" (the "Company" or "MMC Norilsk Nickel") was incorporated in the Russian Federation on 4 July 1997. The principal activities of the Company and its subsidiaries (the "Group") are exploration, extraction, refining of ore and nonmetallic minerals and sale of base and precious metals produced from ore. Further details regarding the nature of the business and structure of the Group are presented in note 33.

Major production facilities of the Group are located in Taimyr and Kola Peninsulas and the Zabaikalsky region of the Russian Federation, and in Finland.

BASIS OF PREPARATION

Statement of compliance

The consolidated financial statements of the Group have been prepared in accordance with International Financial Reporting Standards ("IFRS").

The entities of the Group maintain their accounting records in accordance with the laws, accounting and reporting regulations of the jurisdictions in which they are incorporated and registered. Accounting principles in certain jurisdictions may differ from those generally accepted under IFRS. Financial statements of such entities have been adjusted to ensure that the consolidated financial statements are presented in accordance with IFRS.

The Group issues a separate set of IFRS consolidated financial statements to comply with the requirements of Russian Federal Law No. 208-FZ *On consolidated financial statements* ("Law 208-FZ") dated 27 July 2010.

Basis of measurement

The consolidated financial statements of the Group are prepared on the historical cost basis, except for:
- mark-to-market valuation of by-products upon initial recognition, in accordance with IAS 2 *Inventories*;
- mark-to-market valuation of certain classes of financial instruments, in accordance with IFRS 9 *Financial Instruments* (IAS 39 *Financial Instruments: Recognition and Measurement* for comparative information).

2. CHANGES IN ACCOUNTING POLICIES

The accounting policies applied in the preparation of these consolidated financial statements are generally consistent with those applied in the preparation of the Group's consolidated financial statements as at and for the year ended 31 December 2017 except for the changes related to the adoption of IFRS 9 *Financial Instruments* and IFRS 15 *Revenue from Contracts with Customers*.

Adoption of new and revised standards and interpretations

The Group has initially adopted IFRS 15 *Revenue from Contracts with Customers* and IFRS 9 *Financial Instruments* from 1 January 2018.

The Group has adopted IFRS 15 *Revenue from Contracts with Customers* at the date of initial application using the cumulative effect method with no material effect on the Group's consolidated financial statements as at 31 December 2018 and for the year then ended. Comparative information for the year 31 December 2017 has not been restated.

The Group has taken an exemption not to restate comparative information for prior periods with respect to classification requirements of IFRS 9 *Financial Instruments*. Therefore, the information presented as at 31 December 2017 does not generally reflect the requirements of classification of IFRS 9 *Financial Instruments* but rather those of IAS 39 *Financial Instruments: Recognition and Measurement*.

Trade receivables on provisionally priced contracts where price is not settled until a predetermined future date that were classified as loans and receivables under IAS 39 *Financial Instruments: Recognition and Measurement* are classified as at 31 December 2018 at fair value through profit or loss and remeasured at each reporting date using the forward price for the period equivalent to that outlined in the contract (mark-to-market adjustment).

There were no material differences in the carrying amounts of financial assets and financial liabilities resulting from the adoption of IFRS 9 *Financial Instruments* as at 31 December 2018.

The significant accounting policies in respect of revenue from contracts with customers and financial instruments in effect from 1 January 2018 are set out in note 3.

Adoption of other new and revised standards and interpretations

Adoption of amendments to the following Standards for annual periods from 1 January 2018 did not have material impact on the accounting policies, financial position or results of the Group:

- IFRS 1 First-time Adoption of International Financial Reporting Standards (amended);
- IFRS 2 Share-based Payment (amended);
- IFRS 4 Insurance Contracts (amended);
- IAS 28 Investments in Associates and Joint Ventures (amended);
- IAS 40 Investment Property (amended);
- IFRIC 22 Foreign Currency Transactions and Advance Consideration.

Standards and interpretations in issue but not yet effective

The Group has not early adopted any other standard, interpretation or amendment that has been issued but is not yet effective.

Standards and Interpretations	Effective for annual periods beginning on or after
IFRS 16 Leases	1 January 2019
IFRIC 23 Uncertainty over Income Tax Treatments	1 January 2019
IFRS 17 Insurance Contracts	1 January 2021

Management of the Group plans to adopt all of the above standards and interpretations in the Group's consolidated financial statements for the respective periods.

IFRS 16 *Leases* replaces existing leases guidance, including IAS 17 *Leases*, IFRIC 4 *Determining whether an Arrangement contains a Lease*, SIC-15 *Operating Leases – Incentives* and SIC-27 *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*. IFRS 16 *Leases* will be adopted by the Group starting 1 January 2019.

IFRS 16 *Leases* requires the lessee to adopt a unified approach to the presentation of lease agreements. Under the new standard, an asset (the right to use the leased item) and a financial liability of the lessee to pay rentals are recognised for most lease agreements. The Group plans to use the exemption on lease contracts for which the lease term is less than 12 months. The Group plans to adopt IFRS 16 *Leases* in accordance with the modified retrospective approach as follows:

- at the date of initial application in respect of leases previously classified as operating leases under IAS 17 *Leases*, lease liabilities will be measured at the present value of the remaining future lease payments discounted at the incremental borrowing rate;
- a right-of-use asset is generally recognised in the amount equal to the corresponding lease liability;
- comparative information for the year ended 31 December 2018 will not be restated.

The Group preliminarily estimated impact of the initial application of IFRS 16 *Leases* on its consolidated financial position: recognition of approximately USD 200 million of lease liabilities and respective right-of-use assets with no effect on retained earnings as at 1 January 2019.

With respect to the subsequent impact on the consolidated income statement (as opposed to the current presentation of operating lease expenses), the Group will present depreciation charges for right-of-use assets, as well as interest expense on lease liabilities (unwinding of discount).

Reclassification

For the year ended 31 December 2018, revenue from sales of semi-products is allocated to revenue from each metal sales as per respective metal content in a semi-product rather than being presented under a separate "semi-products" caption (refer to note 6). Information for the year ended 31 December 2017 has been reclassified to conform with the current period presentation.

3. SIGNIFICANT ACCOUNTING POLICIES

Basis of consolidation

Subsidiaries

The consolidated financial statements incorporate financial statements of the Company and its subsidiaries, from the date that control effectively commenced until the date that control effectively ceased. Control is achieved where the Company is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Non-controlling interests in the net assets (excluding goodwill) of consolidated subsidiaries are identified separately from the Group's equity therein. Non-controlling interests include interests at the date of the original business combination and non-controlling share of changes in net assets since the date of the combination. Total comprehensive income must be attributed to the interest of the Group and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Non-controlling interests may be initially measured either at fair value or at the non-controlling interests' proportionate share of the recognised amounts of the acquiree's identifiable net assets. The choice of measurement basis is made on a transaction-by-transaction basis.

All intra-group balances, transactions and any unrealised profits or losses arising from intra-group transactions are eliminated in full on consolidation.

Changes in the Group's ownership interest in a subsidiary that do not result in the Group losing control are accounted for within the equity.

When the Group loses control of a subsidiary it derecognises the assets and liabilities and related equity components of the former subsidiary. Any gain or loss is recognised in the consolidated income statement. Any investment retained in the former subsidiary is measured at its fair value at the date when control is lost.

Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures, depending on the contractual rights and obligations of each investor. The Group recognises in relation to its interest in a joint operation: its assets, including its share of any assets held jointly; its liabilities, including its share of any liabilities incurred jointly; its revenue from the sale of its share of the output arising from the joint operation; its share of the revenue from the sale of the output by the joint operation; and its expenses, including its share of any expenses incurred jointly. The Group accounts for its investments in joint ventures using the equity method.

Business combinations

Acquisitions of businesses are accounted for using the acquisition method. The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of fair values of the assets transferred by the Group, liabilities incurred by the Group to the former owners of the acquiree and the equity interests issued by the Group at the date of acquisition in exchange for control of the acquiree.

Where an investment in a subsidiary or an associate is made, any excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the fair value of the identifiable assets acquired and the liabilities assumed at the acquisition date is recognised as goodwill. Goodwill in respect of subsidiaries is disclosed separately and goodwill relating to associates is included in the carrying value of the investment in associates. Goodwill is reviewed for impairment at least annually. If impairment has occurred, it is recognised in the consolidated income statement during the period in which the circumstances are identified and is not subsequently reversed.

If, after reassessment, the net amounts of the identifiable assets acquired and liabilities assumed at the acquisition date exceeds the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree and the fair value of the acquirer's previously held interest in the acquiree (if any), the excess is recognised in the consolidated income statement immediately as a bargain purchase gain.

Acquisition-related costs are recognised in the consolidated income statement as incurred.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are retrospectively adjusted during the measurement period (a maximum of twelve months from the date of acquisition), or additional assets or liabilities are recognised, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognised at that date.

Functional and presentation currency

The individual financial statements of each Group entity are presented in its functional currency.

The Russian Rouble ("RUB") is the functional currency of the Company, all of its subsidiaries located in the Russian Federation and all foreign subsidiaries of the Group, except for the following subsidiaries operating with a significant degree of autonomy. The functional currency of Norilsk Nickel Harjavalta Oy is US Dollar, and the functional currency of Norilsk Nickel Africa Proprietary Limited is South African Rand.

The presentation currency of the consolidated financial statements of the Group is US Dollar ("USD"). Using USD as a presentation currency is common practice for global mining companies. In addition, USD is a more relevant presentation currency for international users of the consolidated financial statements of the Group. The Group also issues consolidated financial statements to comply with Law 208-FZ, which use the Russian Rouble as the presentation currency (refer to note 1).

The translation of components of the consolidated statement of financial position, consolidated income statement, consolidated statement of cash flows into presentation currency is made as follows:

- all assets and liabilities, both monetary and non-monetary, in the consolidated statement of financial position are translated at the closing exchange rates at the end of the respective reporting period;
- income and expense are translated at the average exchange rates for each quarter (unless this average rate is not a reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in these cases income and expenses are translated at the dates of the transaction);
- all equity items are translated at the historical exchange rates;
- all resulting exchange differences are recognised as a separate component in other comprehensive income; and
- in the consolidated statement of cash flows, cash balances at beginning and end of each period presented are translated at exchange rates at the respective dates;
- all cash flows are translated at the average exchange rates for each quarter with the exception of proceeds from and repayments of loans and borrowings, dividends paid and advances received, proceeds from disposal of subsidiaries, which are translated using the prevailing exchange rates at the dates of the transactions;
- resulting exchange differences are presented in the consolidated statement of cash flows as effects of foreign exchange differences on balances of cash and cash equivalents.

Foreign currency transactions

Transactions in currencies other than the entity's functional currency (foreign currencies) are recorded at the exchange rates prevailing at the date of transactions. All monetary assets and liabilities denominated in foreign currencies are translated at the exchange rates prevailing at each reporting date. Non-monetary items carried at historical cost are translated at the exchange rates prevailing at the date of transactions. Exchange differences arising from changes in exchange rates are recognised in the consolidated income statement.

Exchange rates used in the preparation of the consolidated financial statements were as follows:

	At 31 December 2018	At 31 December 2017
Russian Rouble/US Dollar		
31 December	69.47	57.60
Average for the year ended 31 December	62.71	58.35
South African Rand/US Dollar		
31 December	14.35	12.36
Average for the year ended 31 December	13.18	13.30
Euro/US Dollar		
31 December	0.87	0.84
Average for the year ended 31 December	0.85	0.89
Chinese Yuan/US Dollar		
31 December	6.88	6.51
Average for the year ended 31 December	6.62	6.70

Revenue recognition

Metal sales revenue

Revenue from metal sales is recognised at a point of time when control over the asset is transferred to a customer and represents the invoiced value of all metal products shipped to customers, net of value added tax.

Revenue from contracts that are entered into and continue to meet the Group's expected sale requirements designated for that purpose at their inception and are expected to be settled by physical delivery, is recognised in the consolidated financial statements as and when they are delivered. A gain or loss on forward contracts that are expected to be settled by physical delivery or on net basis is measured at fair value recognised in revenue and disclosed separately from revenue from contracts with customers.

As a practical expedient, the Group does not adjust the promised amount of consideration for the effects of a significant financing component of the contracts where the period between when the Group transfers a promised good or service to a customer and the customer pays for that good or service will be one year or less.

Certain contracts are provisionally priced so that price is not settled until a predetermined future date based on the market price at that time. Revenue from these transactions is initially recognised at the current market price. Mark-to-market adjustment on provisionally priced contracts is recorded in revenue.

Other revenue

Revenue from contracts with customers on sale of goods, other than metals, is recognised at a point of time when control over the asset is transferred to the customer in accordance with the shipping terms specified in the sales agreements.

Revenue from service contracts is recognised over-time when the services are rendered.

Dividends and interest income

Dividend income from investments is recognised when the Group's right to receive payment has been established. Interest income is accrued based on effective interest method.

Leases

Leases under which the Group assumes substantially all the risks and rewards of ownership are classified as finance leases. Assets subject to finance leases are capitalised as property, plant and equipment at the lower of fair value or present value of future minimum lease payments at the date of acquisition. Simultaneously, related lease obligation is recognised at the same value. Assets held under finance leases are depreciated over their estimated economic useful lives or over the term of the lease, if shorter. If there is reasonable certainty that the lessee will obtain ownership at the end of the lease term, the period of expected use is the useful life of the asset.

Finance lease payments are allocated using the effective interest rate method, between the lease finance cost, which is included in finance costs, and the capital repayment, which reduces the related lease obligation to the lessor.

Leases where the lessor retains substantially all the risks and benefits of ownership of the asset are classified as operating leases. Operating lease payments are recognised as an expense in the consolidated income statement on a straight-line basis over the lease term, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed. Contingent rentals arising under operating and finance leases are expensed in the period in which they are incurred.

Finance costs

Finance costs mostly comprise interest expense on borrowings and unwinding of discount on decommissioning obligations.

Finance costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time when the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation.

Government grants

Government grants are recognised when there is reasonable assurance that the grant will be received and all conditions and requirements attaching to the grant will be met. Government grants related to assets are deducted from the cost of these assets in arriving at their carrying value.

Employee benefits

Remuneration to employees in respect of services rendered during a reporting period is recognised as an expense in that period. Long-term employee benefits obligations are discounted to present value.

Defined contribution plans

The Group contributes to the following major defined contribution plans:
- Pension Fund of the Russian Federation;
- Mutual accumulated pension plan.

The only obligation of the Group with respect to these and other defined contribution plans is to make specified contributions in the period in which they arise. These contributions are recognised in the consolidated income statement when employees have rendered respective services.

Income tax expense

Income tax expense represents the sum of the tax currently payable and deferred tax.

Income tax is recognised as an expense or income in the consolidated income statement, except when it relates to other items recognised directly in other comprehensive income, in which case the tax is also recognised directly in other comprehensive income. Where current or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

Current tax

Current tax is based on taxable profit for the year. Taxable profit differs from profit for the year as reported in the consolidated income statement because it excludes items of income or expense that are taxable or deductible in other years and it also excludes items that are never taxable or deductible.

Deferred tax

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases used in computation of taxable profit. Deferred tax liabilities are recognised for all taxable temporary differences, and deferred tax assets are recognised for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilised. Such assets and liabilities are not recognised if a temporary difference arises from goodwill or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither taxable profit nor accounting profit.

Deferred tax liabilities are recognised for taxable temporary differences associated with investments in subsidiaries, joint ventures and associates, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognised to the extent that it is probable that there will be sufficient taxable profits against which to utilise the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at each statement of financial position date and adjusted to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

The measurement of deferred tax liabilities and assets reflects the tax consequences of the manner in which the Group expects at the reporting date to recover or settle the carrying amount of its assets and liabilities. Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when they relate to income taxes levied by the same taxation authority.

Property, plant and equipment and mine development costs

Mining assets

Mine development costs are capitalised and comprise expenditures directly related to:
- acquiring mining and exploration licences;
- developing new mining operations;
- estimating revised content of minerals in the existing ore bodies; and
- expanding capacity of a mine.

Mine development costs include directly attributable borrowings costs.

Mine development costs are transferred to mining assets and start to be depreciated when a new mine reaches commercial production quantities.

Mining assets are recorded at cost less accumulated depreciation and impairment losses. Mining assets include cost of acquiring and developing mining properties, pre-production expenditure, mine infrastructure, plant and equipment that process extracted ore, mining and exploration licenses and present value of future decommissioning costs and interest capitalised.

Depreciation of mining assets is charged from the date on which a new mine reaches commercial production quantities and is included in the cost of production. Carrying value of mining assets is depreciated on a straight-line basis over the lesser of their remaining economic useful lives or remaining life of mine that they relate to, calculated on the basis of the amount of commercial ore reserves. When determining the life of mine, assumptions valid at the time of estimation may change in case new information becomes available. Useful lives are in average varying from 1 to 50 years.

Non-mining assets

Non-mining assets include metallurgical processing plants, buildings, infrastructure, machinery and equipment and other non-mining assets. Non-mining assets are stated at cost less accumulated depreciation and impairment losses.

Non-mining assets are depreciated on a straight-line basis over their economic useful lives.

Depreciation is calculated over the following economic useful lives:

- buildings, structures and utilities 2 – 50 years
- machinery, equipment and transport 1 – 25 years
- other non-mining assets 1 – 20 years

Capital construction-in-progress

Capital construction-in-progress comprises costs directly related to construction of buildings, processing plant, infrastructure, machinery and equipment, including:

- advances given for purchases of property, plant and equipment and materials acquired for construction of buildings, processing plant, infrastructure, machinery and equipment;
- irrevocable letters of credit opened for future fixed assets deliveries and secured with deposits placed in banks;
- finance charges capitalised during construction period where such costs are financed by borrowings.

Depreciation of these assets commences when the assets are put into operation.

Research and exploration expenditure

Research and exploration expenditure, including geophysical, topographical, geological and similar types of expenditure, is capitalised, if it is deemed that such expenditure will lead to an economically viable capital project, and begins to be amortised over the life of mine, when commercial viability of the project is proved. Otherwise it is expensed in the period in which it is incurred.

Research and exploration expenditure written-off before development and construction starts is not subsequently capitalised, even if a commercial discovery subsequently occurs.

Intangible assets, excluding goodwill

Intangible assets are recorded at cost less accumulated amortisation and impairment losses. Intangible assets mainly include patents, licences, software and rights to use software and other intangible assets.

Amortisation of patents, licenses and software is charged on a straight-line basis over 1 – 10 years.

Impairment of tangible and intangible assets, excluding goodwill

At each reporting date, the Group analyses the triggers of impairment of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where it is not practical to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the cash-generating unit to which the asset belongs.

Recoverable amount is the higher of fair value less cost to sell and value-in-use. In assessing value-in-use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or cash-generating unit. If the recoverable amount of an asset (or cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognised in the consolidated income statement immediately.

Where an impairment loss subsequently reversed, the carrying amount of the asset (or cash-generating unit) is increased to the revised estimate of its recoverable amount, but only to the extent that the increased carrying amount does not exceed the original carrying amount that would have been determined had no impairment loss been recognised in prior periods. A reversal of an impairment loss is recognised in the consolidated income statement.

Inventories

Refined metals

Main produced metals include nickel, copper, palladium, platinum; by-products include cobalt, gold, rhodium, silver and other minor metals. Main products are measured at the lower of net cost of production or net realisable value. The net cost of production of main products is determined as total production cost, allocated to each joint product by reference to their relative sales value. By-products are initially measured at net realisable value.

Work-in-process

Work-in-process includes all costs incurred in the normal course of business including direct material and direct labour costs and allocation of production overheads, depreciation and amortisation and other costs, incurred for producing each product, given its stage of completion.

Materials and supplies

Materials and supplies are valued at the weighted average cost less allowance for obsolete and slow-moving items.

Financial assets

Financial assets are recognised when the Group has become a party to the contractual arrangement of the instrument and are initially measured at fair value, plus transaction costs, except for those financial assets classified at fair value through profit or loss, which are initially measured at fair value.

Financial assets are classified into the following specified categories:

- financial assets at amortised cost;
- financial assets at fair value through other comprehensive income; and
- financial assets at fair value through profit or loss.

The classification of financial assets depends on the Group's business model for managing the financial assets and the contractual terms of the cash flows and is determined at the time of initial recognition.

Effective interest method

The effective interest method is used for calculating the amortised cost of a financial asset and for allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including transaction costs and other premiums or discounts) through the expected life of the financial asset, or, where appropriate, a shorter period.

Income is recognised on an effective interest basis for debt securities other than those financial assets designated at fair value through profit or loss or other comprehensive income.

Financial assets at amortised cost

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated at fair value though profit or loss:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

The Group generally classifies cash and cash equivalents, trade and other receivables (excluding trade receivables on provisionally priced contracts), loans issued and bank deposits as financial assets at amortised cost.

Financial assets at fair value through other comprehensive income

A debt instrument is measured at fair value through other comprehensive income if it meets both of the following conditions and is not designated at fair value though profit or loss:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

At initial recognition the Group may make an irrevocable election to present in other comprehensive income subsequent changes in the fair value of an investment in an equity instrument that is not held for trading. This election is made on an instrument-by-instrument basis.

Financial assets at fair value through profit or loss

All financial assets not classified as measured at amorised cost or fair value through other comprehensive income are classified as financial assets at fair value through profit or loss.

Trade receivables on provisionally priced contracts and derivative financial assets are measured at fair value through profit or loss. Trade receivables on provisionally priced contracts are remeasured at each reporting date using the forward price for the period equivalent to that outlined in the contract.

Impairment of financial assets

The Group recognises a loss allowance for expected credit losses on a financial asset measured at amortised cost using one of the two methods:

Lifetime expected credit losses	Trade and other receivables Financial assets other than trade and other receivables if the credit risk on that financial asset has increased significantly since initial recognition
12-month expected credit losses since the reporting date	Financial assets other than trade and other receivables at initial recognition Financial assets other than trade and other receivables for which credit risk has not increased significantly since initial recognition

When determining whether the credit risk of the financial asset has increased significantly since initial recognition and when estimating expected credit losses, the Group considers reasonable and supportable information that is relevant and available, including both quantitative and qualitative information and analysis based on Group's historical experience and forward-looking information.

The Group applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables. The Group assumes that expected credit loss for all trade and other receivables, which are overdue in excess of 365 days is equal to their carrying amount. To measure the expected credit losses, trade and other receivables that are past due for less than 365 days are grouped based on the length of the overdue period to which respective expected loss rates are applied. The expected loss rates are based on the historical credit loss experience, adjusted to reflect current and forward-looking information on the ability of the customers to settle the receivables.

When trade and other receivables are considered uncollectible, they are written off against the loss allowance. Changes in the loss allowance are recognised in the consolidated income statement.

Derecognition of financial assets

The Group derecognises a financial asset only when the contractual rights to the cash flows from the asset expire; or it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

Financial liabilities

The Group classifies financial liabilities into loans and borrowings, trade and other payables. Such financial liabilities are recognised initially at fair value less any directly attributable transaction costs. Subsequent to initial recognition, these financial liabilities are measured at amortised cost using the effective interest method. Derivative financial liabilities are measured at fair value through profit or loss.

Effective interest method

The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or where appropriate, a shorter period.

Derecognition of financial liabilities

The Group derecognises financial liabilities when, and only when, the Group's obligations are discharged, cancelled or they expire.

Cash and cash equivalents

Cash and cash equivalents comprise cash balances, cash deposits in banks, brokers and other financial institutions and highly liquid investments with original maturities of three months or less and on demand deposits, which are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value.

Provisions

Provisions are recognised when the Group has a legal or constructive obligation as a result of past events for which it is probable that an outflow of economic benefits will be required to settle the obligation, and the amount of the obligation can be reliably estimated.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the reporting date, taking into account the risks and uncertainties surrounding the obligation. Where a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows.

Decommissioning obligations

Decommissioning obligations include direct asset decommissioning costs as well as related land restoration costs.

Future decommissioning and other related obligations, discounted to present value, are recognised at the moment when the legal or constructive obligation in relation to such costs arises and the future costs can be reliably estimated. These costs are capitalised as part of the initial cost of the related asset (i.e. a mine) and is depreciated over the useful life of the asset. The unwinding of the discount on decommissioning obligations is included in the consolidated income statement as finance costs. Decommissioning obligations are periodically reviewed in light of current laws and regulations, and adjustments are made as necessary.

4. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

Preparation of the consolidated financial statements in accordance with IFRS requires the Group's management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. The determination of estimates requires judgements which are based on historical experience, current and expected economic conditions, and all other available information. Actual results could differ from these estimates.

The most significant areas requiring the use of management estimates and assumptions relate to:
- useful economic lives of property, plant and equipment;
- impairment of non-financial assets;
- provisions and allowances;
- decommissioning obligations;
- income taxes and
- contingencies.

Useful economic lives of property, plant and equipment

Carrying value of the Group's mining assets, classified within property, plant and equipment, is depreciated on a straight-line basis over the lesser of their remaining economic useful lives or remaining life of mine. When determining the life of a mine, valid assumptions at the time of estimation may change in case of new information becomes available.

The factors that could affect the estimation of the life of mine include the following:
- changes in proved and probable ore reserves;
- the grade of mineral reserves varying significantly from time to time;
- differences between actual commodity prices and commodity price assumptions used in the estimation and classification of ore reserves;
- unforeseen operational issues at mine sites; and
- changes in capital, operating, mining, processing and decommissioning costs, discount rates and foreign exchange rates could possibly adversely affect the economic viability of ore reserves.

Any of these changes could affect prospective depreciation of mining assets. Useful economic lives of non-mining property, plant and equipment are reviewed by management periodically. The review is based on the current condition of the assets and the estimated period during which they will continue to bring economic benefit to the Group.

Impairment of non-financial assets

The Group reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets are impaired or indication of reversal of impairment. In making the assessment for impairment, assets that do not generate independent cash flows are allocated to an appropriate cash-generating unit. Management necessarily applies its judgement in allocating assets that do not generate independent cash flows to appropriate cash-generating units, and also in estimating the timing and value of the underlying cash flows within the value-in-use calculation. Subsequent changes to the cash-generating unit allocation or to the timing of cash flows could impact the carrying value of the respective assets.

Provisions and allowances

The Group creates an allowance for obsolete and slow-moving inventories. In addition, certain finished goods of the Group are carried at net realisable value. Estimates of net realisable value of inventories are based on the most reliable evidence available at the time the estimates are made. These estimates take into consideration fluctuations of price or cost directly relating to events occurring subsequent to the statement of financial position date to the extent that such events confirm conditions existing at the end of the period.

The Group creates provisions for social commitments, tax and other provisions. Provisions represent present value of the best estimate of the future outflow of economic benefits to settle these obligations.

Decommissioning obligations

The Group's mining and exploration activities are subject to various environmental laws and regulations. The Group estimates decommissioning obligations based on management's understanding of the current legal requirements in the various jurisdictions in which it operates, terms of the license agreements and internally generated engineering estimates. Provisions are recognised, based on present values, for decommissioning and land restoration costs as soon as the obligations arise. Actual costs incurred in future periods could differ materially from the amounts provided. Additionally, future changes to environmental laws and regulations, life of mine estimates and discount rates could affect the carrying amount of this provision.

Income taxes

The Group is subject to income taxes in numerous jurisdictions. Significant judgement is required in determining provision for income taxes due to the complexity of legislation in some jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain. The Group recognises provisions for anticipated tax audit issues based on estimates of whether additional taxes will be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made.

Deferred tax assets are reviewed at each statement of financial position date and adjusted to the extent that it is probable that sufficient taxable income will be available to allow all or part of the deferred tax asset to be utilised. The estimation of that probability includes judgements based on the expected performance.

Various factors are considered to assess the probability of the future utilisation of deferred tax assets, including past operating results, operational plans, expiration of tax losses carried forward, and tax planning strategies. If actual results differ from these estimates or if these estimates must be adjusted in future periods, the financial position, results of operations and cash flows may be affected.

Contingencies

By their nature, contingencies will only be resolved when one or more future events occur or fail to occur. The assessment of such contingencies inherently involves the exercise of significant judgement and estimates of the outcome of future events.

5. SEGMENT INFORMATION

Operating segments are identified on the basis of internal reports on components of the Group that are regularly reviewed by the Management Board.

The Group has updated its management accounting system to account for business changes. As a result, GRK Bystrinskoye segment is now presented separately from Other mining segment, trading operations presentation was amended as set out below.

Management has determined the following operating segments:

- GMK Group segment includes mining and metallurgy operations, transport services, energy, repair and maintenance services located in Taimyr Peninsula. GMK Group metal sales to external customers include metal volumes processed at KGMK Group metallurgy facilities. GMK Group other sales to external customers primarily include revenue for energy and utilities services provided in Taimyr Peninsula; intersegment revenue from metal sales includes sale of semi-products to NN Harjavalta segment for further processing.
- KGMK Group segment includes mining and metallurgy operations, energy, exploration activities located in Kola Peninsula. KGMK Group revenue from other sales includes intersegment metal processing services under tolling arrangements provided to other segments and energy and utilities services provided to external customers in Kola Peninsula. Intersegment revenue from metal sales include sale of semi-products to NN Harjavalta for further processing.
- NN Harjavalta segment includes refinery operations located in Finland. NN Harjavalta sales primarily include metal produced from semi-products purchased from GMK Group and KGMK Group segments.
- GRK Bystrinskoye segment includes ore mining and processing operations located in the Zabaikalsky region of the Russian Federation.

- Other mining segment primarily includes 50% Group interest in metal mining and processing joint operations of Nkomati Nickel Mine ("Nkomati"), as well as certain other mining and exploration activities located in Russia and abroad. Other mining segment sales primarily include Group share at sales of metal semi-products produced by Nkomati.
- Other non-metallurgical segment includes resale of third party metal products, other trading operations, supply chain management, transport services, energy and utility, research and other activities located in Russia and abroad. Other non-metallurgical segment also includes resale of 50% metal semi-products produced by Nkomati. Other sales of Other non-metallurgical segment primarily include revenue from passenger air transportation, freight transportation services and fuel sales.

Corporate activities of the Group do not represent an operating segment, include primarily headquarters' general and administrative expenses and treasury operations of the Group and are presented as Unallocated.

The amounts in respect of reportable segments in the disclosure below are stated before intersegment eliminations, excluding:
- balances of intercompany loans and borrowings and interest accruals;
- intercompany investments;
- accrual of intercompany dividends.

Amounts are measured on the same basis as those in the consolidated financial statements. Information for the year ended 31 December 2017 and as at 31 December 2017 has been presented to conform with the current period presentation. Previously, all the Group's metal trading operations (including own metal) were included in Other non-metallurgical.

The following tables present revenue, measure of segment profit or loss (EBITDA) and other segment information from continuing operations regarding the Group's reportable segments for the year ended 31 December 2018 and 31 December 2017, respectively.

For the year ended 31 December 2018	GMK Group	KGMK Group	NN Harjavalta	GRK Bystrinskoye	Other mining	Other non-metallurgical	Eliminations	Total
Metal sales to external customers	8,787	361	1,020	–	107	687	–	10,962
Other sales to external customers	160	33	6	6	1	502	–	708
Inter-segment metal sales	720	154	–	–	–	–	(874)	–
Inter-segment other sales	75	363	–	2	–	325	(765)	–
Total revenue	**9,742**	**911**	**1,026**	**8**	**108**	**1,514**	**(1,639)**	**11,670**
Segment EBITDA	6,602	190	71	96	(6)	50	(13)	6,990
Unallocated								(759)
Consolidated EBITDA								**6,231**
Depreciation and amortisation								(765)
Impairment of non-financial assets								(50)
Finance costs								(580)
Foreign exchange loss, net								(1,029)
Other income and expenses, net								95
Profit before tax								**3,902**
Other segment information								
Purchase of property, plant and equipment and intangible assets	1,016	292	18	168	21	38	–	1,553
Depreciation and amortisation	612	82	24	13	6	28	–	765
Impairment of non-financial assets	8	3	–	–	39	–	–	50

For the year ended 31 December 2017	GMK Group	KGMK Group	NN Harjavalta	GRK Bystrinskoye	Other mining	Other non-metallurgical	Eliminations	Total
Metal sales to external customers	6,712	347	835	–	128	393	–	8,415
Other sales to external customers	176	34	5	14	–	502	–	731
Inter-segment metal sales	500	122	–	–	–	–	(622)	–
Inter-segment other sales	59	394	–	1	–	391	(845)	–
Total revenue	**7,447**	**897**	**840**	**15**	**128**	**1,286**	**(1,467)**	**9,146**
Segment EBITDA	4,559	182	61	(65)	(3)	18	(34)	4,718
Unallocated								(723)
Consolidated EBITDA								**3,995**
Depreciation and amortisation								(645)
Impairment of non-financial assets								(227)
Finance costs								(535)
Foreign exchange gain, net								159
Other income and expenses, net								97
Profit before tax								**2,844**
Other segment information								
Purchase of property, plant and equipment and intangible assets	1,225	228	16	449	20	64	–	2,002
Depreciation and amortisation	463	61	25	–	72	24	–	645
Impairment of non-financial assets	101	3	–	–	122	1	–	227

The following table presents segment metal sales to external customers breakdown by metal for the year ended 31 December 2018 and 31 December 2017, respectively.

For the year ended 31 December 2018	GMK Group	KGMK Group	NN Harjavalta	Other mining	Other non-metallurgical	Total
Nickel	1,827	275	805	53	53	3,013
Copper	2,824	51	86	8	8	2,977
Palladium	2,990	1	55	18	610	3,674
Platinum	574	3	7	6	6	596
Other metals	572	31	67	22	10	702
	8,787	**361**	**1,020**	**107**	**687**	**10,962**

For the year ended 31 December 2017	GMK Group	KGMK Group	NN Harjavalta	Other mining	Other non-metallurgical	Total
Nickel	1,409	254	647	53	53	2,416
Copper	2,268	49	79	13	13	2,422
Palladium	2,056	11	36	23	308	2,434
Platinum	618	6	10	10	10	654
Other metals	361	27	63	29	9	489
	6,712	**347**	**835**	**128**	**393**	**8,415**

The following tables present assets and liabilities of the Group's reportable segments at 31 December 2018 and 31 December 2017, respectively.

At 31 December 2018	GMK Group	KGMK Group	NN Harjavalta	GRK Bystrinskoye	Other mining	Other non-metallurgical	Eliminations	Total
Inter-segment assets	292	114	140	24	–	57	(627)	–
Segment assets	9,903	996	451	1,492	88	792	(56)	13,666
Total segment assets	**10,195**	**1,110**	**591**	**1,516**	**88**	**849**	**(683)**	**13,666**
Unallocated								1,585
Total assets								**15,251**
Inter-segment liabilities	139	63	122	39	5	259	(627)	–
Segment liabilities	1,756	134	100	68	26	1,028	–	3,112
Total segment liabilities	**1,895**	**197**	**222**	**107**	**31**	**1,287**	**(627)**	**3,112**
Unallocated								8,666
Total liabilities								**11,778**

At 31 December 2017	GMK Group	KGMK Group	NN Harjavalta	GRK Bystrinskoye	Other mining	Other non-metallurgical	Eliminations	Total
Inter-segment assets	346	207	172	2	9	54	(790)	–
Segment assets	11,536	975	390	1,518	118	935	(42)	15,430
Total segment assets	**11,882**	**1,182**	**562**	**1,520**	**127**	**989**	**(832)**	**15,430**
Unallocated								1,205
Total assets								**16,635**
Inter-segment liabilities	89	135	124	43	1	398	(790)	–
Segment liabilities	2,128	157	73	89	32	171	–	2,650
Total segment liabilities	**2,217**	**292**	**197**	**132**	**33**	**569**	**(790)**	**2,650**
Unallocated								9,327
Total liabilities								**11,977**

6. METAL SALES

The Group's metal sales to external customers are detailed below (based on external customers' locations):

For the year ended 31 December 2018	Total	Nickel	Copper	Palladium	Platinum	Other metals
Europe	5,868	1,323	2,356	1,216	514	459
Asia	2,929	1,090	386	1,313	41	99
North and South America	1,619	348	26	1,111	34	100
Russian Federation and CIS	546	252	209	34	7	44
	10,962	**3,013**	**2,977**	**3,674**	**596**	**702**
For the year ended 31 December 2017						
Europe	4,753	1,084	2,130	756	449	334
Asia	1,939	804	115	825	119	76
North and South America	1,166	313	–	807	–	46
Russian Federation and CIS	557	215	177	46	86	33
	8,415	**2,416**	**2,422**	**2,434**	**654**	**489**

Metal revenue for the year ended 31 December 2018 included net gain of USD 12 million in respect of forward contracts measured at fair value that are expected to be settled by metal physical delivery or on a net basis (for the year ended 31 December 2017: net loss in the amount of USD (26) million).

7. COST OF METAL SALES

	For the year ended 31 December 2018	For the year ended 31 December 2017
Cash operating costs		
Labour	1,311	1,392
Materials and supplies	727	732
Purchases of raw materials and semi-products	436	297
Purchases of refined metals for resale	430	530
Mineral extraction tax and other levies	212	221
Third party services	200	242
Electricity and heat energy	143	143
Fuel	87	81
Transportation expenses	70	65
Sundry costs	158	152
Total cash operating costs	**3,774**	**3,855**
Depreciation and amortisation	653	630
Decrease/(increase) in metal inventories	109	(517)
Total	**4,536**	**3,968**

8. GENERAL AND ADMINISTRATIVE EXPENSES

	For the year ended 31 December 2018	For the year ended 31 December 2017
Staff costs	541	478
Taxes other than mineral extraction tax and income tax	103	79
Third party services	93	97
Depreciation and amortisation	38	32
Rent expenses	23	25
Transportation expenses	9	8
Other	52	40
Total	**859**	**759**

9. SELLING AND DISTRIBUTION EXPENSES

	For the year ended 31 December 2018	For the year ended 31 December 2017
Transportation expenses	39	38
Marketing expenses	31	14
Staff costs	14	13
Other	8	10
Total	**92**	**75**

10. OTHER OPERATING INCOME AND EXPENSES

	For the year ended 31 December 2018	For the year ended 31 December 2017
Social expenses	207	303
Change in allowance for obsolete and slow-moving inventory	15	11
Change in allowance for expected credit losses	6	19
Net income earned during the pre-commissioning stage	(106)	–
Other, net	(27)	29
Total	**95**	**362**

11. FINANCE COSTS

	For the year ended 31 December 2018	For the year ended 31 December 2017
Interest expense on borrowings net of amounts capitalised	384	386
Unwinding of discount on provisions and payables	100	133
Changes in fair value of cross-currency interest rate swap	51	–
Changes in fair value of non-current liabilities	46	–
Other, net	(1)	16
Total	**580**	**535**

12. INCOME FROM INVESTMENTS

	For the year ended 31 December 2018	For the year ended 31 December 2017
Interest income on bank deposits	59	39
Other, net	36	38
Total	**95**	**77**

13. INCOME TAX EXPENSE

	For the year ended 31 December 2018	For the year ended 31 December 2017
Current income tax expense	812	686
Deferred tax expense	31	35
Total	**843**	**721**

A reconciliation of theoretic income tax, calculated at the statutory rate in the Russian Federation, the location of major production assets of the Group, to the amount of actual income tax expense recorded in the consolidated income statement is as follows:

	For the year ended 31 December 2018	For the year ended 31 December 2017
Profit before tax	**3,902**	**2,844**
Income tax at statutory rate of 20%	780	569
Allowance for deferred tax assets	29	38
Non-deductible impairment of non-financial assets	4	7
Non-deductible social expenses	54	73
Effect of different tax rates of subsidiaries operating in other jurisdictions	(39)	8
Tax effect of other permanent differences	15	26
Total	**843**	**721**

The corporate income tax rates in other countries where the Group has a taxable presence vary from 0% to 30%.

Deferred tax balances

	At 31 December 2017	Recognised in income statement	Disposed on disposal of subsidiaries	Effect of translation to presentation currency	At 31 December 2018
Property, plant and equipment	368	86	–	(68)	386
Inventories	124	–	–	(17)	107
Trade and other receivables	(3)	(5)	–	1	(7)
Decommissioning obligations	(69)	5	–	11	(53)
Loans and borrowings, trade and other payables	(69)	(28)	–	15	(82)
Other assets	46	(18)	–	(4)	24
Other liabilities	8	(10)	–	–	(2)
Tax loss carried forward	(75)	1	–	13	(61)
Net deferred tax liabilities	**330**	**31**	**–**	**(49)**	**312**

	At 31 December 2016	Recognised in income statement	Disposed on disposal of subsidiaries	Effect of translation to presentation currency	At 31 December 2017
Property, plant and equipment	350	2	(4)	20	368
Inventories	102	16	–	6	124
Trade and other receivables	(12)	9	–	–	(3)
Decommissioning obligations	(79)	16	–	(6)	(69)
Loans and borrowings, trade and other payables	(33)	(35)	–	(1)	(69)
Other assets	(10)	57	–	(1)	46
Other liabilities	6	2	–	–	8
Tax loss carried forward	(41)	(32)	–	(2)	(75)
Net deferred tax liabilities	**283**	**35**	**(4)**	**16**	**330**

Certain deferred tax assets and liabilities have been offset to the extent they relate to taxes levied on the Group's entities which entered into the tax consolidation group. Deferred tax balances (after offset) presented in the consolidated statement of financial position were as follows:

	At 31 December 2018	At 31 December 2017
Deferred tax liability	385	407
Deferred tax asset	(73)	(77)
Net deferred tax liabilities	**312**	**330**

Unrecognised deferred tax assets

Deferred tax assets have not been recognised as follows:

	At 31 December 2018	At 31 December 2017
Deductible temporary differences	100	104
Tax loss carry-forwards	191	219
Total	**291**	**323**

Deferred tax assets have not been recognised in respect of these items because it is not probable that future taxable profit will be available against which the Group can utilise the benefits therefrom.

At 31 December 2018 deferred tax asset in the amount of USD 145 million related to tax loss arising on disposal of OJSC "Third Generation Company of the Wholesale Electricity Market" ("OGK-3") (at 31 December 2017: USD 175 million) was not recognised as it was incurred by the Company prior to setting up of the tax consolidation group. This deferred tax asset can be utilised without expiry only if the Company exits the tax consolidation group.

Deferred tax assets in the amount of USD 46 million related to other non-expiring tax losses were not recognised due to specific rules stated by art. 283 of the Tax code of the Russian Federation (31 December 2017: USD 44 million).

At 31 December 2018, the Group did not recognise a deferred tax liability in respect of taxable temporary differences of USD 1,558 million (31 December 2017: USD 1,459 million) associated with investments in subsidiaries, because management believes that it is in a position to control the timing of reversal of such differences and does not expect its reversal in foreseeable future.

14. PROPERTY, PLANT AND EQUIPMENT

		Non-mining assets				
	Mining assets and mine development cost	Buildings, structures and utilities	Machinery, equipment and transport	Other	Capital construction-in-progress	Total
Cost						
Balance at 1 January 2017	**7,314**	**2,855**	**2,976**	**215**	**1,387**	**14,747**
Additions	1,429	–	–	–	840	2,269
Transfers	–	247	477	84	(808)	–
Change in decommissioning provision	(7)	(13)	–	–	–	(20)
Disposals	(124)	(150)	(90)	(23)	(12)	(399)
Other	(40)	42	(6)	2	2	–
Effect of translation to presentation currency	422	153	150	11	75	811
Balance at 31 December 2017	**8,994**	**3,134**	**3,507**	**289**	**1,484**	**17,408**
Additions	925	–	–	–	798	1,723
Transfers	–	304	348	9	(661)	–
Change in decommissioning						
provision	(6)	(1)	–	–	–	(7)
Disposals	(67)	(4)	(43)	(4)	(12)	(130)
Other	(12)	(13)	20	5	–	–
Effect of translation to presentation currency	(1,589)	(542)	(586)	(50)	(251)	(3,018)
Balance at 31 December 2018	**8,245**	**2,878**	**3,246**	**249**	**1,358**	**15,976**
Accumulated depreciation and impairment						
Balance at 1 January 2017	**(2,090)**	**(1,413)**	**(1,618)**	**(72)**	**(248)**	**(5,441)**
Charge for the year	(347)	(97)	(264)	(24)	–	(732)
Disposals	107	56	79	5	4	251
Impairment loss	(154)	(87)	(7)	–	21	(227)
Other	4	(18)	16	(1)	(1)	–
Effect of translation to presentation currency	(120)	(78)	(82)	(4)	(15)	(299)
Balance at 31 December 2017	**(2,600)**	**(1,637)**	**(1,876)**	**(96)**	**(239)**	**(6,448)**

	Mining assets and mine development cost	Non-mining assets				Total
		Buildings, structures and utilities	Machinery, equipment and transport	Other	Capital construction-in-progress	
Charge for the year	(350)	(108)	(291)	(24)	–	(773)
Disposals	62	3	38	3	2	108
Impairment loss	(33)	(31)	(19)	(2)	35	(50)
Other	9	6	(12)	(3)	–	–
Effect of translation to presentation currency	460	274	329	19	39	1,121
Balance at 31 December 2018	**(2,452)**	**(1,493)**	**(1,831)**	**(103)**	**(163)**	**(6,042)**
Carrying value						
At 31 December 2017	**6,394**	**1,497**	**1,631**	**193**	**1,245**	**10,960**
At 31 December 2018	**5,793**	**1,385**	**1,415**	**146**	**1,195**	**9,934**

At 31 December 2018 capital construction-in-progress included USD 197 million of irrevocable letters of credit opened for fixed assets purchases (31 December 2017: USD 225 million), representing security deposits placed in banks. For the year ended 31 December 2018 purchases of property, plant and equipment in the consolidated statement of cash flows include USD 192 million related to these irrevocable letters of credit (for the year ended 31 December 2017: USD 210 million).

Capitalised borrowing costs for the year ended 31 December 2018 amounted to USD 172 million (for the year ended 31 December 2017: USD 263 million). Capitalisation rate used to determine the amount of borrowing costs equals to 5.15% per annum (31 December 2017: 6.28%). At 31 December 2018 mining assets and mine development cost included USD 2,868 million of mining assets under development (31 December 2017: USD 3,728 million).

At 31 December 2018 non-mining assets included USD 44 million of investment property (31 December 2017: USD 55 million).

Impairment

At 31 December 2017 the Group reclassified Nkomati Nickel Mine (Nkomati) from assets classified as held for sale and tested the assets for impairment. As a result, impairment loss in the amount of USD 129 million was recognised in impairment of non-financial assets in the consolidated income statement for the year ended 31 December 2017.

At 31 December 2018 the Group assessed indicators of further impairment based on Nkomati performance results against budget and management expectations as well as exchange rate and price forecasts.

As a result, the Group performed the impairment test and determined the value-in-use of the Group's share in Nkomati property, plant and equipment in the amount of USD 12 million using a discounted cash flow model approach. Impairment loss in the amount of USD 39 million was recognised in impairment of non-financial assets in the consolidated income statement for the year ended 31 December 2018.

The most significant assumptions on the basis of which the value-in-use was determined are as follows:

- Future cash flows were projected based on budgeted amounts, taking into account actual results for the previous years. Forecasts were assessed up to 2028. Measurements were performed based on discounted cash flows expected to be generated by production assets.
- Management estimates market prices for metal concentrates based on adjusted commodity price forecast for metals. Commodities price forecast was based on consensus forecast.
- Production forecasts were primarily based on internal production reports available at the date of impairment test and management's assumptions regarding future production levels.
- Inflation forecasts were sourced from Economist Intelligence Unit report. Forecast for exchange rates was made based on expected ZAR and USD inflation indices, 5.6% and 2.5% respectively.
- A pre-tax nominal ZAR discount rate of 21.3% (31 December 2017: 21.6%) was estimated by reference to the weighted average cost of capital for the Group and reflects management's estimates of the risks specific to the production unit.

During the year ended 31 December 2015, the Group revised its intention on the further use of the gas extraction assets. As a result, these assets are assessed as a separate cash-generating unit with its value-in-use being determined using a discounted cash flow model approach at each subsequent reporting date.

The most significant assumptions used in the discounted cash flow model at 31 December 2018 are as follows:

- Future cash flows were projected based on budgeted amounts, taking into account actual results for the previous years. Forecasts were assessed up to 2030. Measurements were performed based on discounted cash flows expected to be generated by gas upstream assets.
- Management estimates prices for natural gas and gas condensate based on commodities price forecasts and government set prices. Commodities price forecast was based on consensus forecast.
- Production forecasts were primarily based on internal production reports available at the date of impairment test and management's assumptions regarding future production levels.
- The amounts and timing of capital investments were based on management's forecast.
- nflation used was projected within 2-5%. Forecast for exchange rates was based on Oxford Economics forecast.
- A pre-tax nominal RUB discount rate of 15.8% (31 December 2017: 15.8%) was estimated by reference to the weighted average cost of capital and reflects management's estimates of the risks specific to the production units.

As a result, impairment loss in the amount of USD 8 million was recognised in impairment of non-financial assets in the consolidated income statement for the year ended 31 December 2018 (for the year ended 31 December 2017: USD 48 million). Accumulated impairment loss, net of respective accumulated depreciation had no impairment been recognised, amounted to USD 243 million at 31 December 2018.

During the year ended 31 December 2018 the Group recognised additional impairment losses in the amount of USD 3 million in respect of specific individual assets (for the year ended 31 December 2017: USD 50 million).

15. OTHER FINANCIAL ASSETS

	At 31 December 2018	At 31 December 2017
Non-current		
Loans issued and other receivables	133	190
Bank deposits	8	2
Total non-current	**141**	**192**
Current		
Loans issued and other receivables	57	1
Bank deposits	83	94
Derivative financial instruments	7	4
Total current	**147**	**99**

16. OTHER TAXES

	At 31 December 2018	At 31 December 2017
Taxes receivable		
Value added tax recoverable	244	257
Other taxes	28	40
	272	**297**
Less: Allowance for value added tax recoverable	(1)	(1)
Other taxes receivable	**271**	**296**
Taxes payable		
Value added tax	74	66
Social security contributions	37	26
Property tax	23	22
Other	28	33
Other taxes payable	**162**	**147**

17. INVENTORIES

	At 31 December 2018	At 31 December 2017
Refined metals and other metal products	526	655
Work-in-process and semi-products	1,138	1,333
Less: Allowance for work-in-process	(4)	(4)
Total metal inventories	**1,660**	**1,984**
Materials and supplies	662	739
Less: Allowance for obsolete and slow-moving items	(42)	(34)
Materials and supplies, net	**620**	**705**
Inventories	**2,280**	**2,689**

At 31 December 2018 part of metal semi-products stock in the amount of USD 88 million (31 December 2017: USD 453 million) was presented in other non-current assets according to Group's production plans.

18. TRADE AND OTHER RECEIVABLES

	At 31 December 2018	At 31 December 2017
Trade receivables from metal sales	143	251
Other receivables	131	168
	274	**419**
Less: Allowance for expected credit losses	(70)	(92)
Trade and other receivables, net	**204**	**327**

In 2018 and 2017, the average credit period on metal sales varied from 0 to 30 days. Trade receivables are generally non-interest bearing.

At 31 December 2018 trade and other short-term accounts receivable include USD 120 million of short-term trade accounts receivable measured at fair value through profit or loss upon recognition, Level 2 of fair value hierarchy (31 December 2017: USD 214 million).

At 31 December 2018 and 2017, there were no material trade accounts receivable which were overdue or individually determined to be impaired.

The average credit period on sales of other products and services for the year ended 31 December 2018 was 23 days (2017: 23 days). No interest was charged on these receivables.

Included in the Group's other receivables as at 31 December 2018 were debtors with a carrying value of USD 29 million (31 December 2017: USD 34 million) that were past due but not impaired. Management of the Group believes that these amounts are recoverable in full.

The Group did not hold any collateral for accounts receivable balances.

Ageing of other receivables past due but not impaired was as follows:

	At 31 December 2018	At 31 December 2017
Less than 180 days	24	25
180-365 days	5	9
	29	**34**

Movement in the allowance for expected credit losses was as follows:

	At 31 December 2018	At 31 December 2017
Balance at beginning of the year	**92**	**81**
Change in allowance	5	16
Accounts receivable written-off	(12)	(9)
Effect of translation to presentation currency	(15)	4
Balance at end of the year	**70**	**92**

19. CASH AND CASH EQUIVALENTS

	At 31 December 2018	At 31 December 2017
Current accounts		
- USD	398	334
- RUB	49	76
- EUR	13	10
- other	64	14
Bank deposits		
- USD	850	290
- EUR	–	17
- other	10	105
Restricted cash and cash equivalents	–	2
Other cash and cash equivalents	4	4
Total	**1,388**	**852**

Bank deposits

Interest rate on USD-denominated deposits held in banks was in the range from 1.70% to 3.95% (31 December 2017: from 1.07% to 2.29%) per annum. Interest rate on EUR-denominated deposits held in banks at 31 December 2017 was 0.30% per annum. Interest rate on deposits held in banks denominated in other currencies was in the range from 0.75% to 2.29% (31 December 2017: from 0.97% to 1.10%) per annum.

20. DISPOSAL OF SUBSIDIARIES

On 6 April 2017, the Group sold its interest in a subsidiary which owns real estate for a consideration of USD 113 million. Proceeds from disposal of the subsidiary in the amount of USD 95 million were recognised in the consolidated statement of cash flows, net of disposed cash and cash equivalents of USD 16 million and transaction costs of USD 2 million. Gain on disposal in the amount of USD 16 million was recognised in the consolidated income statement.

21. SHARE CAPITAL

Authorised and issued ordinary shares

As at 31 December 2018 and 31 December 2017 the Group's number of authorised and issued ordinary shares was 158,245,476.

Earnings per share

	For the year ended 31 December 2018	For the year ended 31 December 2017
Basic earnings per share (US Dollars per share):	19.5	13.5

The earnings and weighted average number of shares used in the calculation of earnings per share are as follows:

	For the year ended 31 December 2018	For the year ended 31 December 2017
Profit for the year attributable to shareholders of the parent company	3,085	2,129

Weighted average number of shares used in the calculation of basic and diluted earnings per share for the year ended 31 December 2018 and for the year ended 31 December 2017 was 158,245,476 shares.

As at 31 December 2018 and 31 December 2017, the Group had no securities, which would have a dilutive effect on earnings per share of ordinary stock.

22. NON-CONTROLLING INTEREST

In May 2017 the Group sold a 2.66% share in Bystrinskoye project for USD 21 million to Highland Fund. In October 2017 the Group sold a 36.66% share in Bystrinskoye project for USD 275 million to a related party.

At 31 December 2018 and 31 December 2017 aggregate financial information relating to the subsidiary, LLC "GRK "Bystrinskoye", that has material non-controlling interest, before any intra-group eliminations, is presented below:

	At 31 December 2018	At 31 December 2017
Non-current assets	1,258	1,281
Current assets	195	117
Non-current liabilities	(790)	(593)
Current liabilities	(139)	(156)
Net assets	**524**	**649**
Net assets attributable to non-controlling interest	262	325

	For the year ended 31 December 2018	For the year ended 31 December 2017
Net loss for the year	(61)	(32)
Other comprehensive (loss)/income for the year	(104)	31
Total comprehensive loss for the year	**(165)**	**(1)**
Loss attributable to non-controlling interest	(31)	(6)
Other comprehensive (loss)/income attributable to non-controlling interest	(52)	5

	For the year ended 31 December 2018	For the year ended 31 December 2017
Cash flows from/(used in) operating activities	72	(42)
Cash flows used in investing activities	(190)	(423)
Cash flows from financing activities	142	458
Net increase/(decrease) in cash and cash equivalents	**24**	**(7)**

23. LOANS AND BORROWINGS

	Currency	Fixed or floating interest rate	Average nominal rate during the yearended 31 December 2018, %	Maturity	At 31 December 2018	At 31 December 2017
Unsecured loans	USD	floating	3.45%	2019-2023	3,837	2,898
	RUB	fixed	8.30%	2021	864	1,042
	EUR	floating	0.85%	2019-2028	19	4
Secured loans	USD	floating	5.75%	2018	–	582
	RUB	fixed	9.75%	2021-2022	9	34
Total loans					**4,729**	**4,560**
Corporate bonds	USD	fixed	5.24%	2020-2023	3,472	4,206
	RUB	fixed	11.60%	2026	216	259
					3,688	**4,465**
Finance leasing	EUR	fixed	7.47%	2025-2026	19	23
	USD	fixed	5.35%	2019	2	4
	ZAR	floating	12.08%	2020	1	1
					22	**28**
Total					**8,439**	**9,053**
Less: current portion due within twelve months and **presented as short-term loans and borrowings**					(215)	(817)
Long-term loans and borrowings					**8,224**	**8,236**

The Group is obliged to comply with a number of restrictive financial and other covenants, including maintaining certain financial ratios and restrictions on pledging and disposal of certain assets.

Changes in loans and borrowings, including interest, for the year ended 31 December 2018 consist of changes from financing cash flows in the amount of USD (934) million, effect of changes in foreign exchange rates of USD (230) million and other non-cash changes of USD 542 million (for the year ended 31 December 2017: changes from financing cash flows in the amount of USD 441 million, effect of changes in foreign exchange rates of USD 103 million and other non-cash changes of USD 667 million).

At 31 December 2018 loans were secured by property, plant and equipment with a carrying amount of USD 8 million (31 December 2017: USD 15 million). At 31 December 2017 100% shares of the Group's subsidiary LLC "GRK "Bystrinskoye" were under pledge.

24. EMPLOYEE BENEFIT OBLIGATIONS

	At 31 December 2018	At 31 December 2017
Accrual for annual leave	177	203
Wages and salaries	147	168
Other	22	22
Total obligations	**346**	**393**
Less: non-current obligations	(39)	(16)
Current obligations	**307**	**377**

Defined contribution plans

Amounts recognised within continuing operations in the consolidated income statement in respect of defined contribution plans were as follows:

	For the year ended 31 December 2018	For the year ended 31 December 2017
Pension Fund of the Russian Federation	278	311
Mutual accumulated pension plan	7	8
Other	7	5
Total	**292**	**324**

25. PROVISIONS

	At 31 December 2018	At 31 December 2017
Current provisions		
Decommissioning obligations	21	26
Provision for social commitments	53	28
Tax provision	2	134
Other provisions	1	1
Total current provisions	**77**	**189**
Non-current provisions		
Decommissioning obligations	316	396
Provision for social commitments	49	68
Total non-current provisions	**365**	**464**
Total	**442**	**653**

	Decommissioning	Social commitments	Tax	Other	Total
Balance at 1 January 2017	**397**	**62**	**124**	**41**	**624**
Provision accrued	6	42	2	2	**52**
Settlements during the year	–	(21)	(2)	(41)	**(64)**
Change in estimates	(38)	4	–	–	**(34)**
Unwinding of discount	35	6	–	–	**41**
Effect of translation to presentation currency	22	3	10	(1)	**34**
Balance at 31 December 2017	**422**	**96**	**134**	**1**	**653**
Provision accrued	–	47	21	2	**70**
Settlements during the year	(22)	(29)	(144)	(3)	**(198)**
Change in estimate	(21)	(2)	–	–	**(23)**
Unwinding of discount	29	5	–	–	**34**
Effect of translation to presentation currency	(71)	(15)	(9)	1	**(94)**
Balance at 31 December 2018	**337**	**102**	**2**	**1**	**442**

Decommissioning obligations

Key assumptions used in estimation of decommissioning obligations were as follows:

	At 31 December 2018	At 31 December 2017
Discount rates Russian entities	7.7% - 8.9%	6.9% - 9,1%
Discount rates non-Russian entities	3% - 9%	3% - 8%
Expected closure date of mines	up to 2068	up to 2071
Expected inflation over the period from 2019 to 2038	3.0% - 4.5%	2.9% - 4.9%
Expected inflation over the period from 2039 onwards	2.9% - 3.0%	2.9%

Present value of expected cost to be incurred for settlement of decommissioning obligations was as follows:

	At 31 December 2018	At 31 December 2017
Due from second to fifth year	149	202
Due from sixth to tenth year	24	23
Due from eleventh to fifteenth year	27	39
Due from sixteenth to twentieth year	86	77
Due thereafter	30	55
Total	**316**	**396**

Social commitments

In 2010 the Group entered into multilateral agreements with the Government of the Russian Federation and the Krasnoyarsk Regional Government for construction of pre-schools and other items of social infrastructure in Norilsk and Dudinka till 2020, and for resettlement of families currently residing in Norilsk and Dudinka to other Russian regions with more favorable living conditions till 2020. In 2017 the Group entered into agreements with the Zabaikalsky Regional Government for construction and development of industrial, social and other infrastructure till 2026. The provisions represent present value of the best estimate of the future outflow of economic benefits to settle these obligations.

26. TRADE AND OTHER PAYABLES

	At 31 December 2018	At 31 December 2017
Financial liabilities		
Trade payables	357	426
Payables for acquisition of property, plant and equipment	192	186
Other creditors	110	140
Total financial liabilities	**659**	**752**
Non-financial liabilities		
Advances received on contracts with customers	892	31
Total non-financial liabilities	**892**	**31**
Total	**1,551**	**783**

The maturity profile of the Group's financial liabilities was as follows:

	At 31 December 2018	At 31 December 2017
Due within one month	183	194
Due from one to three months	192	244
Due from three to twelve months	284	314
Total	**659**	**752**

27. DIVIDENDS

On 19 September 2018, the Extraordinary General shareholders' meeting declared interim dividends in respect of the 6 months ended 30 June 2018 in the amount of RUB 776.02 (USD 11.45) per share with the total amount of USD 1,813 million. The dividends were paid to the shareholders in October 2018 in the amount of USD 1,841 million recognised in the consolidated cash flow statement, using prevailing RUB/USD rates on the payment dates.

On 28 June 2018, the Annual General shareholders' meeting declared dividends for the year ended 31 December 2017 in the amount of RUB 607.98 (USD 9.63) per share with the total amount of USD 1,524 million. The dividends were paid to the shareholders in July 2018 in the amount of USD 1,527 million recognised in the consolidated cash flow statement, using prevailing RUB/USD rates on the payment dates.

On 29 September 2017, the Extraordinary General shareholders' meeting declared interim dividends in respect of the 6 months ended 30 June 2017 in the amount of RUB 224.20 (USD 3.84) per share with the total amount of USD 607 million. The dividends were paid to the shareholders in October 2017 in the amount of USD 610 million recognised in the consolidated cash flow statement, using prevailing RUB/USD rates on the payment dates.

On 9 June 2017, the Annual General shareholders' meeting declared dividends for the year ended 31 December 2016 in the amount of RUB 446.10 (USD 7.83) per share with the total amount of USD 1,239 million. The dividends were paid to the shareholders in July 2017 in the amount of USD 1,188 million recognised in the consolidated cash flow statement, using prevailing RUB/USD rates on the payment dates.

On 16 December 2016, the Extraordinary General shareholders' meeting declared interim dividends in respect of the 9 months ended 30 September 2016 in the amount of RUB 444.25 (USD 7.21) per share with the total amount of USD 1,141 million. The dividends were paid to the shareholders in January 2017 in the amount of USD 1,172 million recognised in the consolidated cash flow statement, using prevailing RUB/USD rates on the payment dates.

28. RELATED PARTIES TRANSACTIONS AND OUTSTANDING BALANCES

Related parties include major shareholders and entities under their ownership and control, Nkomati joint operation and key management personnel. The Group defines major shareholders as shareholders, which have significant influence over the Group activities. The Company and its subsidiaries, in the ordinary course of their business, enter into various sale, purchase and service transactions with related parties. Transactions between the Company and its subsidiaries, which are related parties of the Company, have been eliminated on consolidation and are not disclosed in this note. Details of transactions between the Group and other related parties are disclosed below.

	Sale of goods and services and participating shares		Purchase of assets and services and other operating expenses	
Transactions with related parties	For the year ended 31 December 2018	For the year ended 31 December 2017	For the year ended 31 December 2018	For the year ended 31 December 2017
Entities under ownership and control of the Group's major shareholders	7	279	64	115
Joint operation of the Group	–	1	86	107
Total	**7**	**280**	**150**	**222**

Outstanding balances with related parties	Accounts receivable		Accounts payable	
	At 31 December 2018	At 31 December 2017	At 31 December 2018	At 31 December 2017
Entities under ownership and control of the Group's major shareholders	1	–	1	2
Joint operation of the Group	8	–	3	9
Total	**9**	**–**	**4**	**11**

Terms and conditions of transactions with related parties

Sales to and purchases from related parties of electricity, heat energy and natural gas supply were made at prices established by the Federal Tariff Service, government regulator responsible for establishing and monitoring prices on the utility and telecommunication markets in the Russian Federation.

Compensation of key management personnel

Key management personnel of the Group consists of members of the Management Board and the Board of Directors. For the year ended 31 December 2018 remuneration of key management personnel of the Group included salary and performance bonuses amounted to USD 109 million (for the year ended 31 December 2017: USD 103 million).

29. COMMITMENTS

Capital commitments

At 31 December 2018, contractual capital commitments amounted to USD 544 million (31 December 2017: USD 801 million).

Operating leases

The land plots in the Russian Federation where the Group's production facilities are located are owned by the state. The Group leases land through operating lease agreements, which expire in various years through 2099. According to the terms of lease agreements the rent rate is revised periodically subject to the decision of the relevant local authorities.

At 31 December 2018, thirteen aircraft lease agreements (31 December 2017: ten) were in effect. The lease agreements have an average life of twelve (31 December 2017: seven) years with a renewal option at the end of the term and place no restrictions upon lessees by entering into these agreements.

Future minimum lease payments due under non-cancellable operating lease agreements for aircrafts were as follows:

	At 31 December 2018	At 31 December 2017
Due within one year	32	38
From one to five years	95	97
Thereafter	95	18
Total	**222**	**153**

Future minimum lease payments due under non-cancellable operating lease agreements for land, buildings and other assets were as follows:

	At 31 December 2018	At 31 December 2017
Due within one year	44	36
From one to five years	128	103
Thereafter	217	138
Total	**389**	**277**

Social commitments

The Group contributes to mandatory and voluntary social programs and maintains social assets in the locations where it has its main operating facilities. The Group's social assets as well as local social programs benefit the community at large and are not normally restricted to the Group's employees.

The Group's commitments are funded from its own cash resources.

30. CONTINGENCIES

Litigation

At 31 December 2018 the Group is involved in other legal disputes in the ordinary course of its operations, with the probability of their unfavorable resolution being assessed as possible. At 31 December 2018, total claims under unresolved litigation amounted to approximately USD 13 million (31 December 2017: USD 25 million).

Taxation contingencies in the Russian Federation

The Russian Federation currently has a number of laws related to various taxes imposed by both federal and regional governmental authorities. Applicable taxes include value-added (VAT), corporate income tax, mandatory social security contributions, together with others. Tax returns, together with other legal compliance areas (for example, customs and currency control matters), are subject to review and investigation by government authorities, which are authorised by law to impose severe fines, penalties and interest charges. Generally, tax returns remain open and subject to inspection for a period of three years following the fiscal year.

While management of the Group believes that in the financial statements of the Group it has provided adequate reserves for tax liabilities based on its interpretation of current and previous legislation, the risk remains that tax authorities in the Russian Federation could take differing positions with regard to interpretive issues. This uncertainty may expose the Group to additional taxation, fines and penalties.

Transfer pricing legislation enacted in the Russian Federation starting from 1 January 2012 provides for major modifications making local transfer pricing rules closer to OECD guidelines, but creating additional uncertainty in practical application of tax legislation in certain circumstances.

These transfer pricing rules provide for an obligation for the taxpayers to prepare transfer pricing documentation with respect to controlled transactions and prescribe the basis and mechanisms for accruing additional taxes and interest in case prices in the controlled transactions differ from the market level.

Currently there is lack of practice of applying the transfer pricing rules by the tax authorities and courts, however, it is anticipated that transfer pricing arrangements will be subject to very close scrutiny potentially having effect on the financial results and the financial position of the Group.

In 2017 the Russian tax authorities completed a transfer pricing audit of the Group's metal export sales for the year ended 31 December 2013, which did not result in significant additional tax charges.

Environmental matters

The Group is subject to extensive federal, state and local environmental controls and regulations in the countries in which it operates. The Group's operations involve pollutant emissions to air and water objects as well as formation and disposal of production wastes.

Management of the Group believes that the Group is in compliance with all current existing environmental legislation in the countries in which it operates. However, environmental laws and regulations continue to evolve. The Group is unable to predict the timing or extent to which those laws and regulations may change. Such change, if it occurs, may require that the Group modernise technology to meet more stringent standards.

Russian Federation risk

As an emerging market, the Russian Federation does not possess a fully developed business and regulatory infrastructure including stable banking and judicial systems which would generally exist in a more mature market economy. The economy of the Russian Federation is characterised by a currency that is not freely convertible outside the country, currency controls, low liquidity levels for debt and equity markets, and continuing inflation. As a result, operations in the Russian Federation involve risks that are not typically associated with those in more developed markets. Stability and success of Russian economy and the Group's business mainly depend on the effectiveness of economic measures undertaken by the government as well as the development of legal system.

Starting 2014, the United States of America, the European Union and some other countries have imposed and expanded economic sanctions against a number of Russian individuals and legal entities. The imposition of the sanctions has led to increased economic uncertainty, including more volatile equity markets, a depreciation of the Russian rouble, a reduction in both local and foreign direct investment inflows and certain restrictions for operations with individuals and legal entities under sanctions, including financing and investment activities. Management assesses the changes in the Russian business environment did not significantly affect the operations, financial results and the financial position of the Group as of the date of issue of these consolidated financial statements. The longer-term effects of the imposed and possible additional sanctions are difficult to determine.

31. FINANCIAL RISK MANAGEMENT

Capital risk management

The Group manages its capital structure in order to safeguard the Group's ability to continue as a going concern and to maximise the return to shareholders through the optimisation of debt and equity balance.

The capital structure of the Group consists of debt, which includes long and short-term borrowings, equity attributable to shareholders of the parent company, comprising share capital, other reserves and retained earnings.

Management of the Group regularly reviews its level of leverage, calculated as the ratio of Net Debt to EBITDA, to ensure that it is in line with the Group's financial policy aimed at preserving investment grade credit ratings.

The Company maintains BBB- investment grade ratings, assigned by rating agencies Fitch and S&P's. On 29 January 2018 Moody's rating agency upgraded the Company's rating from Ba1 to the investment grade level Baa3 and changed the outlook from stable to positive.

Financial risk factors and risk management structure

In the normal course of its operations, the Group is exposed to a variety of financial risks: market risk (including interest rate and currency risk), credit risk and liquidity risk. The Group has an explicit risk management structure aligned with internal control procedures that enable it to assess, evaluate and monitor the Group's exposure to such risks. The Group has adopted and documented policies covering specific areas, such as market risk management system, credit risk management system, liquidity risk management system and use of derivative financial instruments.

Interest rate risk

Interest rate risk is the risk that changes in interest rates will adversely impact the financial results of the Group. The Group's interest rate risk arises from long- and short-term borrowings at floating rates.

The Group performs thorough analysis of its interest rate risk exposure regularly. Various scenarios are simulated. The table below details the financial results sensitivity to a 2 percentage points increase in floating interest rate. The sensitivity analysis is prepared assuming that the amount of loans and borrowings at floating rates outstanding at the reporting date was outstanding for the whole year.

	2% floating rate increase impact	
	For the year ended 31 December 2018	For the year ended 31 December 2017
Loss before tax	77	70

Changes in interest rates impact the value of cross-currency interest swap as follows: 1% increase in RUB interest rate results in a loss of USD 20 million, 1% decrease in USD interest rate results in a loss of USD 23 million. Management believes that the Group's exposure to interest rate risk fluctuations does not require additional hedging activities.

Currency risk

Currency risk is the risk that the fair value or future cash flows of a financial instrument denominated in foreign currency will fluctuate because of changes in exchange rates.

The major part of the Group's revenue and related trade accounts receivable are denominated in US dollars and therefore the Group is exposed primarily to USD currency risk. Foreign exchange risk arising from other currencies is assessed by management of the Group as immaterial.

The carrying amounts of monetary assets and liabilities denominated in foreign currencies other than functional currencies of the individual Group entities at 31 December 2018 and 31 December 2017 were as follows:

	At 31 December 2018			At 31 December 2017		
	USD	EUR	Other currencies	USD	EUR	Other currencies
Cash and cash equivalents	1,234	13	74	609	28	121
Trade and other receivables	265	3	4	384	4	4
Other assets	380	73	8	141	297	15
Total assets	**1,879**	**89**	**86**	**1,134**	**329**	**140**
Trade and other payables	249	114	10	290	80	14
Loans and borrowings	7,308	19	3	7,684	5	–
Other liabilities	160	19	–	136	23	–
Total liabilities	**7,717**	**152**	**13**	**8,110**	**108**	**14**

Currency risk is monitored on a monthly basis utilising sensitivity analysis to assess if the risk of a potential loss is at an acceptable level. The Group estimates the financial impact of exchange rate fluctuations on USD-denominated monetary assets and liabilities in respect of the Group entities where functional currency is the Russian Rouble, as follows:

	US Dollar 20% strengthening against Russian Rouble	
	For the year ended 31 December 2018	For the year ended 31 December 2017
Loss before tax	1,344	1,395

Given that the Group's exposure to currency risk for the monetary assets and liabilities is offset by the revenue denominated in USD, management believes that the Group's exposure to currency risk is acceptable. The Group does not apply hedge instruments. The Group applies derivative financial instruments including cross-currency interest swaps in order to manage currency risk by matching cash flows from revenue denominated in USD and financial liabilities denominated in RUB.

Credit risk

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in a financial loss to the Group. Credit risk arises from cash and cash equivalents, bank deposits as well as credit exposures to customers, including outstanding uncollateralised trade and other receivables. The Group's exposure to credit risk is continuously monitored and controlled.

Before dealing with a new counterparty, management assesses the creditworthiness of a potential customer or a financial institution. If the counterparty is rated by major independent credit-rating agencies, this rating is used to evaluate creditworthiness; otherwise it is evaluated using an analysis of the latest available financial statements of the counterparty and other publically available information.

The outstanding balances with ten major counterparties are presented below. The banks have a minimum of BB+ credit rating.

	Outstanding balance	
	At 31 December 2018	At 31 December 2017
Cash and cash equivalents		
Bank A	417	224
Bank B	402	143
Bank C	214	125
Bank D	75	102
Bank E	64	80
Total	**1,172**	**674**

	Outstanding balance	
	At 31 December 2018	At 31 December 2017
Trade and other receivables		
Company A	50	66
Company B	38	41
Company C	34	23
Company D	20	18
Company E	15	16
Total	**157**	**164**

The Group is not economically dependent on a limited number of customers because the majority of its products are highly liquid and traded on the world commodity markets. Metal and other sales to the Group's customers are presented below:

	For the year ended 31 December 2018			For the year ended 31 December 2017		
	Number of customers	Turnover USD million	%	Number of customers	Turnover USD million	%
Largest customer	1	1,564	13	1	1,319	14
Next 9 largest customers	9	3,461	30	9	2,936	32
Total	**10**	**5,025**	**43**	**10**	**4,255**	**46**
Next 10 largest customers	10	1,965	17	10	1,494	16
Total	**20**	**6,990**	**60**	**20**	**5,749**	**62**
Remaining customers		4,680	40		3,397	38
Total		**11,670**	**100**		**9,146**	**100**

Management of the Group believes that with the exception of the bank balances indicated above there is no significant concentration of credit risk.

The following table provides information about the exposure to credit risk for cash and cash equivalents, loans, irrevocable letters of credit, bank deposits and trade and other receivables:

	At 31 December 2018	At 31 December 2017
Cash and cash equivalents	1,388	852
Loans, trade and other receivables	394	518
Irrevocable letters of credit	203	248
Bank deposits	91	96

Liquidity risk
Liquidity risk is the risk that the Group will not be able to settle all liabilities as they fall due.

The Group has a well-developed liquidity risk management system to exercise control over its short-, medium- and long-term funding. The Group manages liquidity risk by maintaining adequate reserves, committed and uncommitted banking facilities and reserve borrowing facilities. Management continuously monitors rolling cash flow forecasts and performs analysis of maturity profiles of financial assets and liabilities, and undertakes detailed annual budgeting procedures.

The following table contains the maturity profile of the Group's borrowings and derivatives (maturity profiles for trade and other payables are presented in note 26) based on contractual undiscounted payments, including interest:

At 31 December 2018	Total	Due within one month	Due from one to three months	Due from three to twelve months	Due in the second year	Due in the third year	Due in the fourth year	Due in the fifth year	Due thereafter
Fixed rate bank loans and borrowings									
Principal	4,595	1	–	4	987	871	1,507	1,003	222
Interest	1,022	–	30	249	280	213	142	46	62
	5,617	1	30	253	1,267	1,084	1,649	1,049	284
Floating rate bank loans and borrowings									
Principal	3,883	5	–	205	957	1,202	1,302	202	10
Interest	363	4	21	102	123	77	33	3	–
	4,246	9	21	307	1,080	1,279	1,335	205	10
Total	9,863	10	51	560	2,347	2,363	2,984	1,254	294
Cross-currency interest rate swap									
Payable	1,008	–	10	31	41	926	–	–	–
Receivable	(1,067)	–	(18)	(54)	(72)	(923)			
	(59)	–	(8)	(23)	(31)	3	–	–	–

At 31 December 2017	Total	Due within one month	Due from one to three months	Due from three to twelve months	Due in the second year	Due in the third year	Due in the fourth year	Due in the fifth year	Due thereafter
Fixed rate bank loans and borrowings									
Principal	5,586	1	1	766	6	988	1,049	1,506	1,269
Interest	1,189	–	36	239	258	257	188	106	105
	6,775	1	37	1,005	264	1,245	1,237	1,612	1,374
Floating rate bank loans and borrowings									
Principal	3,510	9	–	29	236	996	1,028	808	404
Interest	246	5	8	51	65	52	33	20	12
	3,756	14	8	80	301	1,048	1,061	828	416
Total	10,531	15	45	1,085	565	2,293	2,298	2,440	1,790

At 31 December 2018 the Group had available committed financing facilities for the management of its day to day liquidity requirements of USD 4,290 million (31 December 2017: USD 3,554 million).

32. FAIR VALUE OF FINANCIAL INSTRUMENTS

Management believes that the carrying value of financial instruments such as cash and cash equivalents (refer to note 19), other financial assets (refer to note 15), trade and other short-term accounts receivable (refer to note 18) and current accounts payable (refer to note 26) approximates to their fair value or may not significantly differ from it. Derivative financial instruments measured at fair value through profit or loss include cross-currency interest rate swap, Level 2 of fair value hierarchy. Other long-term liabilities classified as measured at fair value through profit or loss include a liability on the execution of a put option related to transactions with non-controlling interest owners, Level 3 of fair value hierarchy.

Certain financial instruments, such as finance leases obligations, were excluded from fair value analysis due to their insignificance and management believes that their carrying value either approximates or is not significantly different from their fair value.

Financial instruments that are measured at fair value subsequent to initial recognition, are grouped into Levels 1 to 3 of fair value hierarchy based on the degree to which their fair value is observable as follows:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the assets or liability, either directly or indirectly; and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data.

The information below presents financial instruments not measured at fair value, including loans and borrowings, trade and other long-term payables.

	At 31 December 2018		At 31 December 2017	
	Carrying value	Fair value Level 1	Carrying value	Fair value Level 1
Fixed rate corporate bonds	3,688	3,705	4,465	4,685
Total	**3,688**	**3,705**	**4,465**	**4,685**
Loans and borrowings, including:	Carrying value	Fair value Level 2	Carrying value	Fair value Level 2
Floating rate loans and borrowings	3,856	3,654	3,484	3,439
Fixed rate loans and borrowings	873	861	1,076	1,055
Total	**4,729**	**4,515**	**4,560**	**4,494**
	Carrying value	Fair value Level 2	Carrying value	Fair value Level 2
Trade and other long-term payables	200	210	402	440
Total	**200**	**210**	**402**	**440**

The fair value of financial liabilities presented in table above is determined as follows:

- the fair value of corporate bonds was determined based on market quotations existing at the reporting dates;
- the fair value of floating rate and fixed rate loans and borrowings at 31 December 2018 was calculated based on the present value of future cash flows (principal and interest), discounted at the best management estimation of market rates, taking into consideration currency of the loan, expected maturity and risks attributable to the Group existing at the reporting date;
- the fair value of trade and other long-term payables at 31 December 2018 was calculated based on the present value of future cash flows, discounted at the best management estimation of market rates.

The fair value of cross-currency interest rate swap is calculated as the present value of future cash flows discounted at the interest rates applicable to the currencies of the corresponding cash flows and available at the reporting date. The fair value is subject to a credit risk adjustment that reflects the credit risk of the Group and of the counterparty, which is calculated based on credit spreads derived from current tradeable financial instruments.

33. INVESTMENTS IN SIGNIFICANT SUBSIDIARIES

			Effective % held	
Subsidiaries by operating segments	**Country**	**Nature of business**	**At 31 December 2018**	**At 31 December 2017**
GMK Group				
JSC "Norilsky Kombinat"	Russian Federation	Rental of property	100	100
JSC "Taimyrgaz"	Russian Federation	Gas extraction	100	100
JSC "Norilskgazprom"	Russian Federation	Gas extraction	100	100
JSC "Norilsktransgaz"	Russian Federation	Gas transportation	100	100
JSC "Taimyrenergo"	Russian Federation	Rental of equipment	100	100

Subsidiaries by operating segments	Country	Nature of business	Effective % held	
			At 31 December 2018	At 31 December 2017
JSC "NTEK"	Russian Federation	Electricity production and distribution	100	100
LLC "ZSC"	Russian Federation	Construction	100	100
LLC "Norilsknickelremont"	Russian Federation	Repairs	100	100
LLC "Norilskyi obespechivaushyi complex"	Russian Federation	Production of spare parts	100	100
LLC "Medvezhyi ruchey"	Russian Federation	Mining	100	100
KGMK GROUP				
JSC "Kolskaya GMK"	Russian Federation	Mining and metallurgy	100	100
LLC "Pechengastroy"	Russian Federation	Repairs	100	100
Norilsk Nickel Harjavalta				
Norilsk Nickel Harjavalta OY	Finland	Metallurgy	100	100
GRK Bystrinskoye				
LLC "GRK "Bystrinskoye"	Russian Federation	Mining	50.01	50.01
LLC "Vostokgeologiya"	Russian Federation	Geological works and construction	100	100
Other non-metallurgical				
Metal Trade Overseas A.G.	Switzerland	Distribution	100	100
Norilsk Nickel (Asia) Limited	Hong Kong	Distribution	100	100
Norilsk Nickel USA, Inc.	USA	Distribution	100	100
LLC "Institut Gypronickel"	Russian Federation	Research	100	100
JSC "TTK"	Russian Federation	Supplier of fuel	100	100
JSC "ERP"	Russian Federation	River shipping operations	100	100
LLC "Aeroport Norilsk"	Russian Federation	Airport	100	100
JSC "AK "NordStar"	Russian Federation	Aircompany	100	100

Joint operations by operating segments	Country	Nature of business	Effective % held	
			At 31 December 2018	At 31 December 2017
Other mining				
Nkomati Nickel Mine	Republic of South Africa	Mining	50	50

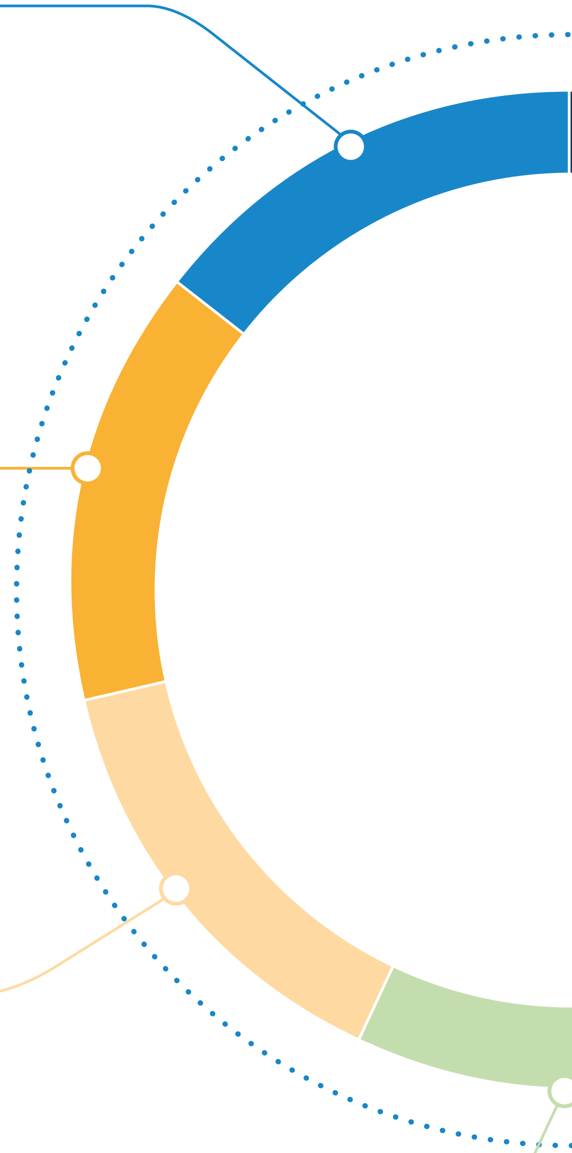
34. EVENTS SUBSEQUENT TO THE REPORTING DATE

On 12 February 2019 Moody's rating agency upgraded the Company's credit rating to the Baa2 level with stable outlook.

10

Additional information

The Group structure: main assets[1]



MINING AND METALLURGICAL

- Polar Division
- Medvezhy Ruchey *(100% stake)*
- Kola MMC *(100% stake)*
- GRK Bystrinskoe *(50,01% stake)*
- Norilsk Nickel Harjavalta Oy *(Finland, 100%)*
- Nkomati Nickel Mine *(South Africa, 50% stake)*

GEOLOGICAL EXPLORATION

- Norilskgeologiya *(100% stake)*
- Vostokgeologiya *(100% stake)*
- Intergeoproekt *(100% stake)*

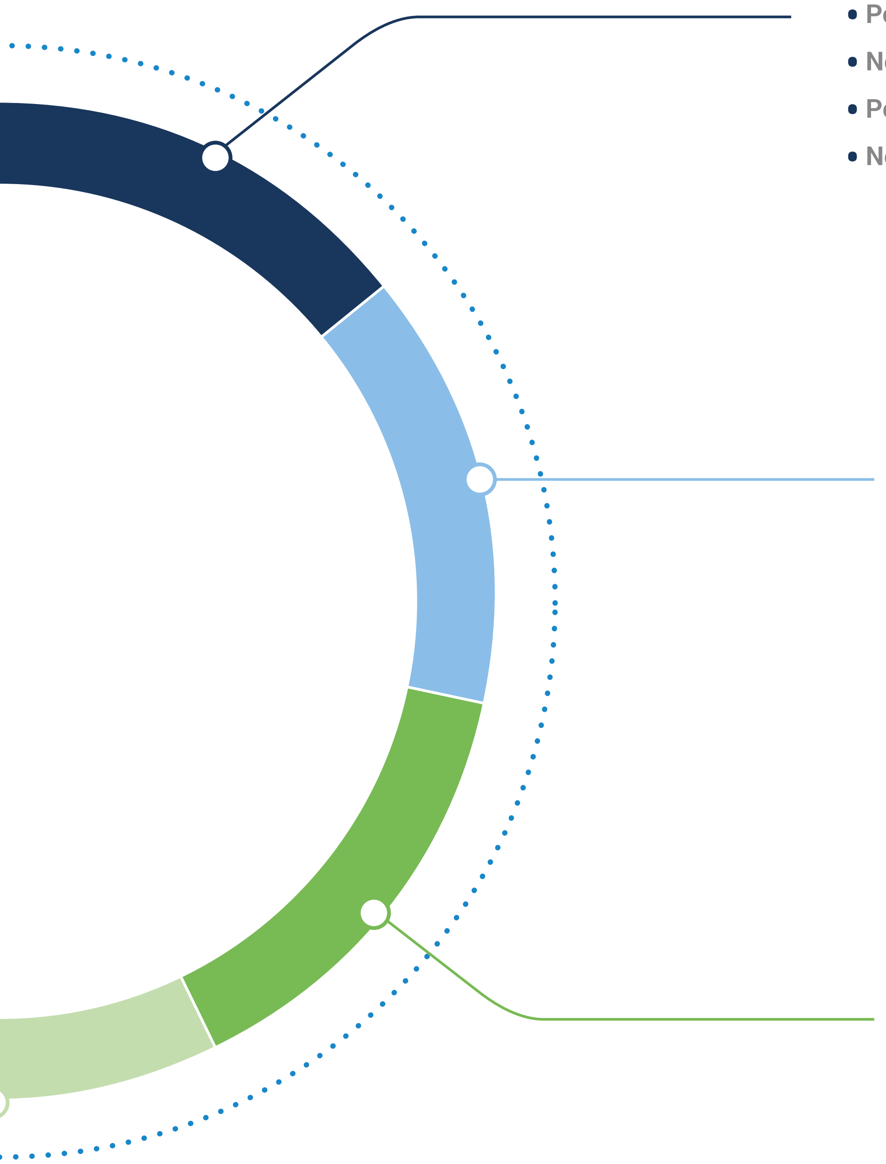
ENERGY

- Norilskenergo Division
- Taimyrenergo *(100% stake)*
- NTEK *(100% stake)*
- Norilskgazprom *(100% stake)*
- Taimyrgaz *(100% stake)*
- TTK *(100% stake)*
- Norilsktransgaz *(100% stake)*
- Arctic-Energo *(100% stake)*

SALES AND DISTRIBUTION

- NORMETIMPEX *(100% stake)*
- Metal Trade Overseas SA *(Switzerland, 100% stake)*
- Norilsk Nickel Asia Limited *(Hong Kong, 100% stake)*
- Norilsk Nickel USA Inc. *(USA, 100% stake)*
- Norilsk Nickel Metal Trading Co., Ltd. *(China, 100% stake)*

[1] *Ownership in subsidiaries (direct and indirect) is indicated from the authorised capital.*



SUPPORTING BUSINESS

- Norilsk Support Complex *(100% stake)*
- Polar Construction Company *(100% stake)*
- Norilsknickelremont *(100% stake)*
- Pechengastroy *(100% stake)*
- Nornickel – Shared Services Centre *(100% stake)*

RESEARCH

- Gipronickel Institute *(100% stake)*

TRANSPORT

- Polar Transport Division
- Murmansk Transport Division
- Arkhangelsk Transport Division
- Arkhangelsk Transport Division
- Bystrinsky Transport Division
- Yenisey River Shipping Company *(81,99% stake)*
- Krasnoyarsk River Port *(89,3% stake)*
- Lesosibirsk Port *(51% stake)*
- Norilsk Airport *(100% stake)*
- NordStar Airlines *(100% stake)*
- Norilsk Avia *(100% stake)*

Performance indicators for 10 years

Norilsk Nickel Group saleable metals production	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
NORILSK NICKEL GROUP[1]										
Nickel, t, thereof	**279,889**	**295,840**	**295,098**	**300,340**	**285,292**	**274,248**	**266,406**	**235,749**	**217,112**	**218,770**
from own Russian feed	232,813	235,518	234,906	223,153	219,273	223,224	220,675	196,809	210,131	216,856
from 3d parties feed	47,076	60,322	60,192	77,187	66,019	51,024	45,731	38,940	6,981	1,914
Copper, t, thereof	**400,778**	**388,027**	**377,944**	**363,764**	**371,063**	**368,008**	**369,426**	**360,217**	**401,081**	**473,654**
from own Russian feed	382,443	365,698	362,854	344,226	345,737	345,897	352,766	344,482	397,774	473,515
from 3d parties feed	18,335	22,329	15,090	19,538	25,326	22,111	16,660	15,735	3,307	139
Palladium, koz, thereof	**2,794**	**2,855**	**2,806**	**2,732**	**2,662**	**2,752**	**2,689**	**2,618**	**2,780**	**2,729**
from own Russian feed	2,676	2,723	2,704	2,624	2,529	2,582	2,575	2,526	2,728	2,729
from 3d parties feed	118	132	102	108	133	170	114	92	52	0
Platinum, koz, thereof	**658**	**692**	**696**	**683**	**650**	**662**	**656**	**644**	**670**	**653**
from own Russian feed	636	663	672	658	604	595	610	610	650	653
from 3d parties feed	22	29	24	25	46	67	46	34	20	0
POLAR DIVISION AND KOLA MMC (RUSSIA)										
Nickel, t	**232,813**	**235,518**	**237,227**	**233,632**	**231,798**	**228,438**	**222,016**	**182,095**	**157,396**	**158,005**
Polar division	124,250	124,200	124,000	124,000	122,700	122,390	96,916	50,860	0	0
Kola MMC, thereof	108,563	111,318	113,227	109,632	109,098	106,048	125,100	131,235	157,396	158,005
from own Russian feed	108,563	111,318	110,906	99,153	96,573	100,834	123,335	126,937	155,110	157,519
from 3d parties feed	0	0	2,321	10,479	12,525	5,214	1,765	4,298	2,286	486
Copper, t	**382,443**	**365,698**	**363,460**	**352,466**	**359,102**	**354,943**	**355,707**	**350,619**	**387,640**	**436,201**
Polar division	323,705	309,320	303,940	295,610	296,760	297,552	292,632	280,347	306,859	353,131
Kola MMC, thereof	58,738	56,378	59,520	56,856	62,342	57,391	63,075	70,272	80,781	83,070
from own Russian feed	58,738	56,378	58,914	48,616	48,977	48,345	60,134	63,542	78,587	82,987
from 3d parties feed	0	0	606	8,240	13,365	9,046	2,941	6,730	2,194	83
Palladium, koz	**2,676**	**2,723**	**2,704**	**2,628**	**2,580**	**2,660**	**2,606**	**2,554**	**2,738**	**2,671**
Polar division	2,010	2,053	2,038	1,989	2,006	2,065	1,935	1,703	956	987
Kola MMC, thereof	666	670	666	639	574	595	671	851	1,782	1,684
from own Russian feed	666	670	666	635	523	517	640	815	1,737	1,684
from 3d parties feed	0	0	0	4	51	78	31	36	45	0
Platinum, koz	**636**	**663**	**672**	**660**	**627**	**627**	**622**	**622**	**660**	**642**
Polar division	505	529	536	529	504	500	488	449	259	260
Kola MMC, thereof	131	134	136	131	123	127	134	173	401	382
from own Russian feed	131	134	136	129	100	95	122	159	385	382
from 3d parties feed	0	0	0	2	23	32	12	14	16	0

Norilsk Nickel Group saleable metals production	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
GRK BYSTRINSKOE (RUSSIA, ZABAYKALSKY KRAI)[2]										
Copper, t	0	0	0	0	0	0	0	0	0	19,417
Gold, koz	0	0	0	0	0	0	0	0	0	90
Iron ore concentrate (66%), t	0	0	0	0	0	0	0	0	0	346
NORILSK NICKEL HARJAVALTA (FINLAND)										
Nickel, t, thereof	**28,452**	**49,159**	**48,525**	**45,518**	**44,252**	**42,603**	**43,479**	**53,654**	**59,716**	**60,765**
from own Russian feed	0	0	0	0	0	0	424	19,012	55,021	59,337
Copper, t, thereof	**4,983**	**11,279**	**5,681**	**1,006**	**6,549**	**10,629**	**13,048**	**9,598**	**13,441**	**18,036**
from own Russian feed	0	0	0	0	0	0	0	593	12,328	17,980
Palladium, koz, thereof	**18**	**48**	**34**	**21**	**39**	**74**	**78**	**64**	**42**	**58**
from own Russian feed	0	0	0	0	0	0	0	8	35	58
Platinum, koz, thereof	**5**	**15**	**12**	**9**	**16**	**31**	**33**	**22**	**10**	**11**
from own Russian feed	0	0	0	0	0	0	0	2	6	11
NORILSK NICKEL AUSTRALIA (AUSTRALIA)										
Nickel, t	1,223	0	0	8,975	2,826	0	0	0	0	0
NORILSK NICKEL TATI (BOTSWANA)[3]										
Nickel, t	17,401	11,163	9,346	12,215	6,416	3,207	911	0	0	0
Copper, t	13,352	11,050	8,803	10,292	5,412	2,436	671	0	0	0
Palladium, koz	100	84	68	83	43	18	5	0	0	0
Platinum, koz	17	14	12	14	7	4	1	0	0	0
NORILSK NICKEL NKOMATI (SOUTH AFRICA)[4]										
Nickel, t	3,005	5,525	5,815	9,624	11,920	11,359	11,350	8,486	8,006	6,597
Copper, t	1,436	3,082	2,927	4,594	5,034	4,938	5,301	4,007	4,504	3,055
Palladium, koz	11	23	24	32	46	48	53	40	46	33
Platinum, koz	3	7	9	12	20	19	20	15	20	13

1. *Total amounts may vary from the sum of numbers due to arithmetical rounding. The production results of Nkomati are not included in the total amounts of the Group.*
2. *Norilsk Nickel Group owns 50.01% of Bystrinsky GOK (Chita Copper Project). Production results are reported as metal contained in saleable concentrate on a 100% basis and are fully consolidated in the Group's total operating results. The hot commissioning of the project started on October 31, 2017.*
3. *The sale of the asset was closed on April 2, 2015.*
4. *Norilsk Nickel Group owns 50% of Nkomati. Production results are reported as metal contained in saleable concentrate on a 50% basis and are not consolidated in the Group's total operating results.*

Resources and reserves

Minerals reserves and resourses as at December 31, 2018[1]		Metal grade						Contained metal					
	Ore kt	Ni %	Cu %	Pd g/t	Pt g/t	Au g/t	6 PGM g/t	Ni kt	Cu kt	Pd koz	Pt koz	Au koz	6 PGM koz
TAIMYR PENINSULA													
Proven and probable reserves	**683,625**	**0.92**	**1.73**	**4.23**	**1.12**	**0.24**	**5.60**	**6,286**	**11,858**	**92,864**	**24,600**	**5,331**	**122,982**
Proven reserves													
Talnakh ore field, including	328,571	0.79	1.55	3.84	1.04	0.23	5.08	2,600	5,080	40,582	10,938	2,398	53,664
rich	51,627	2.52	3.10	6.25	1.30	0.23	7.89	1,299	1,603	10,380	2,156	385	13,100
cuprous	19,770	0.97	3.93	9.56	2.32	0.64	12.01	192	776	6,073	1,472	405	7,633
disseminated	257,174	0.43	1.05	2.92	0.88	0.19	3.98	1,109	2,701	24,129	7,310	1,608	32,931
Norilsk-1 deposit (disseminated ore)	21,628	0.35	0.51	3,95	1.58	0.18	5.82	76	110	2,744	1,101	122	4,045
Probable reserves													
Talnakh ore field, including	311,622	1.14	2.11	4.64	1.13	0.27	6.07	3,549	6,588	46,529	11,347	2,676	60,828
rich	79,629	2.90	3.95	7.11	1.40	0.26	9.05	2,308	3,145	18,199	3,581	664	23,160
cuprous	61,380	0.75	3.17	7.12	1.86	0.52	9.20	461	1,944	14,057	3,666	1,017	18,153
disseminated	170,613	0.46	0.88	2.60	0.75	0.18	3.56	780	1,499	14,273	4,100	995	19,515
Norilsk-1 deposit (disseminated ore)	21,804	0.28	0.37	4.29	1.73	0.19	6.34	61	80	3,009	1,214	135	4,445
Measured and indicated resources	**1,708,565**	**0.70**	**1.31**	**3.56**	**1.00**	**0.21**	**4.78**	**11,892**	**22,437**	**195,441**	**55,122**	**11,565**	**262,296**
Talnakh ore field, including	1,561,555	0.73	1.40	3.55	0.96	0.22	4.71	11,456	21,877	178,029	48,335	10,840	236,698
rich	113,786	3.23	4.25	7.96	1.60	0.29	10.10	3,675	4,840	29,123	5,845	1,069	36,950
cuprous	68,710	0.98	4.08	9.40	2.40	0.66	12.04	674	2,806	20,755	5,297	1,467	26,588
disseminated	1,379,059	0.52	1.03	2.89	0.84	0.19	3.91	7,107	14,231	128,151	37,193	8,304	173,160
Norilsk-1 deposit (disseminated ore)	147,010	0.30	0.38	3.68	1.44	0.15	5.42	436	560	17,412	6,787	725	25,598
Inferred resources	**440,898**	**0.85**	**1.74**	**4.22**	**1.09**	**0.25**	**5.54**	**3,750**	**7,653**	**59,754**	**15,435**	**3,545**	**78,321**
Talnakh ore field	439,830	0.85	1.74	4.22	1.09	0.25	5.54	3,747	7,650	59,627	15,385	3,541	78,054
Norilsk-1 deposit (disseminated ore)	1,068	0.28	0.28	3.69	1.46	0.13	7.78	3	3	127	50	4	267
KOLA PENINSULA (disseminated ore)													
Proven and probable reserves	**100,918**	**0.58**	**0.27**	**0.03**	**0.02**	**0.01**	**0.05**	**581**	**271**	**93**	**60**	**29**	**155**
Proven ore reserves	45,074	0.58	0.25	0.03	0.02	0.01	0.05	261	112	42	30	13	73
Probable reserves	55,844	0.57	0.28	0.03	0.02	0.01	0.05	320	159	51	30	16	82
Measured and indicated resources	**327,277**	**0.69**	**0.33**	**0.05**	**0.03**	**0.02**	**0.08**	**2,247**	**1,089**	**488**	**314**	**177**	**862**
Inferred resources	**144,211**	**0.63**	**0.31**	**0.04**	**0.03**	**0.01**	**0.07**	**909**	**448**	**184**	**121**	**60**	**320**

Minerals reserves and resourses as at December 31, 2018[1]		Metal grade						Contained metal					
	Ore kt	Ni %	Cu %	Pd g/t	Pt g/t	Au g/t	6 PGM g/t	Ni kt	Cu kt	Pd koz	Pt koz	Au koz	6 PGM koz
AUSTRALIA (Honeymoon Well)													
Measured and indicated resources (nickel sulfide ores)	173,300	0.68	0	0	0	0	0	1,180	0	0	0	0	0
Inferred resources (nickel sulfide ores)	11,900	0.68	0	0	0	0	0	81	0	0	0	0	0
Inferred resources (nickel laterite ores)	339,000	0.81	0	0	0	0	0	2,746	0	0	0	0	0
TOTAL RUSSIAN ASSETS													
Total proven and probable reserves	**784,543**	**0.88**	**1.55**	**0.12**	**0.03**	**0.01**	**0.16**	**6,867**	**12,129**	**92,957**	**24,660**	**5,360**	**123,137**
Total measured and indicated resources	**2,035,842**	**0.69**	**1.16**	**0.10**	**0.03**	**0.01**	**0.13**	**14,139**	**23,526**	**195,929**	**55,436**	**11,742**	**263,158**
Total inferred resources	**585,109**	**0.80**	**1.38**	**0.10**	**0.03**	**0.01**	**0.13**	**4,659**	**8,101**	**59,938**	**15,556**	**3,605**	**78,641**
TOTAL RUSSIAN AND INTERNATIONAL ASSETS													
Total proven and probable reserves	**784,543**	**–**	**–**	**–**	**–**	**–**	**–**	**6,867**	**12,129**	**92,957**	**24,660**	**5,360**	**123,137**
Total measured and indicated resources	**2,209,142**	**–**	**–**	**–**	**–**	**–**	**–**	**15,319**	**23,526**	**195,929**	**55,436**	**11,742**	**263,158**
Total inferred resources	**936,009**	**–**	**–**	**–**	**–**	**–**	**–**	**7,486**	**8,101**	**59,938**	**15,556**	**3,605**	**78,641**

Reserves and resourses in South Africa (Nikomati) as at June 30, 2018[2]		Metal grade				Contained metal			
	Ore kt	Ni %	Cu %	Co %	4 PGM g/t	Ni kt	Cu kt	Co kt	4 PGM koz
Proven and probable reserves	84,450	0.31	0.12	0.02	0.89	261	101	17	2,412
Measured and indicated resources	172,200	0.35	0.14	0.02	0.96	603	241	34	5,315
Inferred resources	46,350	0.40	0.13	0.02	0.97	185	60	9	1,445

1. *Data regarding the mineral resources and ore reserves of the deposits of the Taimyr and Kola peninsulas were classified according to the Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC code), created by the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists, and the Minerals Council of Australia, subject to the terminology recommended by the Russian Code for Public Reporting of Exploration Results, Mineral Resources, Mineral Reserves (NAEN Code).*
Data regarding the reserves and resources is based on the balance-sheet reserves of A, B, C1 and C2, categories (according to the terminology of the State Committee for Mineral Reserves) as of the end of the given calendar year.
Figures given as "Total" may differ from the sum of individual numbers due to rounding. Certain values may in some instances vary slightly from previously published values.
The six platinum group metals (PGMs) are platinum, palladium, rhodium, ruthenium, osmium, and iridium. Hereafter in the annual report, troy ounces are used as a weight measure for PGMS and gold.
Proven and probable ore reserves are included in mineral resources.
Ore losses applied ranged from 1.6 % to 26% and dilution from 6% to 31.9%.
Excluding deposits in Zabaykalsky Krai.
2. *The Group owns 50% of Nkomati, which operates a nickel mine of the same name. The co-shareholder of the company is African Rainbow Minerals. Nkomati's performance is reflected in financial results using proportional consolidation according to our stake and not reflected in other totals.*

Energy consumption by MMC Norilsk Nickel[1]

Type of energy	2016		2017		2018	
	Consumption in volume terms	RUB '000	Consumption in volume terms	RUB '000	Consumption in volume terms	RUB '000
Heat power	5,587,849 Gcal	4,702,584	4,737,249 Gcal	4,393,019	4,295,081 Gcal	4,606,657
Electric power	5,158,974 thousand kWh	5,272,779	4,489,188 thousand kWh	4,854,566	4,174,431 thousand kWh	4,668,543
Motor fuel	344 t	17,797	268 t	15,348	273 t	14,612
Diesel fuel	58,671 t	2,657,599	52,684 t	2,431,146	52,859 t	2,598,687
Heating oil	40,479 t	582,489	40,360 t	566,985	44,233 t	840,447
Natural gas	545,712,000 m3	1,363,718	497,141,000 m3	1,458,756	493,279,000 m3	1,482,681
Coal	49,760 t	20,612	17,359 t	4,204	16,473 t	7,545
Kerosene and aviation fuel	115 t	5,008	124 t	6,122	127 t	6,083

[1] Data on energy consumption is presented only by MMC Norilsk Nickel (exluding Kola MMC, Norilsk Nickel Harjavalta, GRK Bystrinskoye). No other types of energy were used besides those specified in the table.

Metric conversion table and currency exchange rates

METRIC CONVERSION TABLE

Length		Area		Weigth	
1 km	0.6214 mi	1 sq m	10.7639 sq ft	1 kg	2.2046 lb
1 m	3.2808 ft	1 sq km	0.3861 sq mi	1 metric tonne	1,000 kg
1 cm	0.3937 in	1 ha	2.4710 acres	1 short tonne	907.18 kg
1 mi	1.609344 km	1 sq ft	0.09290304 sq m	1 troy ounce	31.1035 g
1 foot	0.3048 m	1 sq m	2.589988 sq km	1 lb	0.4535924 kg
1 in	2.54 cm	1 acre	0.4046873 ha	1 g	0.03215075 oz t

CURRENCY EXCHANGE IN 2014–2018

Index	2014	2015	2016	2017	2018
Average rate Russian Rouble / US Dollar for the year ended 31 December	38.42	60.96	67.03	58.35	62.71

Glossary

Agglomeration. The process of compacting and forming a solid mass from ore fines (dust), concentrates or metal-bearing waste by heat to obtain agglomerate.

Anode. Crude metal (nickel or copper) obtained from anode smelting and fed for electrolytic refining (electrolysis) whereby it is dissolved.

Cake. Solid residue from filtering pulp during leaching of ores, concentrates or metallurgical intermediates, and purification of processing solutions.

Cathode. Pure metal (nickel or copper) obtained as a result of electrolytic refining of anodes.

Concentrate. A product of ore concentration with a high grade of the extracted mineral, which gives its name to the concentrate (copper, nickel, etc.).

Concentration. Artificial improvement of metallurgical feedstock mineral grades by removal of a major portion of waste rock not containing any valuable minerals.

Conversion. Oxidation process to turn matte into converter matte (in smelting copper-nickel concentrates) or blister copper (in smelting copper concentrates) and remove slag (carbon, sulphur, iron and other impurities).

Converter matte. A metallurgical intermediate produced as a result of matte conversion. Depending on the chemical composition, the following types of converter matte are distinguished: copper, nickel and copper-nickel.

Cuprous ores. Ores containing 20% to 70% sulphides, with the following metal grades: 0.2–2.5% for nickel, 1.0–15.0% for copper, 5–50 g/t for platinum group metals.

Disseminated ores. Ores containing 5% to 30% sulphides, with the following metal grades: 0.2–1.5% for nickel, 0.3–2% for copper, and 2–10 g/t for platinum group metals.

Drying. Removal of moisture from concentrates performed in designated drying furnaces (to a moisture level below 9%).

Electrolysis. A series of electrochemical reduction-oxidation reactions at electrodes immersed in an electrolyte as a result of passing of an electric current from an external source.

Electrowinning. Electrodeposition of metal from ores that have been put in solution. Ore or concentrate is leached with agents that dissolve metal-containing minerals or the entire material, so that the metal is deposited on the cathode. The electrolyte is typically reused in the process. The end product is high-purity metal cathode.

Filtration. The process of reducing the moisture level of the pulp by forcing it through a porous medium.

Flash smelter. An autogenous smelter for processing dry concentrates, where the smelted substance is finely ground feedstock mixed with a gaseous oxidiser (air, oxygen), which holds melted metal particles suspended. The heat from oxidation reactions is actively used in the process.

Flotation. A concentration process where specific mineral particles suspended within the pulp attach to air bubbles. Poorly wettable mineral particles attach to the air bubbles and rise through the suspension to the top of the pulp, producing foam, while well wettable mineral particles do not attach to the bubbles and remain in the pulp. This is how the minerals are separated.

Fluidised bed furnace. A furnace where solid particles are intensively mixed under a fluidising impact of heated gas (air, oxygen or flue gases) flowing through the bed of grainy material (powder, granules).

Intrusion. Intrusive rock forms within Earth's crust from the crystallisation of magma. Intrusions may be layered, with a regular stratigraphic sequence of rock.

Leaching. Selective dissolution of one or several components of the processed solid material in organic solvents or water solutions of inorganic substances. Kinds of leaching: acid leaching (leaching with acids as reagents), chlorine leaching.

Matte. Intermediate product in the form of an alloy of sulphides of iron and non-ferrous metals with a varying chemical composition. Matte is the main product accumulating precious metals and metal impurities the feedstock contains.

Metal extraction. The ratio between the quantity of a component extracted from the source material and its quantity in the source material (as a percentage or a fraction).

Metal grade. The ratio between the weight of metal in the dry material and the total dry weight of the material expressed as a percentage or grammes per tonne (g/t).

Mine. A mining location for extraction of ores.

Ore mixture. A mixture of materials in certain proportions needed to achieve the required chemical composition of the end product.

Ore. Natural minerals containing metals or their compounds in economically valuable amounts and forms.

Oxide. A compound of a chemical element with oxygen.

Probable ore reserves. Estimated based on the economically mineable part of indicated and, in some circumstances, measured mineral resources, including possible dilution and losses during mining operations.

Proven ore reserves. Estimated based on the economically mineable part of measured mineral resources, including possible dilution and losses during mining operations.

Pulp. A mixture of finely ground rock with water or a water solution.

Pyrrhotite concentrate. By-product of copper-nickel ore concentration.

Refinement. The process of extracting high purity precious metals through their separation and removal of impurities.

Reverberatory furnace. A smelting furnace in which heat passes to material being processed from contact with gaseous fuel combustion products and the hot inner surface of refractory lining (for example, in producing matte from copper ores or concentrates).

Rich ores. Ores with high sulphide content (over 70%) and the following metal grades: 2–5% for nickel, 2–25% for copper, and 5–100 g/t for platinum group metals.

Roasting. Heating ore to high temperatures to trigger chemical changes that enable subsequent metal recovery processes.

Shop area. A part of a (metallurgical) shop.

Slag. Melted or solid substance with a varying composition that covers the surface of a liquid product during metallurgical processes (resulting from ore mixture melting, melted intermediate processing and metal refining) and includes waste rock, fluxes, fuel ash, metal sulphides and oxides, and products of interaction between the processed materials and lining of melting units.

Sludge. Powder product containing precious metals settling during electrolysis of copper and other metals.

Sublevel caving. An underground mining method in which ore blocks are developed from top to bottom via sublevels, and ore is extracted by blasting or causing sublevels to cave in. The voids formed after extraction get filled with fractured rock.

Sulphides. Compounds of metals and sulphur.

Tailings pit. A complex of hydraulic structures used to receive and store mineral waste / tailings.

Tailings. Waste materials left over after concentration processes and containing mostly waste rock with a minor amount of valuable minerals.

Thickening. Separation of liquid (water) and solid particles in dispersion systems (pulp, suspension, colloid) based on natural gravity settling of solid particles in settlers and thickeners, or centrifugal settling of solid particles in hydrocyclones.

Tolling agreement. An agreement to process foreign feedstock with subsequent shipping of finished product. The feedstock and end product are exempt from customs duties.

Underground (subsurface) mining. A set of stripping, preparatory and stoping operations.

Vanyukov furnace. An autogenous smelter for processing concentrates, where smelting is performed in a bath of slag and matte, with intensive injection of air-oxygen mixture. The heat from oxidation reactions is actively used in the process.

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Fax: +7 (495) 785-58-08
Address: Russian Federation, 123100
Moscow, 1-iy Krasnogvardeyskiy proezd, 15

Registrar

JSC R.O.S.T. Registrar
(before 04.02.2019 JSC Independent Registrar Company)
Russian Federal Securities Commission license number 045-13976-000001, dated December 6, 2002, valid indefinitely
Web-site: **www.rrost.ru**

Head office
Address: 18 bldg. 13, Stromynka Street, 107996 Moscow, Russian Federation
Phone: +7 (495) 989-76-50
Fax: +7 (495) 780-73-67
Email: **info@rrost.ru**

Norilsk Branch
Address: 8 Bogdan Khmelnytskiy, Norilsk, Krasnoyarsky Krai, 663305, Russian Federation
Phone: +7 (3919) 46-28-17
Helpdesk operating hours:
Monday - Friday from 10:00 to 14:00

Krasnoyarsk branch
Address: office center "Voskresensky", office 314, 94 Prospekt Mira, Krasnoyarsk, 660017, Russian Federation
Phone: +7 (391) 216-51-01, 223-20-30
Fax: +7 (391) 216-57-27
Helpdesk operating hours:
Monday - Friday from 9:00 to 13:00

ADR Depositary

Bank of New York Mellon
Depositary Receipts Division
Address: 240 Greenwich Street, 22nd Floor West, New York, NY 10286
Phone: +1 (212) 815-41-58
Fax: +1 (212) 571-30-50
Web-site: **www.bnymellon.com**

Auditor

JSC "KPMG"
Address: 3035, 18/1 Olympiysky prospekt, Moscow, 129110 Russian Federation
Postal address:
Naberezhnaya Tower Complex, Block C, 31st Floor, Presnenskaya Naberezhnaya, Moscow, 123112 Russian Federation
Phone: +7 (495) 937-44-77
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