Company 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.

Values

- **Reliability**
  
an ability to address any challenges to ensure success for the business.

- **Growth**
  
effective production ramp-up and upgrade, leverage of groundbreaking technologies and development of our people.

- **Efficiency**
  
delivering against our targets in due time and at minimum costs.

- **Responsibility**
  
a desire to honour our commitments and take responsibility for our decisions.

- **Professionalism**
  
as sustainably strong performance.

- **Collaboration**
  
an ability and desire to achieve goals through team work.
The Norilsk Nickel Group (the Group) includes PJSC MMC Norilsk Nickel (Nornickel), the Company and its subsidiaries. MMC Norilsk Nickel is the core (parent) company of the Norilsk Nickel Group, having the biggest share in the subsidiaries' authorised capital.

EXPLORATION MINING AND PROCESSING OF MINERALS SALES OF NON-FERROUS AND PRECIOUS METALS

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

In addition to the production facilities, the Company owns:
- a global sales network,
- fuel and energy assets,
- a wide range of R&D units,
- river transport, port terminals, a unique Arctic cargo fleet.

The Company’s reserves and resources as at 31 December 2017, including wholly owned overseas assets and working deposits in Zabaykalsky Krai are reported according to JORC standards.

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For more details on the Group’s structure
For more details on the Group’s reserves and resources
For more details on the Company’s position in the industry

EBITDA margin in 2017 // %

<table>
<thead>
<tr>
<th>Company</th>
<th>EBITDA margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.1</td>
<td>52</td>
</tr>
<tr>
<td>No.2</td>
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<td>No.4</td>
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<tr>
<td>No.5</td>
<td>34</td>
</tr>
<tr>
<td>No.6</td>
<td>28</td>
</tr>
</tbody>
</table>

Strong EBITDA margin ranking among the highest in the global metals and mining industry

Mineral resources

Nornickel operates the unique Taimakh Ore Field on the Taimyr Peninsula. Its sheer size and remarkably high content of metals in the ore make the field’s resource base key contributor to the Company’s long-term sustainable growth.

For more details of sales network

Dividend yield in 2017 // %

<table>
<thead>
<tr>
<th>Company</th>
<th>Dividend yield</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>No.2</td>
<td>6.2</td>
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<td>3.0</td>
</tr>
<tr>
<td>No.6</td>
<td>2.9</td>
</tr>
</tbody>
</table>

The Company offers the highest dividend yield in the industry
Key highlights

Financial stability

For more details on financial results, please see the Financial Results (MD&A) section and IFRS Financial Statements.

In 2017, EBITDA increased by 2% mainly due to higher metal prices. Strong EBITDA margin remains among the highest in the global industry.

Operating efficiency

For more details on production outlook, please see the Strategy overview section available on the Company’s website.

PRODUCTION RESULTS

<table>
<thead>
<tr>
<th>Metal</th>
<th>Production (kt)</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel</td>
<td>From the Company’s own Russian feedstock</td>
<td>195</td>
<td>209</td>
<td>217</td>
</tr>
<tr>
<td>Copper</td>
<td>From the Company’s own Russian feedstock</td>
<td>206</td>
<td>246</td>
<td>268</td>
</tr>
<tr>
<td>Palladium</td>
<td>From the Company’s own Russian feedstock</td>
<td>342</td>
<td>344</td>
<td>348</td>
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<tr>
<td>Platinum</td>
<td>From the Company’s own Russian feedstock</td>
<td>503</td>
<td>530</td>
<td>556</td>
</tr>
</tbody>
</table>

CAPEX

CAPEX increased in 2017 due to the active construction phase of Bolyarsky GOK and upgrade of refining capacities at KoTa MMC.

In 2017, Nornickel’s net profit amounted to USD 2.1 bn.

The Company paid the highest dividend yield in the global metals and mining industry.

High level of social responsibility

Nornickel’s investment programme for 2018–2020 includes several large-scale energy projects aimed at modernizing the Company’s captive hydropower plants and enhancing the use of renewable energy sources.

In 2017, sulphur dioxide emissions decreased by 11% from 2015. The decline came as a result of the Nickel Plant shutdown, upgrade of Talnakh Concentrator and the transition to hot briquetting technology at KoTa MMC. The emissions within Norilsk city limits dropped by 30–35%.

The decrease in headcount in 2017 resulted from the disposal of non-core assets, implementation of a programme to improve labour productivity, and cost optimisation.

The 2017 LTIFR (Lost Time Injury Frequency Rate) (non-fatal LTIs) per total number of hours worked(1,000,000) is in line with the industry average. The number of fatal injuries decreased by 46% thanks to the implementation of new safety standards and launch of the Risk Control project. The number of accidents among the contractors’ employees also declined.

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In 2018–2022, Nornickel will become ‘greener’ and help others to ‘get greener’.

Vladimir Potanin

Product applications

The Group’s own global sales network spans over 34 countries.

Metal sales geography

Foreign assets

Operations

Australia

Honeyeem Well (licence)

South Africa

Nkomati

Foreign assets

Positive environmental impact

Australia

Honeymoon Well (licence)

South Africa

Nkomati

Operations

Mining

Refining

Concentration

Logistics

Processing

Production assets structure

Revenue

Investments

Net profit

9.1 USD bn

2.1 USD bn

2.0 USD bn

25.2%

24.9%

17.4%

6.8%

25.7%

24.9%

3.6%

35.2%

23.8%

9.4

396

3,455

Krasnoyarsk Precious Metals Refinery (100% state-owned)

Bystrinsky GOK

Kola MMC

Nornik Nickel

Harjavalta

Proven and probable reserves

Measured and indicated resources

Operations

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Electric cars with a new type of batteries

Catalysts in exhaust gas treatment systems

Sulphur Project

R&D

Positive environmental impact

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Vladimir Potanin

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The Group’s own global sales network spans over 34 countries.

Metal sales geography
Dear Shareholders,

Year 2017 was rough and volatile from both macroeconomic and operating perspective, but it nonetheless became a year of significant achievements and major decisions for our Company.

Thanks to the hard work, commitment and professionalism of our 79,000 employees, we continued to expand our leadership position by delivering on operating and financial results, upgrading our assets, and enhancing safety, while generating significant value for shareholders.

In the second half of 2017, synchronised global economic growth and optimism returned to the metals and mining sector, positively affecting the price of our metal basket. With this tailwind, we generated solid revenues of USD 9.1 billion and strong EBITDA of USD 4.0 billion with a strong margin of 44%.

To allow you, as shareholders, to benefit from our robust cashflow generation, we continued paying dividends with an industry-leading yield. I would like to highlight that the flexibility of our dividend policy allowed us to maintain a proper balance between a conservative level of financial leverage and attractive cash returns, while still investing in sustainable development and future growth.

During the year, we continued to deliver on our value-accretive investment agenda as the expansion and modernisation of concentrating, smelting and refining facilities were largely completed, allowing us to beat initial production guidance and minimize the low-margin processing of third-party feed. Another big achievement was the launch of the Bystrishinsky greenfield project, which we have been actively investing in for the last few years. This is positioned to provide a significant boost to our copper and gold output from 2018.

With regard to important decisions, I would like to highlight our announcement of a new investment programme focused on environmental and large-scale infra-structural expenditures that are crucial pre-requisites for long-term sustainable growth. The Company is committed to allocating USD 2.5 billion to reduce sulfur dioxide emissions in the Polar division by four times by 2023, in order to improve dramatically the quality of life in Norilsk. During 2018-2022, we also plan to invest over USD 1 billion in renewal of infrastructure including a gas transportation system, power generation and logistics. We understand that these investments may not generate immediate financial returns, but firmly believe that our efforts will pay off and contribute to the growth of shareholder value in the long run. We are witnessing the growing environmental awareness of the global investor community which chooses long-term sustainable development to short-term gains, and hence supports our strategic initiatives.

A year of major decisions will now be followed by the systematic implementation of the measures initiated, with a positive impact on our operations. To ensure the delivery of improved results and higher returns to shareholders, the Board will continue to be deeply involved in oversight of performance, risk and financial efficiency and will keep a constant scrutiny on safety. We have a bold vision for the future — an invigorated sense of what we can accomplish as one team, one Nornickel.

Gareth Peter Penny
Chairman of the Board of Directors
MMC Norilsk Nickel
President’s letter

Dear shareholders,

It was half a decade ago, back in 2013, when the Company’s new management team launched a five-year strategic programme, so in addition to the last 12 months of 2017, I would also like to speak about the performance over the last five years.

When we took the reins in 2013, we had our work cut out for us. We had to whip the Company into shape, and we started by shoring up the budget and investment discipline, reconfiguring our production chains, upgrading smelting capacities and preparing integrated solutions for multiple environmental problems.

Today, I can say that we have followed through on each of these targets, even despite the constant metal price fluctuations, capital markets uncertainty and geopolitical challenges. Our operations were not the only field where we excelled thanks to consistently strong financial performance and well-organised dialogue with the investment community, we were able to lock in a substantial dividend yield of more than 60% over the last five years.

Completion of polar assets reconfiguration and new launches

In 2017, we completed a number of key development projects that were started back in 2013–2014. Talnakh Concentrator reached full design capacity, marking a milestone in Nornickel’s major investment project to upgrade equipment and reconfigure processing capacities. Improved concentrate quality and expanded processing capacities at Nadezhda Metallurgical Plant and the Kola MMC refining facilities fully offset the discontinued smelting capacities following the shutdown of Nickel Plant. As a result, the output of all our key metals from own feedstock grew by 7–15% compared to 2016.

In late October 2017, we launched Bystinsky GOK in Zabaykalsky Krai, which was the largest Russian greenfield project of the last decade. For us, Bystinsky GOK is not just another new asset, which is going to be outputting 70 kt of copper and 250 koz of gold annually, but a platform to implement the most advanced technologies and practices, both in the sphere of production, social policy, environment protection and HR management.

Financial highlights

Inspired by the synchronised global expansion, investors showed renewed interest in commodities, which supported the recovery of the non-ferrous and platinum group metals prices in 2H 2017. As a result, Nornickel’s revenue grew by 11% to USD 9.1 bn, while EBITDA stood at USD 4 bn with the margin of 44%. CAPEX amounted to USD 2 bn, the bulk of which was spent on continuing the production capacity reconfiguration programme, executing high-margin mining projects and completing Bystinsky GOK.

+7–15%
increased production from own feedstock

2
USD bn
CAPEX
Thanks to the favourable global market environment and historically low interest rates, we were able to decrease the cost of our debt. During the last year, we repaid high interest rate rouble loans in the amount of RUB 60 bn, placed two Eurobond issues for USD 15 bn with record-low coupon rates for Nornickel, made a downward revision to the rates on our existing credit facilities for a total amount of USD 2.5 bn, and raised a syndicated loan of USD 2.5 bn from a pool on international banks at an unprecedentedly low interest rate for a Russian company. Together, these achievements helped drive down the future interest payments by over USD 100 mn.

**Occupational safety and social responsibility**

The life and health of its employees remain Nornickel’s top priority. The Company has put in place a large-scale programme for prevention of workplace injuries and accidents, carried out behaviour audits and workplace certification, and implemented the latest occupational safety standards. We also started the digitisation of production processes at underground mines. Despite the human factor still causing some work-related fatalities, we were able to almost halve their number. No matter how small, that number is unacceptable for us, and we are going to do all we can to achieve a zero fatality rate.

The Company’s social work is not limited to its production facilities. Across all regions of its operation, Nornickel strives to better the urban environment, improve living conditions, and support public initiatives in the respective areas. Since 2014, the Company has been hosting a grant competition of social projects, which aims to support public initiatives and facilitate sustainable development. Over the last three years, the competition drew 1,087 bids, out of which 294 were selected for funding, with the total of RUB 265.5 mn allocated by the Company.

Volunteering is becoming increasingly more popular among Nornickel’s employees. For example, the Let’s Do It environmental marathon, which seeks to promote careful and responsible attitudes to the regions of operation and ecology on the whole among the Company’s staff, has become a corporate tradition. In 2017, it saw participation from thousands of Nornickel employees, who are also part of the Plant of Goodness corporate volunteer programme. Another important development of 2017 was the end of the fibre optic communication line construction, which finally gave Norilsk residents access to high-speed internet. It will make it faster and easier for us to introduce IT solutions at the production sites while also improving the community’s living standard.

**New strategic cycle’s priorities – green Nornickel and investments in growth**

Despite the achievements of the last five years, we realise there is still a lot of work ahead of us and do not hesitate to set even more ambitious targets. The absolute priority for us is the material improvement of the environmental conditions in the Norilsk Industrial District and the Kola Peninsula. Last year, we initiated the so-called Sulphur Project, which will enable the Company to cut Polar Division’s sulphur dioxide emissions by 75% by 2023. This truly massive project will involve the construction of major sulphuric acid production capacities with subsequent neutralisation capabilities and will cost up to USD 2.5 bn. We will continue work on the Kola MMC production chain upgrade, which will allow us to shut down part of the smelting capacities and thus achieve a twofold decrease in emissions.

We aim to make Nornickel a truly “green” company, which will include not only decreasing the harmful footprint of our facilities, but also promoting our products as a means of ensuring environmentally-friendly development of the humankind. Nornickel is already recognised as the largest global producer of metals used in manufacturing of automotive catalysts, which help improve urban air quality across many countries. High-quality nickel is an indispensable component of batteries for electric cars, which will dominate our planet’s roads in the future.

To maintain Nornickel’s status of the industry powerhouse long into the future, we are putting together a portfolio of growth projects that include development of the Southern Cluster (potential to ramp up production from 2 to 6 mt of ore), expansion of Taimskii Concentrator, and a project to develop disseminated ore fields in the southern part of the Norilsk Industrial District.

We are certain that successful execution against our targets over the next five-year period will ensure exponential growth of Nornickel and lay the groundwork for generating long-term shareholder value.
Nornickel’s strategy

The Company has embarked on a new investment cycle to secure its sustainable development and establish a platform for future growth. President’s priorities include implementing the second stage of the unprecedented environmental programme, completing the production reconfiguration project, developing the Company’s mining assets, reaching target performance levels for the Chita project, and delivering on the extensive infrastructure renewal programme, which, together with comprehensive efficiency improvement efforts, is helping to lay foundation for sustainable shareholder value growth.

Environmental programme

- Implementing environmental projects that lead to a many-fold decrease in SO2 emissions across the Company’s footprint
- Working with the “green” industries, including by manufacturing catalysts and electric transport

Mining development and the new asset replacement cycle

- Consistently renewing the infrastructure and key production facilities
- Upgrading and refurbishing the production assets (reconfiguration project)
- Developing the Talnakh ores and maintaining a stable production level

Consistent process efficiency improvement

- Comprehensive cost reduction and efficiency improvement programme
- Introducing ERP / automated control systems
- Introducing industrial automation systems

President’s priorities

The 2023 development programme is designed to renew all production capacities and, ultimately, make Nornickel one of the most advanced and environmentally responsible companies in the industry.

Vladimir Potanin
We are launching the second stage of our environmental programme, the Sulphur Project, on a scale that is unprecedented not only in Russia but worldwide.

Vladimir Potanin

Environmental programme

The integrated environmental programme expected to receive ca. USD 2.5 bn in investments by 2023 is one of the priority focus areas of Norilnick’s strategy. The programme is designed to decrease SO₂ emissions by 75% in the Norilsk Industrial District and by 50% on the Kola Peninsula.

-75% target reduction of SO₂ emissions in the Norilsk Industrial District by 2023

-50% target reduction of SO₂ emissions in the settlement of Nickel (Kola MMC) by 2019

Kola Peninsula
Kola MMC

Objective
Cut emissions in the Kola Peninsula by 50%

Goal
Optimise the smelting shop capacity utilisation ratios in the settlement of Nickel by separating the concentrate produced at Kola Concentrator

Taimyr Peninsula,
Polar Division

Objective
Cut sulphur dioxide emissions by 75% (as compared to 2015) by 2023 leveraging the most effective technological solution

The programme includes two stages
Stage 1 was completed in 2016 as a part of the downstream reconfiguration programme that included upgrade of concentrating and smelting capacities as well as the shutdown of Nickel Plant, the oldest and least environmentally friendly site in the Polar Division, to substantially reduce emissions in the residential area of Norilsk. At present, the Company is working to achieve Stage 2 goals.

Goal
Optimise the smelting shop capacity utilisation ratios in the settlement of Nickel by separating the concentrate produced at Kola Concentrator

Copper plant
- Reconstruct copper production chain, including the shutdown of environmentally harmful conversion operations
- Expand and upgrade the existing sulphur production

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

Sulphur Project

Investing in pure metal

Providing the growing electric vehicle industry with critically important metals

Ni, Cu, Co

Providing catalyst producers with critically important metals

Pt, Pd
Over the next three years, we will be going through a higher CAPEX stage which will allow us to both maintain stable production levels and establish a strong foundation for new high-potential projects.

“Vladimir Potanin”

The framework investment programme provides for large-scale modernisation and expansion of the production capacities, consistent renovation and upgrade of the infrastructure, development of the Talnakh ore, and maintaining a stable production level. The Chita project, one of the largest greenfield projects in Russia’s mining industry, is also part of the framework investment programme.

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As part of its strategy, Nornickel will allocate USD 1.1–1.2 bn to infrastructure renewal and upgrades during 2018–2020. The projects include a large-scale infrastructure renewal, renovation of worn out gas transportation and hydropower facilities, replacement of power units, and reconstruction of critical production assets, transport infrastructure, and power grid.

### Project highlights

#### Power supply
- Gradual replacement of six retiring power units with the total capacity of 550 MW

#### Auxiliary operations
- Replacing the required resources, including construction of a new limestone quarry

#### Transport infrastructure
- Reconstruction of critical facilities (airport, seaport, oil depot, warehouses, etc.)

#### Power and utilities
- Parts of the comprehensive programmes: power line replacement (30 km), gas distribution networks (111 km), drinking water supply to Dudinka, etc.

### 2018–2022 targets

- **Power supply**
  - Gradual replacement of six retiring power units with the total capacity of 550 MW

- **Auxiliary operations**
  - Replacing the required resources, including construction of a new limestone quarry

- **Transport infrastructure**
  - Reconstruction of critical facilities (airport, seaport, oil depot, warehouses, etc.)

- **Power and utilities**
  - Parts of the comprehensive programmes: power line replacement (30 km), gas distribution networks (111 km), drinking water supply to Dudinka, etc.

### Scheduled for replacement in 2018–2022 are:

- **six power units with the total capacity of 550 MW**
- **gas distribution networks with the total length of 111 km**
- **a power line with the total length of 30 km**
Shaping growth areas

Development driven by Tier 1 assets is the Company’s long-term strategic goal.

What are Tier 1 assets?

- Target annual revenue
- EBITDA margin
- Reserve-to-production ratio

> USD 1 bn 40% >20 years

Potentially, growth areas will be centred around the existing assets of Polar Division, with a possibility of initiating a new copper project in Russia’s Far East.

“...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

Optional projects

- Strategic partnership with Russian Platinum
  The southern part of the Norilsk Industrial District
  - Nornickel is considering a strategic joint venture with Russian Platinum, of a calibre comparable to Polar Division in terms of scale of PGM production. The joint venture is set to become one of the largest global PGM producers.

- Southern Cluster
  Investment decision – 2018
  - Potential to become a Top 5 global PGM producer.
  - Optimal capacity utilisation at Norilsk Concentrator (post Talnakh Concentrator–3).
  - Potential to raise project financing.

- Talnakh Concentrator–3
  Investment decision – 2018
  - Efficient disseminated ore processing technologies deliver greater metal recovery rates.
  - Opportunity to utilise the economies of scale by using several existing facilities of Talnakh Concentrator.
  - Opportunity to optimise costs of transporting Talnakh ores to Norilsk Concentrator.

- Russian Far East
  - Looking for Tier 1 assets for long-term development in the Far East, a poorly developed region with a vast resource potential and proximity to Asian markets.

Boosting Tier 1 asset potential

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

More details on the project → p. 87

Target PGM output of the new JV

70–100 mtpa
We must ensure that all our process chains are built in the most efficient manner aligned with our objectives.

– Vladimir Potanin

Efficiency improvement programme

The comprehensive programme was enabled by the platform created in the past, including industrial automation and automated control systems, ongoing ERP deployment, and new production processes and standards.

USD 200–300 m

Target outcome – costs reduced, since 2020, by

Shaping a comprehensive cost reduction ecosystem

Base programmes

- Upgrading production assets
- Developing and integrating new production processes and standards
- Reconfiguring and shutting down outdated production facilities
- Introducing ERP / automated control systems
- Introducing industrial automation systems
- Introducing new approaches to management

IT infrastructure upgrade as a tool for achieving operational excellence

- SAP ERP deployment
  - Pilot project completed
  - 2017 – Chita project, 2018 – Polar Division
- Underground radio communications and positioning systems at the mines
  - 369 km of optic fibre cable
  - 1,052 Wi-Fi spots
  - Real-time control of mining personnel and machinery
- New DCP architecture
  - Upgraded server infrastructure and data storage systems according to the Company’s needs
  - Upgraded data network
- MES layer (Manufacturing Execution System)
  - Machinery control system pilot project in Norilsk
  - Completed 3D modelling of one mine’s shafts; now the system is rolled out to other mines
  - Talnakh Concentrator successfully piloted the metal balance project; the system is rolled out to other plants and mines
- Optic fibre line to Norilsk
  - The 956 km 40 Gbps line is now live
  - Unprecedentedly challenging line construction environment
  - Enabling the use of advanced IT systems
  - Better living standards in Norilsk

More details on the project p. 119

Optic fibre line to Norilsk

Optic fibre line to Norilsk

Faber cable
956 KM

Novy Urengoy

Norilsk

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### MARKET OVERVIEW

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<thead>
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<th>Metals in electric car production</th>
<th>Nickel</th>
<th>Copper</th>
<th>Palladium</th>
<th>Platinum</th>
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<tbody>
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<tr>
<td>Metals</td>
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Market overview

Metals in electric car production

For the Company, this project is an opportunity to carve a niche in the attractive and rapidly growing market for rechargeable battery materials. Cooperation with BASF is part of Nornickel’s strategy to develop environmentally-friendly technologies and make an active contribution towards improving the environment globally. Today, the Company provides manufacturers of automotive catalysts with essential chemicals capable of capturing dangerous exhaust fumes generated by petrol engines. By expanding the supply of metals for the automotive industry with its strong potential, the Company makes another step towards sustainable development.

Key Trend in the Global Automotive Industry

The electric vehicle industry is clearly facing a period of intensive growth, which will boost long-term demand for key metals. However, so far experts have not come to a consensus on market growth projections. Sales forecasts for electric and hybrid cars vary from 2 mln cars to 11 mln cars per year by 2025.

Market outlook for 2035 is much more optimistic. BP projects the total number of EV and hybrids to grow to at least 105 mln globally. According to analysts from Carbon Tracker Initiative and Imperial College London, electric vehicles are expected to account for one third of the automotive market by 2035 and for more than a half by 2040. One of the most likely drivers of EV expansion will be government policy in many developed countries committed to introducing a broad range of incentives to promote the production of green cars, up to imposing an ultimate ban on the sale of cars with internal combustion engines. Still, this is unlikely to happen before 2025.

Consensus in bullish on long-term outlook of electric vehicle sales

Consensus in bullish on long-term outlook of electric vehicle sales. Source: Company estimates, LMC Automotive, Bloomberg. Ni, Cu, PGM consumption in hybrid cars is higher than in traditional vehicles with the same ICE volume; accordingly, we expect palladium consumption to increase by 3 mln oz by 2025.
Key trends in the nickel market

In Q1 2017, the nickel price was highly volatile in the range of USD 9,380–11,045 per tonne reflecting a mixed news background from Indonesia and the Philippines. In early Q2 2017, it started to decline after the Indonesian government issued permits for the export of unprocessed nickel ore and Regina Lopez, Secretary of Environment and Natural Resources of the Philippines, was not re-appointed for a new term of office, which challenged the decisions made after the environmental audit of the country’s mining industry. This trend was intensified by a reduction in stainless steel output in China. However, starting Q3 2017, prices began to recover backed by the news about the growth of stainless steel production in China and the launch of a large stainless steel plant in Indonesia. Early Q4 2017 saw a positive price performance amid considerable enthusiasm of the investment community about the potential increase in nickel consumption in electric cars, peaking at USD 12,830 per tonne – the highest level since June 2015. However, by the year-end 2017, there was a price correction to USD 12 thousand per tonne.

Outlook: cautiously optimistic.

In 2018, the market deficit may go down a result of a much greater availability of high grade lateritic nickel ore.

Market balance

Following several years of surplus, the nickel market recovered the balance in 2016, with consumption outstripping production by 20 kt. In 2017, nickel shortage went up to 108 kt. The demand was mainly driven by a 7% y-o-y increase in metal consumption primarily attributable to the Asian producers of stainless steel and batteries. In turn, primary nickel output gained as little as 2%. High grade nickel production declined by 6% (60 kt) largely triggered by the reconfiguration of the Company’s production facilities, shutdown of sulphide ore mines in Canada, and the shortage of hydrometallurgy semi-products and sulphide concentrates on the market after the closure of loss-making mines in 2015–2017, with the Ravensthorpe shutdown coming as the last of those. Only nickel production from lateritic ore was on the rise. In 2017, low grade nickel production increased by 1%, or 100 kt y-o-y, mainly due to the Chinese and Indonesian NPI output growth. During the year, total exchange warehouse stocks at the LME and the SHFE decreased by 55 kt to 411 kt, during which the LME Week that aroused investor interest in nickel on the back of the expected electric car market growth.

Key industry developments and nickel price // USD/t

Leaked data on possible easing of the ban to export ore from Indonesia and uncertainty in the Philippines after environmental audits of the mining industry;
Permit issued by the Indonesian government to PT Antam to export up to 2.7 million wet tonnes of unprocessed nickel ore;
R. Lopez’s failure to be re-appointed as Secretary of the Philippines’ Department of Environment and Natural Resources;
Permits by the Indonesian government issued to Fajar Bhawk Lintas Nusantara to export up to 106 million wet tonnes of unprocessed nickel ore;
Relaunch of Delong’s stainless steel plant (China);
Launch of a stainless steel production line at Tsingshan plant (Indonesia);
Recovery of stainless steel output in China;
LME Week that aroused investor interest in nickel on the back of the expected electric car market growth.

Surplus/deficit in the nickel market // kt

+7% growth of consumption of primary nickel
+2% growth of primary nickel output in 2017
Consumption

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, energy, transportation, 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. For statistical purposes, these steels are usually grouped with the 300 series.

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, Stanless and cutlery, kitchenware, home decor items and razor blades.

In 2017, the total stainless steel output increased by 6% and hit a record high of 48 mt.

China (with a share of over 50% of the global output) and Indonesia accounted for the most part of production growth. Smelting output growth in China ensued from the re-launch of Delong’s capacities (over 11 mtpa) previously suspended after more stringent environmental controls had been imposed. Indonesia is a new steel market player with a lower nickel content.

In 2017, primary nickel consumption in alloy production increased by 2%, which was mainly attributable to the recovery of demand from the oil and gas industry, and high demand from the aerospace industry.

Nickel consumption is predominantly driven by the stainless steel industry (over 70% in 2017).

Except for Europe, where stainless steel smelting stayed flat, nickel consumption in stainless steel making was steadily growing in 2017 across all regions. The USA was leading the change in this segment with an 8% rise, according to our estimates.

Consumption of primary nickel by the global stainless steel producers rose by 7% to 157 mt as a result of an increase in the 300 series and 200 series global output by 7% and 5% respectively, and a flat share in the use of scrap y-o-y. However, the use of high grade nickel in stainless steel smelting has not changed vs 2016 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 with higher volumes of NPI, ferronickel and metanickel products with a lower nickel content.

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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 2017, primary nickel consumption in the electroplating industry grew by 5% (4 kt), mainly due to demand in Asia. 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.

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

Primary nickel consumption in 2017 in stainless steel making was steadily growing in 2017 across all regions.

Stainless steel production by grade series // mt

Source: Company data

Primary nickel consumption in 2017 // mt

Source: Company data

Record stainless steel output in 2017
Market overview

Battery

Nickel-cadmium

Nickel-cadmium batteries were developed in 1899. Currently, their use is restricted, since cadmium is prohibited as a toxic substance under the EU ban.

Nickel-metal hydride

Ni-MH batteries were developed in 1989 as a substitute for Ni-Cd batteries to avoid using cadmium. Producers use nickel to manufacture this type of batteries. 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.

Lithium-ion

Lithium-ion batteries were first commercially released in 1991 and became fairly widespread due to their high energy capacity and reliability (capacity is retained after many recharge cycles).

The key driver behind Li-ion battery growth is electric vehicles gaining ground. Since 2014, CAGR of electric and hybrid car sales increased from 3.6% to 20.7%

The key factors driving electrification of the transport system are:
- incentives offered by the state;
- transformation of the consumer mindset;
- improved technical specifications of batteries.

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. Buyers of electric cars in a number of other European countries, including Belgium, Germany, the UK and France, enjoy considerable subsidies (ranging from EUR 4,000 to EUR 10,000) and fiscal incentives.

There are several types of lithium-ion batteries depending on the cathode materials: LCO, LFP, LMO, NCM, NCA.

LCO is largely used in portable devices. This type of the cathode material is not applied in electric cars as a result of high cobalt prices, limited capacity, and technical issues of making a high-capacity battery safe for operation. However, other types of Li-ion batteries are widely applied in the industry: LFP and LMO tend to be replaced with other Li-ion battery types containing nickel as a result of a higher gravimetric and volumetric capacity of NCM and NCA. It helps to increase mileage and shrink battery volume and weight. The share of nickel compounds in the total cathode material output used in Li-ion batteries went up from 32% in 2012 to 51% in 2017.

Growing nickel consumption in Li-ion batteries comes not only on the back of increasing share of NCM/ NCA containing nickel, but also higher average nickel content in the cathode material triggered by the need to substitute expensive cobalt units. While in 2016 NCM 111 (with nickel mass fraction of 20%) accounted for the lion share of nickel-magnesium compounds of the cathode material, in 2017 Li-ion batteries with NCM cathodes 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 nickel-based cathode material.

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 NCM lay the groundwork for major expansion of primary nickel consumption in this industry in the long run.

Ni-Cd

Lithium

LiFePO4

MnO2

Manganese Oxide

LiMn2O4

LiCoO2

CoNiMn

NCA

NiCoMn

NCA

LiNiCoMn

NMC

Lithium Cobaltate

Aluminium

NiCd

Cobalt

Lithium

NiFe\(2\)O4

Phosphate

LiFePO4

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 2017, the major high grade nickel producers included Norilsk, Vale, Jinchuan, Glencore and Sumitomo Metal Mining.

Low grade nickel (ferro-nickel, NPI and nickel oxide) is only produced from laterite ore. In 2017, the major low grade nickel producers included Chinese and Indonesian NPI companies and also ferro-nickel producers: Erasteel, Anglo American, South 32, Pamco and Posco (SNNC).

In 2017, primary nickel production grew by 2%, or 48 kt y-o-y, driven only by an increase in low grade nickel output, which more than offset the decline in high grade nickel production that continued in 2017.

In 2017, high grade nickel output dropped by 5%, with production cuts coming from the following producers: Vale’s Canadian refining operations after the shutdown of its Birchree (Thompson) and Stobie (Sudbury) mines; Nornickel due to ongoing capacity reconfiguration; Chinese refined nickel producers as a result of nickel feedstock shortage following the closure of loss-making mines in 2016–2017; Ambatovy (Madagascar).

Production of nickel forms for cathode use saw a substantial decline, which entailed their shortage in the market.

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.

In 2017, low grade nickel production gained 10% globally. This was driven by NPI output increase in China and Indonesia, along with ferro-nickel in all major regions except Europe.

The key driver behind NPI production growth was the easing of the ban on exports of unprocessed nickel ore from Indonesia in March 2017 contributing to the availability of rich nickel ore.
Key trends in the copper market

Early 2017 saw a strike at the largest Chilean mine Escondida and a ban on copper concentrate exports from Indonesia driving copper prices up to USD 6,145 per tonne as at mid-February.

By early May, they plunged to USD 5,470 per tonne as a result of growing exchange inventories, data on decreased copper imports to China and the end of the strike, with the bounce-back starting in mid-May.

Despite the short-term correction in mid-September and late November, copper prices peaked at USD 7,216 per tonne by year-end, the highest since February 2014.

The price growth was supported by the analytical agencies forecasting the copper market deficit in 2018 due to reduced production along with a high demand for copper coming from the booming sector of electric vehicles and EV infrastructure, as well as the upward trend in the construction industry.

In 2017, the average copper price stood at USD 6,166 per tonne (up 27% y-o-y).

Market balance

In 2017, the refined copper market that had been somewhat oversupplied for the past six years moved into a slight deficit. It stood at as little as 0.2% of the total market volume, or 50 kt vs a 220 kt surplus in 2016.

Total exchange warehouse stocks remained virtually unchanged from late 2016 at 544 kt (548 kt as at the end of 2016), with off-exchange inventories going slightly down.

<table>
<thead>
<tr>
<th>Company</th>
<th>Copper production (kt)</th>
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<tbody>
<tr>
<td>Codelco</td>
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<tr>
<td>Freeport</td>
<td>9%</td>
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<tr>
<td>BHP Billiton</td>
<td>7%</td>
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<tr>
<td>Southern Copper</td>
<td>6%</td>
</tr>
<tr>
<td>Antofagasta</td>
<td>4%</td>
</tr>
<tr>
<td>Anglo American</td>
<td>3%</td>
</tr>
<tr>
<td>First Quantum</td>
<td>3%</td>
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<tr>
<td>MMG</td>
<td>3%</td>
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<tr>
<td>Southern</td>
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<td>Antofagasta</td>
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<td>First Quantum</td>
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<tr>
<td>Rio Tinto</td>
<td>2%</td>
</tr>
<tr>
<td>Vale</td>
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</tbody>
</table>

Source: Company data
Consumption

Given its high electrical and thermal conductivity, ductility and corrosion resistance, copper is widely used in various industries. Some three-quarters of refined copper produced globally are 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 2017, global consumption of refined copper totalled 23.0 mt (up 2.0%, or 0.46 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 48% in 2017 due to the demand growth of 3.2%, or 0.3 mt. During the year, it kept cutting imports of refined copper while bringing in more copper feedstock. In 2017, Chinese refined copper imports dropped by 5% to 4.7 mt, while copper concentrate and scrap imports went up by 2% and 6% to 17.4 mt and 3.6 mt, respectively. China’s growing consumption needs were mainly met through the local production ramp-up.

The demand for copper in developed economies saw only a slight increase in 2017, with Europe up (the Company’s key market for copper cathodes) by 0.2%, North America by 0.7%, and down in the USA and Canada) and in South America, – by 5.8% (marginally up in Mexico and down in the USA and Canada) and in South America – by 8.6% due to lower output in Chile. In Europe, copper production soared by 4.6% with Germany, Bulgaria and Sweden acting as the main contributors. According to preliminary estimates, Russia saw its production grow by 4% in 2017 after a 2% drop in 2016.

In 2017, global copper mine production slipped by 1.5% to 19.8 mt.

Some 31 mt of refined copper was produced from accumulated concentrate stockpiles and scrap on the back of higher scrap collection driven by higher copper prices.

The decline in copper production came as a result of Chilean strikes and technical issues experienced by the US producers.

In Peru, production was below the expectations due to strikes at the Cerro Verde, Cuajone and Toquiapata mines in early 2017. However, higher copper output at the new Las Bambas mine operated by China’s MMG drove Peruvian production up by 3%.

In the rest of Asia (excluding China), production growth was 14% (going slightly up in India and South Korea along with a slump in Japan). In North America, it shrank by 5.8% (marginally up in Mexico and down in the USA and Canada) and in South America – by 8.6% due to lower output in Chile. In Europe, copper production soared by 4.6% with Germany, Bulgaria and Sweden acting as the main contributors. According to preliminary estimates, Russia saw its production grow by 4% in 2017 after a 2% drop in 2016.

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China, which is currently developing smaller mines, saw its production grow by 6% to 1.5 mt. In Kazakhstan, commissioning of the new Bozshakol and Aktogay mines by KAZ Minerals drove the output up by 15%. A 4% growth in African production was mainly backed by Kolwezi mine in the Democratic Republic of the Congo and Sentinel mine in Zambia.

Chile, the top global supplier of copper, saw a drop in production due to a 15-month strike at BHP’s Escondida, the world’s largest copper mine, causing over 100 kt of production losses from February to March, coupled with lower output by the state-owned Codocle driven by declining copper content at its oldest fields.

In North America, production dropped by 4% due to some technical issues at the US and Canadian mines. Australia reported reduced output at the Mount Isa and Olympic Dam mines. Indonesia saw its copper output shrink by 7% following a ban on copper concentrate exports at the beginning of 2017, which made Freeport limit its operations at the Grasberg mine.

Russian copper production grew marginally in 2017. The actual refined copper production was above the analyst forecasts issued early in 2017 thanks to the production surge in the second half of the year. It was also backed by the increased use of scrap. At the same time, consumption growth was slightly above the expectations driving the global deficit down by 0.1 mt as compared to the initial estimates.

Production

In 2017, global production of refined copper increased by 0.8%, or 0.19 mt, compared to 2016, totalling 22.9 mt. China remains the key driver behind that growth, with the national government firmly committed to the expansion of domestic smelting and refining capacities. In 2017, refined copper production in China grew by 8% to 8.9 mt, while its share in global output was 36%. Only 20% of Chinese refined copper production in 2017 came from imported copper concentrates and scrap.

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Key trends in the palladium market

In 2017, palladium prices went up by a staggering 42%, hitting a 16-year high of USD 1,058 per oz by the end of the year. For FY 2017, palladium was one of the strongest performing commodities in terms of price appreciation. In late September, palladium became more expensive than platinum for the first time in 16 years, with the premium reaching as much as 17% by the end of 2017.

During the year, palladium prices were primarily driven by fundamentals, including the sustaining market deficit that saw palladium production lagging behind consumption. This was due to the expansion in global car-marking (the key consumer industry) as primary production and recycled output grew only moderately.

Along with the fundamental factors, palladium prices were supported by the environment on trading exchanges, which in 2017 were lacking in palladium inventories available for spot purchases. In the futures market, exchanges, which in 2017 were lacking in palladium inventories were going down.

Throughout the year, prices were also driven by the weak USD against other currencies and the challenging geopolitical environment, including concerns around North Korea’s nuclear programme. Given the favourable trends described above, the average annual palladium price for 2017 was at its all-time high of USD 869 per oz.

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 partially offset by the outflow from ETFs, which, however, slowed down almost twice compared to 2016.

On 23 December 2016, China’s government released the plan to implement the China 6 emission standard, one of the most stringent regulations among those in place or planned to be introduced; South African producers announced a potential decline in PGM output; poor production data came from Canadian assets; Volkswagen revealed plans to switch from small diesel engines to mild hybrids; City administrations of London and Paris announced plans to step up measures to control exhaust emissions into the air; China moved the deadline for quotas on electric cars to 2019; South Africa’s Bokoni mine will be mothballed; Palladium markets tested a major price level of USD 1,000 per oz; South Africa’s Masepo mine will be put on care and maintenance; US released strong car production data; Additional demand for cars came in the aftermath of the Irma and Harvey hurricanes; US Federal Reserve increased the interest rate; Sibanye-Stillwater announced a takeover offer for Lonmin.

Outlook: positive.

Market deficit is expected to persist amid stable production volumes and limited supply.

Impressive price growth on the back of strong demand from consumers and limited supply.

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Outlook: positive.

Market deficit is expected to persist amid stable production volumes and limited supply.
Consumption

In 2017, industrial consumption of palladium increased by 9 t (+3%) compared to the previous year, hitting a new all-time high of 331 t.

Exhaust treatment systems account for nearly 80% 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 (at least 150,000 miles in the US), palladium has almost no substitutes 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 only 24 t annually), rhodium suffers from high price volatility and the risk of physical metal deficit.

In 2017, palladium consumption by the car-making industry went up by 8 t and reached a new record of 263 t. This was driven by three groups of factors:

1) Strong growth of global car production.

Last year, car production around the world expanded by 3% vs the previous year. The strongest performers were China (+3%), Europe (+3%), Japan (+5%), and India (+6%), with Russia (+20%) and Brazil (+25%) also demonstrating a healthy recovery. A major contraction was seen in the US market (-8%), mainly on the back of a natural slowdown (following the record-high performance of 2016) that was the result of high leverage among consumers, rising interest rates, strong discounts previously secured by car manufacturers, and weak demand from car rental companies. The decline mostly affected passenger cars; by contrast, production of SUVs and small trucks (which are more reliant on PGM) is on the rise. The optimistic economic environment in the US gives hope that the domestic car market will soon recover ground.

2) Changes in the transport structure.

The key markets for diesel cars (Western Europe and India) are replacing light diesel vehicles with petrol cars and hybrids (combining petrol and electric engines), which make greater use of palladium-based catalytic converters for exhaust gases.

3) Tougher regulations on pollutant emissions.

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 5 rollout across the country starting from the end of 2017, followed by transition to China 6 in 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 also add new enhanced requirements. In the US, 2017 marked the rollout of the Tier 3 standards designed to more than halve the fleet-average NOx emissions. The EU nations are phasing in Real Driving Emissions (RDE) tests for cars and also made particulate filters mandatory for petrol engines, which additionally helps to expand the use of palladium in exhaust treatment systems.

Industrial consumption of palladium in 2017

(a new all-time high)
Today, palladium is used mainly in white gold alloys. While palladium has a number of advantages for their production and increased use of palladium in dental scrap processing.

In the healthcare sector, palladium demand continued to grow. In 2017, this demand reached 2.6 moz. The main sources of recycled palladium are used exhaust gas autocatalysts, as well as jewellery and electronic scrap. In 2017, recycled output increased by 13 t, up to 91 t, primarily due to growing collections of electronic scrap on the back of higher palladium prices, recovery in steel prices, and also implications of the Irma and Harvey hurricanes that wiped out more than 1 mln cars in the US. 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 the 1990s and 2000s, Russia’s palladium supply came primarily from the country’s government stockpiles. In recent years, Russian stockpiles ceased to be part of the palladium supply, which points to their depletion and marks the transition towards a palladium market that is completely market-driven.

In 2017, Nornickel’s Global Palladium Fund (GPF) built Pd reserves of around 0.55 moz through purchases from third parties and the Company.
Key trends in the platinum market

In 2017, platinum prices were trending sideways. Despite several spikes to above USD 1000 per oz during the year, by the end of the reporting period the metal’s price reverted to its starting point of USD 930 per oz.

The changes in platinum and gold prices in 2017 mostly occurred in sync, indicative of platinum prices being highly dependent on macroeconomic trends, which were largely positive during the year. The weak US dollar against other currencies and the challenging geopolitical environment, including concerns around North Korea’s nuclear programme, supported precious metal prices. At the same time, they faced certain pressure due to the rally in the US stock market, which resulted in some investors migrating from metals to equities.

In March–April and September, the platinum to gold equities resulted in some investors migrating from metals to pressure due to the rally in the US stock market, which faced certain with investors betting on a downward metal price trend. They took twice as many short positions in platinum (amounting to 2 mln oz) on the Chicago Mercantile Exchange (CME) as the year before, while the number of long positions increased only by a third.

The changes in platinum and gold prices in 2017 mostly occurred in sync, indicative of platinum prices being highly dependent on macroeconomic trends, which were largely positive during the year. The weak US dollar against other currencies and the challenging geopolitical environment, including concerns around North Korea’s nuclear programme, supported precious metal prices. At the same time, they faced certain pressure due to the rally in the US stock market, which resulted in some investors migrating from metals to equities.

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The largely negative sentiment drove the average annual platinum price for 2017 below the last year’s level to its twelve-year low of USD 949 per oz.

Key trends in the platinum market

In 2017, platinum prices were trending sideways. Despite several spikes to above USD 1000 per oz during the year, by the end of the reporting period the metal’s price reverted to its starting point of USD 930 per oz.

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Market balance

The platinum market was balanced in 2017. Production of primary and recycled metal exceeded industrial and jewellery consumption, but the surplus was accumulated by ETFs and private investors in the physical market.

On 23 December 2016, China’s government released the plan to implement the China 6 emission standard, one of the most stringent regulations among those in place or planned to be introduced;

South African producers announced a potential decline in PGM output; poor production data came from Canadian assets;

Volkswagen revealed plans to switch from small diesel engines to mild hybrids;

China moved the deadline for quotas on electric cars to 2019;

US released weak statistics on car production; South Africa’s Minister of Mineral Resources said that the country is planning to raise the target for black ownership in mining companies to 30%;

US released strong car production data; additional demand for cars came in the aftermath of the Irma and Harvey hurricanes;

Sibanye-Stillwater announced a takeover offer for Lonmin.
Consumption

Industrial consumption of platinum in 2017 compared to the previous year rose slightly (by 1 t, or 0.5%) and reached 243 t.

The automotive industry is the main consumer of platinum. Over 70% of platinum in this industry is used to manufacture exhaust gas catalysts for diesel vehicles.

In 2017, platinum consumption in the automotive sector decreased y-o-y by 0.9 t, or 1%, which mainly had to do with a decreased share of diesel vehicles in their key market – Europe. By December 2017, the share of diesel sales in Germany dropped from 46% to 39% y-o-y, having hit its minimum level since 2009 at 36% in September. France also saw a continued decline in diesel vehicle sales, which amounted to 47% compared to 52% in the previous year. Five years ago, that share was three quarters of the market.

India, which is a key market that had been viewed as a bastion for diesel vehicle production, was also on the decline over the recent years, with the share of diesel sales in the country’s car market having decreased twofold (from 47% to 23%) during 2012–2017.

Diesel engines are giving way to petrol-based solutions, and more expensive vehicles utilise hybrids (combining petrol and electric engines). 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.

Lower platinum consumption by passenger car producers was partially offset by increased manufacturing of heavy-duty vehicles, catalytic devices of which still rely on this metal. Diesel engines, together with hybrids, are the key and most cost-efficient solutions to achieve the EU’s targets for reducing CO₂ emissions to 95 g/km by 2020. New diesel cars comply with the existing environmental requirements, but the Volkswagen emissions scandal served to ingrain the public’s and authorities’ negative attitudes towards diesel transport, especially in the EU, where many cities are now planning to introduce a ban on old diesel cars. This gives reason to expect further declines in the share of passenger diesel cars. However, in absolute terms manufacturing of this type of vehicles will continue to show a positive trend in the near term thanks to overall growth of 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 that set in during the previous year, albeit with a lower rate (1.7 t less, or 2%). The decrease was primarily driven by lower jewellery demand in China due to consumers switching to other forms of investing. Still, China retains its high potential, especially when it comes to sales in cities with populations ranging from 150 thousand to 3 mln people.

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Despite the overall decline, the global platinum demand from jewellers was supported by India’s market recovery after the roll-out of its tax reform (according to the preliminary PGI data, the country’s platinum jewellery market grew by over 20%). Although not quite enough to offset the negative trend in the larger Chinese market, this did somewhat mitigate it.

In 2017, primary platinum consumption for industrial catalyst manufacturing increased by 0.5 t, following the ramp-up of oil and shale gas processing in North America, growth of chemicals production in Western Europe, and launch of plants in China to produce paraxylene (used for paint and varnish manufacturing and propane dehydrogenation purposes) as well as silicone and other basic chemicals. Nitric acid production slowdown put a damper on growth.

The glass industry needs platinum to produce glass fibre and optical glass used in the LCDs of the majority of electronic products. In 2017, the industry’s demand grew significantly by 1.9 t, following the advent of the new MAMR and HAMR hard drive technologies, which will greatly increase the amount of data that can be stored on a hard disk drive, breathing new life into the technology lately beleaguered by competition from solid-state drives (SSDs).

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. The 2017 y-o-y retail demand was somewhat lower (8 t), which was driven by the neutral platinum price trend and a sustained discount to gold. During the year, the investments in platinum ETFs increased by 3 t.

The electronics industry saw a modest growth in platinum consumption (by 0.9 t) triggered by the increase in the platinum-based hard drive component production due to the expansion of remote data storage capacities. The following years will see the advent of the new MAMR and HAMR hard drive technologies, which will greatly increase the amount of data that can be stored on a hard disk drive, breathing new life into the technology lately beleaguered by competition from solid-state drives (SSDs).

Global production of primary platinum in 2017 rose by 4 t (or 2%) y-o-y and reached 194 t.

South Africa, the metal’s major producer, was affected by the mothballing of the Bokoni and Maseve mines, furnace maintenance at Impala Platinum’s mines, process-related closure of the Mototolo concentrator, and challenges in accessing the ore body at the Zondereinde mine. Despite these factors, the country saw a 6 t rise in output driven by greater production volumes at other sites, especially at the Mogalakwena mine – Anglo American Platinum’s largest asset. Sibanye-Stillwater also boasted a rise in production.

As the market walks the surplus line and prices remain low, putting the margins of many projects at risk, South African producers are being lax on curbing the supply and continue to ramp up production to achieve even lower unit cost of platinum and boost revenues.

Russia saw a moderate increase in output, as lower production at Far Eastern mines was offset by higher volumes from Norilsk Nickel, which it achieved by processing copper concentrate purchased from the state-controlled Rostec corporation, using up work-in-progress inventories at Polar Division, and reducing the work-in-progress materials in transit following the now completed reconfiguration of its production facilities.

In Zimbabwe, production was marginally up, driven by the Zimplats and Mimosa mines. However, planned maintenance at the Unki concentrator in Q4 2017 brought the overall performance slightly down.

Canada sustained a significant drop in production (by 11 t, or 15%) due to lower platinum output by the Vale and Glencore assets, which was partially offset by volumes from the North American Palladium mine. In the USA, Sibanye-Stillwater’s production demonstrated moderate growth, which will be bolstered by the volumes from Blitz project that was launched in 2017.

The main sources of recycled platinum are used exhaust gas catalysts and jewellery scrap. Recycled output in 2017 amounted to 6 t (up to 59 t), chiefly due to higher automotive and jewellery scrap volumes.

Collection of autocatalyst scrap increased amid the growth of prices on steel and other PGMs, as well as due to higher recycling volumes of European diesel cars with a high platinum content in the catalysts. 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 // t

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**Annual report • 2017**

**Market overview**

**Production**

**Primary platinum production // t**

- **Canada**: 94 (1.1 t)
- **South Africa**: 212 (29 t)
- **Russia**: 79 (9.4 t)
- **USA**: 45 (5.3 t)
- **Zimbabwe**: 24 (2.8 t)
- **Other countries**: 53 (6.2 t)

**Global Platinum Association**

**Source**: Company data
BUSINESS OVERVIEW
Nornickel boasts a unique mineral resource base due to its Tier 1 assets on Russia’s Taimyr and Kola Peninsulas, in Zabaykalsky Krai. The continued expansion of the resource base secures the Company’s long-term development.

**The Group business**

**Mineral base**

Nornickel’s Polar Division develops copper-nickel sulphide deposits at the Talnakhskoye and Oktyabribskoye Fields (the Talnakh Ore Cluster). Medvezhy Ruchey develops copper-nickel sulphide deposits at the Novik Field (part of the Norilsk Ore Cluster).

The Company has a strong potential to maintain the 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 fields under exploitation. 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 cuprous ore horizons. The Company will leverage the approved projects to develop new deposits and horizons in the Talnakh Ore Cluster and promising geological exploration data to ensure a sustainable mineral resource base going forward.

**Geography of metals produced by Nornickel**

- **Taimyr Peninsula**
  - Ni, Cu, Au, Pt, Pd, Rh, Ru, Os, Ir, Osm, Ir
- **Kola Peninsula**
  - Ni, Cu, Au, Pt, Pd, Rh, Ru, Os, Ir
- **Zabaykalsky Krai**
  - Cu, Ag, Fe
- **Australia**
  - Ni
- **South Africa**
  - Ni, Cu, Co, Rh, Ru, Os, Ir, Pd

**Proven and probable reserves**

<table>
<thead>
<tr>
<th>Metals</th>
<th>Ni (mt)</th>
<th>Cu (mt)</th>
<th>PGM (kt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>15.5</td>
<td>23.8</td>
<td>125.0</td>
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</table>

**Measured and indicated resources**

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**Balance reserves of the Talnakh and Norilsk Ore**

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<th>Ni (mt)</th>
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**Proven and probable ore reserves**

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<td>125.0</td>
</tr>
</tbody>
</table>

**Kola Peninsula (Kola MMC)**

Kola MMC develops copper-nickel sulphide deposits at the Zhdanovskoye, Zapolyarnoye, Tundrovoye, Kotsalavaara-Kammikivi and Semiletka Fields as part of Pechenga ore fields. In addition to those, Pechenga ore fields include the Spartukh, Bystrinskoye and Verkhnye Fields, and Kola MMC also holds an exploration and mining licence for them.

**Balance reserves of Pechenga ore fields**

<table>
<thead>
<tr>
<th>Ni (mt)</th>
<th>Cu (mt)</th>
<th>PGM (kt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>5.2</td>
<td>0.13</td>
</tr>
</tbody>
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**Proven and probable ore reserves**

<table>
<thead>
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<th>Ni (mt)</th>
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<td>5.2</td>
<td>0.13</td>
</tr>
</tbody>
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Zabaykalsky Krai (GRK Bystrinskoye and Bugdainsky Mine)

Bystrinskoye Field

GRK Bystrinskoye develops deposits of gold-iron-copper ores at the Bystrinskoye Field.

Bugdainsky Field

Bugdainsky Mine holds an exploration and mining licence for the Bugdainsky Field.

The exploration of the field resulted in B + C1 + C2 mineral reserves entered into the government books in 2007. 2013 saw the launch of a development project at the Bugdainskoye Field in accordance with the duly approved design documents. In 2014, due to the low international molybdenum prices, the subsoil user suspended its right to develop the Bugdainskoye Field for three years. In 2017, the suspension of the right to develop the field was extended for another five years, until 31 December 2022.

Depletion of balance ore reserves in 2017

<table>
<thead>
<tr>
<th>Ore, mt</th>
<th>333</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>2.27 mt</td>
</tr>
<tr>
<td>Au</td>
<td>0.265 koz</td>
</tr>
<tr>
<td>Ag</td>
<td>25.702 koz</td>
</tr>
<tr>
<td>Fe</td>
<td>12.793 koz</td>
</tr>
</tbody>
</table>

Balance reserves of the Bystrinskoye Field (B + C1 + C2)

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<tr>
<td>Fe</td>
<td>12.793 koz</td>
</tr>
</tbody>
</table>

The total measured and indicated mineral resources of the Honeymoon Well Project are estimated at

<table>
<thead>
<tr>
<th>Ore, mt</th>
<th>173</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni</td>
<td>0.68%</td>
</tr>
</tbody>
</table>

Australia (Norilsk Nickel Cawse)

The Group holds a licence to develop the Honeymoon Well Project including:

- fields with disseminated nickel sulphide ores (Hannibal, Harrier, Corella and Hanakkia),
- the Wedgetail Field hosting solid and vein ores.

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 and not reflected in other totals.

The Nkomati disseminated copper-nickel sulphide ore deposit constitutes part of the Bushveld Complex. Nkomati is comprised of several ore bodies, the key ones being a solid sulphide ore body (rich nickel ore) and the Main Mineral Zone (MMZ). The field also contains a Pandorata Chromite Mineralisation Zone (PCMZ) with a lower metal content vs MMZ.

The proven and probable ore reserves as at the end of 1H 2017

<table>
<thead>
<tr>
<th>Ore, mt</th>
<th>88.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average content:</td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>0.31%</td>
</tr>
<tr>
<td>Cu</td>
<td>0.11%</td>
</tr>
<tr>
<td>Co</td>
<td>0.02%</td>
</tr>
<tr>
<td>PGM</td>
<td>0.88 g/t</td>
</tr>
</tbody>
</table>

Measured and indicated mineral resources

<table>
<thead>
<tr>
<th>Ore, mt</th>
<th>182.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average content:</td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>0.45%</td>
</tr>
<tr>
<td>Cu</td>
<td>0.14%</td>
</tr>
<tr>
<td>Co</td>
<td>0.02%</td>
</tr>
<tr>
<td>PGM</td>
<td>0.88 g/t</td>
</tr>
</tbody>
</table>

1 Magnetite iron.

2 At the end of 1H 2017.
Geological exploration

Taimyr Peninsula (Polar Division)

Prospecting of sulphide ores in the Norilsk Industrial District is in progress on the western flank of the Oktyabrskoye Field and in the Lobyazhninskaya Area, 20 km north-west of Norilsk, as well as in the Razvadochnaya, Mogenskaya, Khalikskaya, Nizhne-Khalikskaya and Neungdorinskaya Areas, 150 km south-east of Norilsk.

Maslovskoye Field

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

The Maslovskoye Field boasts some of the largest reserves in the world.

The licence to explore and mine copper-nickel sulphide ores at the Maslovskoye Field was obtained by the Company in 2015 following its discovery.

The Maslovskoye exploration project was reviewed and approved by the authorised expert bodies in 2016. A feasibility study of permanent exploratory standards is now in progress. In early February 2018, Norincob and Russian Platinum signed a memorandum of intent to set up a joint venture for geological exploration (follow-up exploration) of copper-nickel ores.

Exploration and follow-up exploration of copper-nickel sulphide ores are underway at the Maslovskoye Field and deep horizons and flanks of the Oktyabrskoye and Talnakhskoye Fields pertaining to the Norilsk Industrial District. Exploration of the Mokulaevskoye Field’s industrial limestone deposits has been completed.

Balance reserves of the Maslovskoye Field С1 + С2 mineral reserves

<table>
<thead>
<tr>
<th>Metal content in ore</th>
<th>Ore, mt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pd 4.56 g/t</td>
<td>32,262 koz</td>
</tr>
<tr>
<td>Pt 1.76 g/t</td>
<td>12,479 koz</td>
</tr>
<tr>
<td>Ni 0.33%</td>
<td>728 kt</td>
</tr>
<tr>
<td>Co 0.51%</td>
<td>34 kt</td>
</tr>
<tr>
<td>Cu 0.015%</td>
<td>1,304 koz</td>
</tr>
<tr>
<td>Au 0.19 g/t</td>
<td>1,104 koz</td>
</tr>
</tbody>
</table>

Field boasts some of the largest reserves in the world.

Flanks and deep horizons of the Talnakhskoye Field

The Group’s geological exploration of the unregistered reserves at the Oktyabrskoye and Talnakhskoye Fields focuses on the follow-up exploration of rich and cuprous ores.

Geological exploration (follow-up exploration) is underway on the flanks of the Oktyabrskoye Field, southern flanks of the Talnakhskoye Field and the southern flank of Mayak mine to properly assess the boundaries of producing deposits and convert C2 reserves to the C1 category. Exploration on the eastern flank of Skalitny mine and the flanks of the Severnaya 3 deposit has been completed. Following the reassessment of the Severnaya 4 deposit copper and nickel ore reserves, 7,704.2 kt of rich and cuprous ores were entered in the government books.

In 2017, thanks to the follow-up exploration at the Severnaya 4 deposit, part of the Talnakh Oree Cluster, the Company registered additional balance reserves of copper-nickel ores.

Reserves of the Severnaya 4 deposit (Oktyabrskoye Field) were re-entered in the government books in 2017.

- reserves of copper-nickel sulphide ores were entered in the government books in 2017;
- re-assessment of the Severnaya 4 deposit has been completed.

GROWTH POINTS: TALNAKH OUTLOOK

Maintaining a stable level of production at the Talnakh Ore Cluster is a mid-term priority of Norilsk Nickel’s new investment cycle launched in 2017 to secure The Company’s sustainable development.

In 2018-2020, the Talnakh mines are going to see investment of USD 1.5 bn.
Prospecting and appraisal of new copper-nickel sulphide ore areas

In 2014, the Company obtained subsoil exploration licences for prospecting and appraisal of copper-nickel sulphide ore deposits in the Lebyazhynskaya, Razvedochnaya, Mogenskaya, Khalilskaya, Nizhne-Khalilskaya and Nirungdinskaya Areas of the Taimyrsk Dolgano-Nanatskiy Municipal District (Krasnoyarsk Territory). The respective prospecting projects were reviewed and approved by the authorised expert bodies, with prospecting currently in progress, including exploration drilling to confirm anomalies identified earlier.

In 2017, the Company obtained a licence for geological exploration, including prospecting and appraisal of mineral deposits on the western flank of the Oktyabrsky and Taimyrsky mines. The prospecting and appraisal project was reviewed and approved by the authorised expert bodies. Prospecting, including drilling, is now in progress.

Kola Peninsula (Kola MMC)
No geological exploration was carried out on the Kola Peninsula in 2017.

Zabaykalsky Krai (GRK Bystrianskoye)

Geological exploration in Zabaykalsky Krai is aimed at developing and maintaining the mineral resource base of both the Company and the Chita project.

Bystrianskoye Field

The Bystrianskoye Field is located 16 km east of Gazimursky Zavod settlement.

Limestone exploration at the Mokulaevskoye Field

The field is located 10 km north and north-west of the industrial facilities of Oktyabrsky and Taimyrsky mines. The licence to explore and mine limestone at the Mokulaevskoye Field was obtained in 2017 following its discovery. The Mokulaevskoye exploration project was reviewed and approved by the authorised expert bodies. The feasibility study of permanent exploratory standards has been completed, with the mineral reserves estimation report submitted for state expert review.

Bystrinsko-Shirinskoye Field

The Bystrinsko-Shirinskoye Field is located 24 km south-east of Gazimursky Zavod lying in immediate adjacency to the Bystrianskoye Field. In 2017, the Company tested the in-situ chlorination technology at the field.

Zapadno-Shakhtaminskaya and Tsentralno-Shakhmanskaya Areas

In 2015, the Company obtained a subsoil exploration licence to prospect for and appraise deposits of copper, gold, iron and associated minerals in the Zapadno-Shakhtaminskaya and Tsentralno-Shakhmanskaya Areas. These areas are located in the south-eastern part of Zabaykalsky Krai, 22 km away from the Borzya – Gazimursky Zavod railway.

Australia (Norilsk Nickel Cawse)

Honeymoon Well Development Project

In 2017, geological exploration under the Company’s Australia licences focused on both the Honeymoon Well Nickel Project (Wedgetail, Hannibals, Harrier, Corella and Harakka Fields) and prospective Albion Downs North and Albion Downs South Areas.

Geophysical ground surveys were conducted at the Honeymoon Well Project.

The Wedgetail Field operations included the assessment of options for mining solid sulphide ores with subsequent third-party processing; drilling and geophysical surveys at a previously identified area of potential sulphide nickel mineralisation on the field’s flanks and in its deep horizons; and reinterpreting of the existing geological data to assess the potential of the field’s deep horizons.

In 2017, the subsoil user suspended its right to develop the Wedgetail Field for five years, until 7 October 2022.

Desktop studies at the Hannibals Field were conducted to interpret geological data on tectonic zoning. In 2017, drilling operations at Albion Downs North and Albion Downs South were carried out to verify geological anomalies of nickel and copper identified earlier.

Increase in the Bystrinskoye Field reserves

51.8 t

<table>
<thead>
<tr>
<th>Precious Metals</th>
<th>Cu</th>
<th>Au</th>
<th>Ag</th>
</tr>
</thead>
<tbody>
<tr>
<td>254  kt</td>
<td>9.1 mt</td>
<td>51.8 t</td>
<td>198.6 t</td>
</tr>
<tr>
<td>51.8 t</td>
<td>Cu</td>
<td>Ag</td>
<td>Fe</td>
</tr>
<tr>
<td>109.6 t</td>
<td>65.1</td>
<td>51.8 t</td>
<td>9.1 mt</td>
</tr>
<tr>
<td>9.1 mt</td>
<td>Cu</td>
<td>Fe</td>
<td>associated minerals</td>
</tr>
<tr>
<td>109.6 t</td>
<td>Cu</td>
<td>Fe</td>
<td>associated minerals</td>
</tr>
<tr>
<td>65.1</td>
<td>Cu</td>
<td>Fe</td>
<td>associated minerals</td>
</tr>
<tr>
<td>51.8 t</td>
<td>Cu</td>
<td>Fe</td>
<td>associated minerals</td>
</tr>
</tbody>
</table>
### 2017 MILESTONES

- **Talnakh Concentrator** reached the target operating rates set by the upgrade project. Its capacity increased by over 30% from 7.6 to 10.2 mtpa of ore. Metal losses in tailings were reduced, and target nickel and copper content in the collective concentrate and target quality of nickel-pyrrhotite and copper concentrates were met.

- A new tank-house section is being built at Kola MMC. Deployment of the highly efficient electrowinning technology will see the smelting of nickel anodes phased out. It will enable Nornickel to cut operating costs, drive down metal losses in the production process and improve the quality of products.

- In October, Bystrinsky GOK was launched in Zabaykalsky Krai, with hot commissioning progressding. The facility will be developing the Bystrinsky Field, a polymetallic deposit in the Gazimuro-Zavodsky District. The facility will be developed in three stages: the Bystrinsky GOK, a molybdenum deposit in the Zavodsky District, and the Bugdainskoye, a polymetallic deposit in the Gazimuro-Zavodsky District.

For more details, please see Key investment projects p. 87

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**With the key stage of our reconfiguration effort completed, Talnakh Concentrator delivered stronger recovery rates and reached its design capacity while work-in-progress inventory levels normalised, allowing us to meet production targets for 2017. Our own feedstock metals production increased by 7–15% vs 2016, with copper and platinum output beating targets by 4% and 6%, respectively. In 2018, Kola MMC will adopt chlorine leaching, with the refining capacities upgrade and expansion entering the active phase. Copper production is also expected to increase during the year, driven by both Bystrinsky GOK and the existing capacities.**

**Sergey Dyachenko**
First Vice President – Chief Operating Officer at Nornickel

---

**Ore mined across Russian assets // mt**

- Pale District and Medny Chainik (planned)
- Bystrinsky GOK (launch in 2018)
- Listvyanka (planned)
- Kola MMC, Polar Division and Medvezhy Ruchey (planned)
- Smelting Shop
- Metallurgical Plant
- Norilsk Nickel Harjavalta
- PGM

---

**Ore mined across Russian assets // mt**

- Nickel
- Copper
- PGM

---

**Metals production in 2017 – breakdown by asset // % from the overall Group production**

- Nickel
- Copper
- PGM

---

**Annual report • 2017**

**The Group business**

**Business overview**

**Productions assets and activities**

**Key investment projects**

For more details, please see Key investment projects p. 87
Operating performance for 2017

Ore mined across the Group // mt

<table>
<thead>
<tr>
<th>Asset</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Russia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polar Division and Medvezhy Ruchey</td>
<td>17.3</td>
<td>17.2</td>
<td>17.4</td>
</tr>
<tr>
<td>Kola MMC</td>
<td>8.0</td>
<td>7.6</td>
<td>7.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>25.3</td>
<td>24.8</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>South Africa</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nikovski (50%)</td>
<td>4.2</td>
<td>2.8</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Average metal content

<table>
<thead>
<tr>
<th>Asset</th>
<th>Nickel, %</th>
<th>Copper, %</th>
<th>PGM, g/t</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Russia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polar Division and Medvezhy Ruchey</td>
<td>1.27</td>
<td>1.23</td>
<td>1.29</td>
</tr>
<tr>
<td>Kola MMC</td>
<td>0.62</td>
<td>0.53</td>
<td>0.54</td>
</tr>
<tr>
<td><strong>South Africa</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nikovski</td>
<td>0.34</td>
<td>0.36</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Metals recovery in concentration // %

<table>
<thead>
<tr>
<th>Asset</th>
<th>Nickel</th>
<th>Copper</th>
<th>PGM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Russia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polar Division and Medvezhy Ruchey</td>
<td>81.3</td>
<td>77.1</td>
<td>82.4</td>
</tr>
<tr>
<td>Kola MMC</td>
<td>72.7</td>
<td>69.0</td>
<td>69.8</td>
</tr>
<tr>
<td><strong>South Africa</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nikovski</td>
<td>74.1</td>
<td>70.6</td>
<td>70.7</td>
</tr>
</tbody>
</table>

Metals recovery in smelting // %

<table>
<thead>
<tr>
<th>Asset</th>
<th>Nickel</th>
<th>Copper</th>
<th>PGM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Russia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polar Division and Medvezhy Ruchey</td>
<td>93.1</td>
<td>93.4</td>
<td>93.9</td>
</tr>
<tr>
<td>Kola MMC</td>
<td>96.5</td>
<td>96.8</td>
<td>96.5</td>
</tr>
<tr>
<td>(up to converter matte)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kola MMC</td>
<td>97.8</td>
<td>98.2</td>
<td>98.2</td>
</tr>
<tr>
<td>(in refining)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harjavalli</td>
<td>97.8</td>
<td>98.3</td>
<td>98.5</td>
</tr>
</tbody>
</table>

Saleable metals production across the Group

<table>
<thead>
<tr>
<th>Metal</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>from own Russian feed</td>
<td>220,675</td>
<td>196,809</td>
<td>210,131</td>
</tr>
<tr>
<td>Copper</td>
<td>139,425</td>
<td>365,217</td>
<td>401,081</td>
</tr>
<tr>
<td>from own Russian feed</td>
<td>352,766</td>
<td>344,462</td>
<td>357,774</td>
</tr>
<tr>
<td>Palladium, koz</td>
<td>2,669</td>
<td>2,631</td>
<td>2,760</td>
</tr>
<tr>
<td>from own Russian feed</td>
<td>2,575</td>
<td>2,526</td>
<td>2,728</td>
</tr>
<tr>
<td>Platinum, koz</td>
<td>656</td>
<td>644</td>
<td>670</td>
</tr>
<tr>
<td>from own Russian feed</td>
<td>650</td>
<td>650</td>
<td>650</td>
</tr>
</tbody>
</table>

Note: Volumes based on the 50% ownership (not included in the totals).
1 The five following metals are included: palladium, platinum, rhodium, ruthenium and iridium.
2 Saleable concentrate production based on the 50% ownership (not included in the totals).
The Group business

Production assets and activities

The Group business

Production chain

**NEW TECHNOLOGIES**

Automation and improvement of production processes, including through the introduction of simulation modelling for underground mining planning at Polar Division, helps boost output in the real-time mode and reduce costs.

- **Stripping**
  - provides access from the surface to the deposit through underground workings used to transport mined ore, people, etc.

- **Development workings**
  - The deposit is divided into separate sections, including mining levels, blocks, sublevels, stopes, etc.

- **Stoping**
  - separation of ore from the rock;
  - delivery of ore from the mine face to the haulage level;
  - maintenance of the excavated area.

- **Rock mass removal**
  - Ore is removed by load-haul dumpers and delivered to the surface by conveyors, railway and motor vehicles, or through skip shafts.

**Ore to be transported to the concentrators**

1. Mine
2. Ore body setting profile
3. Inclined shaft
4. Ramp
5. Crosscut
6. Skip shaft
7. Cage shaft
8. Haul roadway
9. Ventilation shaft

**NEW TECHNOLOGIES**

Briquetting of copper-nickel concentrate (mechanical pressing of feedstock with a binder material) replaced the obsolete pelletisation and roasting technology (using heat to remove significant portions of sulphur from the concentrate). The introduction of the new feedstock preparation technology helped substantially reduce sulphur dioxide emissions (by 35–40 ktpa at Polar Division alone). As briquettes have a higher sulphur content than pellets, during conversion the smelting shop produces gases that are richer in sulphur dioxide and are therefore easier to capture and recycle.

**Ore dressing**

- Crushing
- Screening
- Sizing
- Flotation

**Concentration**

- Ore to be used in copper production
- Concentrate to be used in nickel production

**Tailings to be transported to the tailing dump**

**Production chain**

**Mining**

**Concentration**

**NEW TECHNOLOGIES**

- Briquetting of copper-nickel concentrate (mechanical pressing of feedstock with a binder material) replaced the obsolete pelletisation and roasting technology (using heat to remove significant portions of sulphur from the concentrate).
- The introduction of the new feedstock preparation technology helped substantially reduce sulphur dioxide emissions (by 35–40 ktpa at Polar Division alone).
- As briquettes have a higher sulphur content than pellets, during conversion the smelting shop produces gases that are richer in sulphur dioxide and are therefore easier to capture and recycle.
Production chain (continued)

**Nickel production**

**NEW TECHNOLOGIES**

**Saline effluent disposal process at the tank house**

Saline effluent is a by-product of nickel refining operations that has to be disposed of. In Monchegorsk, the process is designed in the form of a closed cycle. The steam and condensate resulting from evaporation are then reused in the tank-house to heat solutions and operate heat exchangers.

The treatment facility for saline effluents also ensured a more advanced treatment of industrial discharges, with chemical agents, specifically boric acid, flowing back to the production circuit. Now, instead of having to deal with harmful waste, the Company produces additional saleable goods - sodium sulphate and chloride. Those are widely used by the chemical industry (production of synthetic detergents) and utility companies (as de-icing agents).

**State-of-the-art electrowinning technology**

The technology has been piloted at Kola MMC and is to be rolled out across the Group. Removal of the anode electric arc furnace from the production chain will help reduce emissions. Nickel powder produced in tube furnaces is used as the feedstock. This technology is less labour-intensive (the cells no longer need to be taken offline and cleaned after each loading cycle thanks to the use of insoluble anodes) and ensures zero losses of both precious and non-ferrous metals. On top of that, the resulting metal has maximum purity.
Production chain (continued)

Copper production

NEW TECHNOLOGIES

Continuous converting technology

The technology is being rolled out at NMP’s continuous copper matte converting facility (as part of two Vanyukov furnaces – the basic oxygen and slag cleaning ones) to improve its blister copper production cycle. The new process uses a cutting-edge technology to dispose of smelting gases, with sulphur being taken into a continuous stream of highly concentrated gases ready for disposal.

This technology will help reduce sulphur-rich gas emissions by at least 30%.
Taimyr Peninsula (Polar Division and Medvezhy Ruchey)

2017 MILESTONE

In 2H 2017, Norilnickel established Medvezhy Ruchey, a subsidiary that operates part of the assets of Polar Division, including Zapolyarny mine, Norilsk Concentrator, tailings pit No. 1 and Labyazhye tailing pit. The carve-out was done to create separate Talnakh and Medvezhy Ruchey sites with a view to ramping up the new unit’s capacities by raising investments.

Polar Division and Medvezhy Ruchey are the Group’s flagship subsidiaries featuring 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 fields, they mine ca. 17 mtpa of ore. In 2017, Polar Division and Medvezhy Ruchey accounted for 77% and 35% of copper and PGM output, respectively.

They 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 Territory, Russia. The sites are linked to other regions by the Yenisey River, the Northern Sea Route and

## Business overview

### Mining

#### Mining facilities

<table>
<thead>
<tr>
<th>Field</th>
<th>Mine type</th>
<th>Ore type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oktyabrskoye</td>
<td>underground</td>
<td>copper-nickel sulphide</td>
</tr>
<tr>
<td>Zapolyarny</td>
<td>high grade, cupriferous and disseminated</td>
<td></td>
</tr>
<tr>
<td>Taimyrsky</td>
<td>underground</td>
<td>high grade</td>
</tr>
<tr>
<td>Skalistaya</td>
<td>underground</td>
<td>high grade</td>
</tr>
<tr>
<td>Norilsk-1 Field</td>
<td>underground</td>
<td>copper-nickel sulphide</td>
</tr>
<tr>
<td>Zapolyarny</td>
<td>open pit</td>
<td>disseminated</td>
</tr>
</tbody>
</table>

#### Ore mined // t

<table>
<thead>
<tr>
<th>Year</th>
<th>Ore mined // t</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>6,585,208</td>
</tr>
<tr>
<td>2016</td>
<td>6,585,208</td>
</tr>
<tr>
<td>2015</td>
<td>6,585,208</td>
</tr>
</tbody>
</table>

#### Ore mined – breakdown by mine // %

<table>
<thead>
<tr>
<th>Mine</th>
<th>Ore mined – breakdown by mine // %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zapolyarny</td>
<td>51.6</td>
</tr>
<tr>
<td>Norilsk-1 Field</td>
<td>48.4</td>
</tr>
</tbody>
</table>

#### Ore mined – breakdown by metal // %

<table>
<thead>
<tr>
<th>Metal</th>
<th>Ore mined – breakdown by metal // %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>94.1</td>
</tr>
<tr>
<td>Nickel</td>
<td>4.1</td>
</tr>
</tbody>
</table>

In 2017, Polar Division’s total ore output stood at 17.4 mt, up 133 kt, or 0.8% y-o-y. The production of high grade and cupriferous ores increased by 6.5% and 1.2% y-o-y, respectively, driven by the performance of Taimyrsky mine and Skalistaya mine demonstrating a 40% growth y-o-y. Cupriferous ore production was higher thanks to Oktyabrsky mine’s results. In 2017, disseminated ore production was down by 9% – primarily due to lower output at Zapolyarny mine. The change in the volumes of ore mined was in line with the annual production plan.
Concentration facilities

- Talnakh Concentrator
- Norilsk Concentrator (now part of Medvezhy Ruchey)

Talnakh Concentrator processes high grade and

cupriferous ores from the Oktyabrskaia Field and

Oktyabrskaia Fields and Copper Plant’s low grade

disseminated ores). The key processing stages include crushing, breaking, flotation and thickening.

Norilsk Concentrator processes cupriferous and
dissminated ores from the Talnakhskoye and

Oktyabrskaia Fields. Thickened concentrates are transported via a pipeline from Talnakh and Norilsk Concentrators to smelting facilities for further processing.

In 2017, the facility processed a total of 18 mt of feedstock (including high grade, cupriferous and disseminated ores).

In 1H 2017, Talnakh Concentrator operated against the backdrop of implementing and fine-tuning a new technology, moving on to reach the design capacity in 2H 2017 and beat the 2016 ore processing volume by 1.5 mt in the full year (10.0 mt vs 8.5 mt). Nickel recovered into collective flotation concentrate from ore processed increased by 2.2% y-o-y (81.7% vs 79.5%).

In 2017, volumes of ore processed at Norilsk Concentrator were 0.6 mt lower (7.5 mt vs 8.1 mt in 2016) – in line with the mining plan. Nickel recovered into collective concentrate was 0.8% higher (71.7% vs 70.9%). During the year, the facility processed significant volumes of Copper Plant’s low grade ores.

18.0 mt

of feedstock (including high grade, cupriferous and disseminated ores) was processed by Polar Division’s Production Association of Concentrators in 2017.

Smelting facilities

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

Nadezhda Metallurgical Plant produces converter matte and elemental sulphur from the following:

- 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).

Pyrhottite concentrate from Talnakh Concentrator and stored pyrrhotite concentrate from Kayerkansky Open Pit Coal Mine are further leached in Hydrometallurgical Shop to produce steam cured sulphide concentrate. Concentrate from Talnakh Concentrator, steam cured sulphide concentrate and stored pyrrhotite concentrate from Kayerkansky Open Pit Coal Mine are delivered to the flash smelting furnaces. The matte is then blown into high grade converter matte.

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

PGM Concentrator (part of Copper Plant) recycles sludge from the tank-house 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 feedstock. Since Q4 2016, all nickel converter matte from Nadezhda Metallurgical Plant has been processed at Kola MMC due to the Nickel Plant shutdown.

<table>
<thead>
<tr>
<th>Metal</th>
<th>2016</th>
<th>2017</th>
<th>2017 % change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>292,632</td>
<td>306,859</td>
<td>+4.8%</td>
</tr>
<tr>
<td>Palladium</td>
<td>1,905</td>
<td>1,703</td>
<td>-10.6%</td>
</tr>
<tr>
<td>Platinum</td>
<td>488</td>
<td>449</td>
<td>-8.4%</td>
</tr>
</tbody>
</table>

Metals output

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

Product offering:
Kola Peninsula (Kola MMC)

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.

In 2017, Kola MMC accounted for:

- 72% Ni
- 20% Cu
- 63% PGM

* % from the overall Group production

**Breakdown of ore production at Severny mine // %**

- Severny open-pit section (off-balance ores)
- Severny underground section (Zhdanovskoe Field)
- Severny underground section (Zapolyarnoye Field)
- Kaula-Kotselvaara mine

**Ore production at Severny mine in 2017 – breakdown by metals // %**

- Kola MMC’s total ore output amounted to 7.6 mt, up 0.4% (28 kt y-o-y owing to the development of flank deposits at the Zhdanovskoye Field).

The change in the volumes of ore mined was in line with the annual production plan.

Kola MMC is currently developing the Zhdanovskoye, Zapolyarnoye, Kotselvaara and Semiletka Fields.

Severny mine (including Kaula-Kotselvaara mine) produces disseminated sulphide ores containing nickel, copper and other saleable components. Severny mine leverages various ore mining methods:

- the Zhdanovskoye Field uses sublevel longwall caving with front ore passes, block caving (limited scope of application), and open-pit mining (at Yuzyhny open pit methods);
- the Kotselvaara and Semiletka Fields 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).

Kola MMC’s total ore output amounted to 7.6 mt, up 0.4% (28 kt y-o-y owing to the development of flank deposits at the Zhdanovskoye Field).

**Mining**

**Concentration**

7.6 mt

Kola MMC’s total ore output in 2017

In 2017, Kola MMC’s Concentrator processed 7,600 mt of ore, up 32 kt y-o-y.

In 2017, the rate of metals recovery in bulk concentrate was above the 2016 level due to a lower content of hard-to-process and talcose ores in the ore mixture.

In December 2015, Kaula-Kotselvaara mine was merged with Severny mine and incorporated therein.

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- Severny underground section (Zhdanovskoe Field)
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Smetting

Smetting facilities:
- Smelting Shop (Nickel)
- Briquetting section (Zapolyarny)
- PGM Concentrator (Monchegorsk)
- Refining Shop (Monchegorsk)
- Tank-Houses 1 and 2 (Monchegorsk)

In 2017, Kola MMC continued improving production processes and proceeded with the maintenance of key production equipment at its smelting facilities. In Q1 2017, it commissioned a disposal facility for saline effluent from nickel refining operations at Tank-House 2. Tank-House 2 saw further implementation of the project for Nickel Electrowinning from Chlorine Dissolved Tube Furnace Nickel Powder with the Production Volume of 145 ktpa of Electrolytic Nickel.

Kola MMC’s refining facilities in Monchegorsk process converter matte from Nickel’s Smelting Shop and Polar Division.

Precious metals produced by Kola MMC are refined at Krasnoyarsk Precious Metals Refinery under a tolling agreement.

In 2017, Kola MMC achieved a higher metal output compared to 2016. The growth was primarily driven by larger converter matte supplies from Polar Division after production reconfiguration.

<table>
<thead>
<tr>
<th>Metal</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel, t</td>
<td>125,100</td>
<td>131,235</td>
<td>157,396</td>
</tr>
<tr>
<td>Copper, t</td>
<td>63,075</td>
<td>70,272</td>
<td>80,781</td>
</tr>
<tr>
<td>Palladium, kr</td>
<td>60 ,154</td>
<td>63,542</td>
<td>78,586</td>
</tr>
<tr>
<td>Platinum, kr</td>
<td>134</td>
<td>173</td>
<td>401</td>
</tr>
</tbody>
</table>

Metals output

In 2017, palladium and platinum output increased in Kola MMC

Mining

Bystrinsky GOK leverages the vast copper, gold and iron ore reserves of the Bystrinskoye Field.

Zabaykalsky Krai (GRK Bystrinskoye)

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

This new Nornickel project is the largest in the metals industry in Russia, as its operations include ore mining, concentration and shipment of end products to customers. The volume of ore mined and processed is expected to exceed 10.0 mtpa.

The construction of Bystrinsky GOK started in 2013. In October 2017, the Company embarked on the pre-commissioning phase. The facility is expected to switch to normal operation by the end of 2018 reaching its design capacity after 2021.

Bystrinsky GOK is located in the Gazimuro-Zavods District of Zabaykalsky Krai, 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 Zabaykalsky Krai. In 2012, the railway became operational, allowing traffic to Gazimursky Zavod.

Mining facilities

Bystrinsky GOK leverages the vast copper, gold and iron ore reserves of the Bystrinskoye Field.
Concentration

Concentration facilities
• Concentrator

The construction began in 2015. The Concentrator is intended to process rich and cupferous ores of the Bystrinskoye Field to produce copper, magnetite, and gold concentrates. The key processing stages include crushing, grinding, flotation, thickening, filtration and packaging.

The Concentrator is designed to have two separate processing streams. The first stream is now at the pre-commissioning stage. Its launch will enable the facility to reach 50% of its design capacity.

In 2018, the second stream will be commissioned for the Concentrator to unlock its full design capacity.

Copper concentrate is expected to be exported to China, while magnetite and gold concentrates will be delivered to the Company’s other facilities for further processing.

Finland (Norilsk Nickel Harjavalta)

Norilsk Nickel Harjavalta became part of the Group in 2007. It focuses on processing the Company’s Russian feedstock and nickel-bearing raw materials sourced from third-party suppliers.

Norilsk Nickel Harjavalta has a total nickel processing capacity of 66 ktpa.

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

Founded in 1960, Harjavalta is the only nickel refinery in Finland and one of the largest similar facilities in Europe.

Product offering:
• copper concentrate;
• gold concentrate;
• magnetite concentrate;
• silver.

In 2017, Harjavalta accounted for 28% Ni, 3% Cu, 2% Pd.  
1% from the overall Group production.

In Q2 2017, the refining facilities in Monchegorsk (Russia) started to gradually increase their nickel feedstock supplies to Harjavalta in line with the nickel production reconfiguration strategy. Third-party feedstock supplies included matte and converter matte from Boliden Harjavalta (Finland) (sourced in Q1 only) and nickel salts from other companies (sourced throughout 2017).

Nickel and copper recovery rates improved on the back of a drop in losses of nickel and copper with ferrous cakes.

In 2017, Norilsk Nickel Harjavalta produced 59.7 kt of saleable nickel, up 11% y-o-y. The growth was driven by the reconfiguration of refining facilities and increased nickel feedstock supplies from Kola MMC.

The third party sales of copper in copper cake totalled 13.4 kt, up 40% y-o-y. This was mainly due to the increased processing of Russian feedstock under the production reconfiguration programme.

The production of saleable palladium and platinum in copper cake dropped by 34% and 55% y-o-y, respectively, after imported feedstock had been replaced with Russian raw materials with a lower content of precious metals.

In 2018, the production targets for the Chita project:
- copper concentrate: 25–31 kt
- gold concentrate: 90–110 koz

Norilsk Nickel Harjavalta refinery

In 2017 Harjavalta accounted for:
28% Ni, 3% Cu, 2% Pd.

Process flowsheet of Norilsk Nickel Harjavalta

Utilisation of refining capacities // % of max

Breakdown of saleable nickel produced at Harjavalta // %
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 and not reflected in other totals.

Nkomati is located 300 km east of Johannesburg, Mpumalanga Province, South Africa. It is the only South African company to produce nickel concentrate, which also contains copper, cobalt, chrome and PGM.

Mining

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

The feedstock produced by open-pit and underground mining operations is processed at concentrators using sulphide floatation. The produced concentrates are then further processed at Kola MMC and third-party companies.

In 2017, total ore mined by Nkomati reached 3.5 mt (attributable to the Group’s 50% shareholding) with an average nickel content of 0.31%.

Concentration

Concentration facilities

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

The Norilsk Nickel Group accounted for 8.0 kt of nickel concentrate produced, which is lower than a year ago owing to reduced mining volumes and nickel content in ore processed.

In April 2014, massive reconstruction of Talnakh Concentrator entered its main stage. In January 2015, Stage 1 was commissioned, followed by the launch of Stage 2 in May 2016. Decision on launching Stage 3 will be made in 1H 2018.

<table>
<thead>
<tr>
<th>Output of Nkomati a</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel, t</td>
<td>11,350</td>
<td>8,486</td>
<td>8,006</td>
</tr>
<tr>
<td>Copper, t</td>
<td>5,381</td>
<td>4,067</td>
<td>4,984</td>
</tr>
<tr>
<td>Palladium, koz</td>
<td>53</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td>Platinum, koz</td>
<td>20</td>
<td>15</td>
<td>20</td>
</tr>
</tbody>
</table>

a Metal in concentrate for sale assuming 50% ownership.

Key investment projects

In January 2015, Stage 1 was commissioned, followed by the launch of Stage 2 in May 2016. Decision on launching Stage 3 will be made in 1H 2018.
The Group business

Production assets and activities

Skalistaya mine
Norilsk Industrial District, Krasnoyarsk Territory (Polar Division)
Increasing ore production from 1.8 mtpa to 2.2 mtpa in 2018 and to 2.4 mtpa by 2024 by striping and extracting rich cupriferous ore reserves of the Talnakhskoye and Oktyabrskoye Fields.

Highlights
- Ore reserves: 65.0 mt
- 2017 CAPEX of ca. RUB 13 bn (ca. USD 216 mln)
- 2018–2024 CAPEX of ca. RUB 65 bn (USD 1.1 bn)

Average metal content
- Ni 2.7%
- Cu 3.1%
- PGM 8.0 g/t

Project schedule
- 2017
  - Production ramp-up to 1.75 mt
  - 152 m sinking of ventilation shaft–10 (total of 19 km out of 21 km)
  - 322 m sinking of skip-cage shaft–1 (total of 17 km out of 21 km)
  - Drifting of 4,519 m
- 2018
  - 500 kt capacity commissioning
  - Completion of ventilation shaft
- 2019
  - Completion of skip-cage shaft–1 construction
- 2020
  - Completion of infrastructure construction
- 2024
  - Production ramp-up to 2.4 mt

Taimyrskiy mine
Norilsk Industrial District, Krasnoyarsk Territory (Polar Division)
Increasing ore production from 3.6 mtpa to 3.8 mtpa by 2020 by striping rich copper-nickel ores at the Oktyabrskoye Field.

Highlights
- Ore reserves of 63.0 mt
- 2017 CAPEX of ca. RUB 8.4 bn (ca. USD 53 mln)
- 2018–2023 CAPEX of over RUB 22 bn (ca. USD 177 mln)

Average metal content
- Ni 2.3%
- Cu 3.5%
- PGM 7.3 g/t

Project schedule
- 2017
  - 7 km of underground workings completed
  - Ca. 3 km of underground workings completed
  - 100 kt of new capacity completed
- 2018
  - Capacity commissioning (500 kt of rich ore)
  - Upgrading the host system at skip shaft No. 3
- 2019
  - Capacity commissioning (200 kt of rich ore)
- 2020
  - Capacity ramp-up to 3.8 mt
- 2021
  - Capacity commissioning (400 kt of rich ore)

Oktyabrskoye mine
Norilsk Industrial District, Krasnoyarsk Territory (Polar Division)
Increasing ore production to 5.2 mtpa by 2023 by striping high-grade, disseminated and cupriferous ores at the Oktyabrskoye Field.

Highlights
- Ore reserves of 96.0 mt
- 2017 CAPEX of ca. RUB 4 bn
- 2018–2023 CAPEX of over RUB 60 bn (ca. USD 95 mln)

Average metal content
- Ni 1.0%
- Cu 3.1%
- PGM 7.6 g/t

Project schedule
- 2017
  - 300 kt capacity commissioning
- 2018
  - 1.8 km of underground workings completed and 100 kt of new capacity completed
  - Capacity commissioning (500 kt of rich ore)
  - Upgrading the host system at skip shaft No. 3
- 2019
  - Capacity commissioning (200 kt of rich ore)
- 2020
  - Capacity ramp-up to 3.8 mt
- 2021
  - Capacity commissioning (400 kt of rich ore)
- 2022
  - Capacity commissioning (500 kt of rich ore and 700 kt of cupriferous disseminated ore)
- 2024
  - Capacity commissioning (300 kt of cupriferous ore)

Komsomolsky mine
Norilsk Industrial District, Krasnoyarsk Territory (Polar Division)
Increasing ore production to 3.8–4.0 mtpa before 2020.

1 excluding Skalistaya mine.

Highlights
- Ore reserves of 22.9 mt
- 2017 CAPEX of ca. RUB 1.2 bn
- 2018–2022 CAPEX of over RUB 12 bn (ca. USD 18 mln)

Average metal content
- Ni 1.5%
- Cu 1.8%
- PGM 5.5 g/t

Project schedule
- 2017
  - Power supply system completed at the southern ventilation shaft
  - Ca. 3 km of underground workings completed
  - 100 kt of rich ore capacity commissioned
- 2018
  - Completion of the western backfilling shaft reconstruction
  - Capacity commissioning (200 kt of cupriferous ore)
- 2019
  - Capacity commissioning (775 kt of rich ore)
- 2020
  - Capacity commissioning (225 kt of rich ore and 200 kt of disseminated ore)
The Sulphur Project is the umbrella name for an environmental programme to achieve a reduction in aggregate sulphur dioxide emissions across Polar Division by 75% by 2023 vs 2015.

### Nadezhda Metallurgical Plant

Nadezhda Metallurgical Plant will have new facilities capturing sulphur-rich gases, while sulphur acid will be neutralised with natural limestone, with waste gypsum produced as a result. In addition, a revolutionary continuous copper matte converting unit will be built. Its emissions will also be used to produce sulphur acid.

### Copper Plant

Meanwhile, Copper Plant will see its elemental sulphur production capacities ramped up and the entire converter section shut down.

#### Highlights

- **2017 CAPEX** of ca. RUB 2.2 bn (ca. USD 37 mln)
- **Less sulphur dioxide emissions** 75% by 2023
- **Estimated project costs of ca.** USD 2.6 bn
- **Completion scheduled for** 2022

#### Continuous copper converting facility:

- Obtaining the State Expert Review Board’s approval for the NMP project;
- Launching the Implementation stage to prepare engineering documents, start tender procedures for long lead equipment and select an EPC contractor for the NMP project.

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**SULPHUR PROJECT**

Copper Plant and Nadezhda Metallurgical Plant (NMP), Norilsk Industrial District, Krasnoyarsk Territory

**PROJECT STATUS**

- **2016–2017**
  - Nadezhda Metallurgical Plant:
    - design specifications developed and approved, feasibility study prepared and approved;
    - first long lead equipment arrangements made;
    - design documents developed under a contract with Kazgiprotsvetmet
  - Copper Plant:
    - design specifications developed, feasibility study prepared;
    - engineering surveys required to develop key technical solutions to bring project up to date completed.

- **2018 targets**:
  - Nadezhda Metallurgical Plant:
    - launching the Implementation stage to prepare engineering documents;
    - obtaining the State Expert Review Board’s approval for the project;
    - start tender procedures for long lead equipment and select an EPC contractor for the project.
  - Copper Plant:
    - Gipronickel Institute preparing engineering documents for non-standardised equipment;
    - launching the Implementation stage to prepare engineering documents;
    - arranging a tender to select a contractor for further implementation of the project, with on-site preparations.
  - Continuous copper converting facility:
    - Obtaining the State Expert Review Board’s approval for the NMP project; launching the Implementation stage to prepare engineering documents, start tender procedures for long lead equipment and select an EPC contractor for the NMP project.
Tank-House 1 saw refurbishment of buildings, equipment, and utility and ventilation systems. The project was completed in 2016. Tank-House 2 is to be transformed into an advanced, cost-efficient cathode nickel facility by introducing the technology of nickel electrowinning from chlorine dissolved tube furnace nickel powder.

CONSTRUCTION OF A COPPER-NICKEL ORE CONCENTRATE SHIPMENT FACILITY

Zapolyarny, Murmansk Region (Kola MMC)

The new facility will enable the Company to split its copper-nickel concentrate into low-grade and high-grade.

No low-grade concentrate processing will lead to significant cuts in sulphur dioxide emissions in Nickel. By re-arranging shipments of low-grade concentrate from Kola MMC to a third-party processor, the Company will be able to decommission ore-thermal furnace No 3 in the smelting shop and cut the operating costs.
Gas and energy assets

2017 MILESTONES

Norilskgazprom and Taimyrgas (Nornickel’s gas producers) completed an investment project to build 12 production wells at the Pelyatkinskoye Gas Condensate Field. When commissioned, the wells will fully cover the peak demand for natural gas from the Norilsk Industrial District in winter.

At Ust-Khantayskaya hydropower plant (HPP), a new hydroelectric unit was put in operation as part of the third phase of an extensive programme to replace hydroelectric equipment. In 2012, Nornickel made a decision to replace seven adjustable blade hydroelectric units that had been operating for over 40 years. Improved reliability and service life of at least 50 years are among the key advantages of the new machinery. The first phase of the replacement programme was completed in November 2015, followed by the second phase in January 2016 and the third phase in August 2017, a month ahead of schedule.

Gas assets

Taimyrgas

Taimyrgas operates the Pelyatkinskoye Field, which has Taimyr’s largest hydrocarbon reserves. Currently, it is a primary source of natural gas fully covering the needs of the Norilsk Industrial District.

In 2017, Taimyrgas worked on expanding its gas and gas condensate production and treatment capacity while improving the reliability of its core equipment:
- Drilling of sidetracks No. 410, 411 and 846 completed;
- Wells and a gas gathering system constructed and put in operation at well pad No. 4 followed by an increase in gas output by 1.2 mcm per day;
- Well pads No. 5 and 6 installation completed and automatic controls introduced at wells No. 100 and 102 of the Pelyatkinskoye Field to remotely monitor their performance; additional equipment went online to protect the system against pressure drops;
- Fire alarm and protection system designed for the Pelyatkinskoye Gas Condensate Field.

Norilskgazprom

Norilskgazprom operates the Messoyakhskoye Gas Field and Yuzhno-Soleninskoye and Severo-Soleninskoye Gas Condensate Fields.

In 2017, the company focused on expanding its gas and gas condensate production and treatment capacity while improving the reliability of its core equipment:
- Construction of a gas distribution compressor station completed in Tukhard; the facility will be later handed over to Norilsktransgaz;
- Condensate and methanol storage tanks and bunding around them repaired at the Messoyakhskoye Gas Field and Severo-Soleninskoye Gas Condensate Field;
- Technical inspections and industrial safety assessments performed, with over 150 machinery units, buildings and structures certified as safe.

Taimyrtransgaz

Norilsktransgaz transports natural gas and condensate to consumers in the Norilsk Industrial District.

The company was established as a result of Norilskgazprom's reorganisation in 2016 through the spin-off of the gas transportation system. In 2017, Taimyrtransgaz was liquidated, with its gas transportation assets and personnel transferred to Norilsktransgaz.

Norilsktransgaz transports natural gas and condensate to consumers in the Norilsk Industrial District.

Natural gas and gas condensate reserves as at 31 December 2017

<table>
<thead>
<tr>
<th>Field</th>
<th>Residual hydrocarbon reserves at licence blocks (A+B categories)</th>
<th>Natural gas production // mcm</th>
<th>Gas condensate production // kt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messoyakhskoye Gas Field</td>
<td>Free gas, bcm</td>
<td>Recoverable condensate, mln t</td>
<td>Free gas, bcm</td>
</tr>
<tr>
<td>Yuzhno-Soleninskoye Gas Condensate Field</td>
<td>6.8</td>
<td>–</td>
<td>2.006</td>
</tr>
<tr>
<td>Severo-Soleninskoye Gas Condensate Field</td>
<td>52.8</td>
<td>0.5</td>
<td>2.404</td>
</tr>
<tr>
<td>Taimyrgas</td>
<td>44.0</td>
<td>0.5</td>
<td>2.404</td>
</tr>
<tr>
<td>Pelyatkinskoye Gas Condensate Field</td>
<td>185.7</td>
<td>6.8</td>
<td>2.006</td>
</tr>
<tr>
<td>Total residual reserves</td>
<td>289.3</td>
<td>7.9</td>
<td>2.006</td>
</tr>
</tbody>
</table>

The Company’s gas assets operate as a stand-alone business unit focusing on sustainable development of the entire Norilsk Industrial District.
Energy assets

NTEK (Norilsk-Taimyr Energy Company)

NTEK engages in power and heat generation, transmission and distribution using the facilities of Norilskenergo (MMC Norilsk Nickel’s branch) and Taimynergoko. The energy sources include renewables (hydropower) and gaseous hydrocarbons (natural gas).

NTEK supplies electric power, heat and water to Norilsk and all facilities in the Norilsk Industrial District. By 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. The company operates five generating facilities: three thermal power plants (TPP-1, TPP-2 and TPP-3) and two hydropower plants. Installed electricity generation capacity of the thermal power plants is 1,205 MW, while the total installed capacity of all the plants is 2,246 MW.

In 2017, thermal power plants generated 4,360 million kWh of power; hydropower plants produced 3,069 million kWh, up 139.5 million kWh against 2016. NTEK managed to bring headwater levels in the water storage reservoirs of its hydropower plants to their multi-year average to match the peak loads during the 2017–2018 heating season.

Ust-Khantayskaya and Kureyskaya HPPs (441 MW and 600 MW of installed capacity, respectively) are the two renewable power generation facilities operated by NTEK.

In 2017, renewables accounted for 38% of total power consumed by the Norilsk Nickel Group and 44% of power consumption in the Norilsk Industrial District.

The investment programme of the Norilsk Nickel Group includes several large-scale priority projects to fully unlock the potential of renewable power sources:

- replacement of obsolete hydroelectric units at Ust-Khantayskaya HPP to make better use of water resources, increase total power output, and improve the reliability of energy supplies to the Norilsk Industrial District;
- retrofitting at TPP-2 units 1 and 2;
- replacement of wooden poles with steel poles (a 5 km section at the plant’s phase 1);
- introduction of an automated dispatch system at Ust-Khantayskaya HPP;
- construction of a hydrogen generation unit at TPP-2.

In 2017, extensive efforts were invested in improving energy efficiency. As a result, NTEK achieved savings of 100,116 tonnes of reference fuel (units), 44.9 million kWh of electricity and 177,732 Gcal of heat against plan. With 49 initiatives introduced to save on fuel and energy, fuel consumption at the thermal power plants decreased to 281.4 g/kWh in 2017, down by 13.9 g/kWh against plan and 27.7 g/kWh year-on-year.

Bystrinsk Electric Grid Company

Bystrinsk Electric Grid Company was established in 2015 as a construction management business to carry out the investment project of building overhead Kharanorskaya GRES – Bystrinskaya – Dudinka 220 kV power line from the 220 kV Bystrinskaya substation.

In 2017, the company:
- completed construction and installation activities;
- performed individual and integrated systems tests;
- obtained commissioning certificates;
- registered title to the facilities.

In late 2017, the overhead line and substation were formally transferred to FGC UES in accordance with the contract for the sale of power grid facilities.

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. The new unit will be operating a 227 km private railway line, which was built under a public private partnership to connect Naryn (Borzya) and Garmi.

Transportation assets

2017 MILESTONES

Nornickel Group increased its stake in Krasnoyarsk River Port to 88.77% of the company’s shares. The transactions were part of the strategy of Nornickel’s transportation and logistics function, which focuses on boosting the efficiency and streamlining the management of the Group’s transportation assets.

In March 2017, the second berth was put in operation at the transfer terminal in Murmansk, taking its container handling capacity to 15 mtpa. According to Marina Kovtun, Governor of the Murmansk Region, “one and a half million tonnes is a large transshipment volume that contributes to new jobs and the overall development of Murmansk Sea Port, helping to attract investors to the region and enhancing Murmansk’s position as a key port in the Arctic Zone”.

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. The new unit will be operating a 227 km private railway line, which was built under a public private partnership to connect Naryn (Borzya) and Garmi.

Transportation and logistics assets

- Murmansk
- Dudinka port
- Norilsk Airport
- Krasnoyarsk River Port (88.77% stake)
- Bystrinsky Transport Division
- Yensky River Shipping Company (81.59% stake)
- Krasnoyarsk River Port (51% stake)
- Bystrinsky Transport Division
- Murmansk Transport Division
- Arkhangelsk Transport Division
- Norilsk Transport Division
- Vorkuta Port
- Yermak electric locomotive diesel locomotive
- 555 river vessels
- 18 helicopters
- 6 heavy-duty ice-class vessels
- 15 aircrafts
- 65 container tugs
- 81,99% stake
- 51% stake
- 88,77% stake
- 81,59% stake
Given the exceptional location of our production facilities in relation to key supply bases and distribution markets, transport infrastructure and freight logistics are a primary focus for Norilsk Nickel.

Capitalising on their reliability and sophistication, the Company is well-positioned to address the most difficult tasks in freight deliveries and to ensure undisrupted operations across its facilities.

Norilsk Nickel’s transportation and logistics assets use various means of transportation and freight forwarding services, responding to freight logistics challenges faced by the Company and its customers.

The Company has a unique Arctic fleet comprising five Norilsk Nickel container vessels and one Yenisei heavy-duty, ice-class tanker (ARC 7 under the PMPIC classification). The vessels are able to break through 1.5 m thick Arctic ice without icebreaker support.

The Yenisey tanker is used to transport gas condensate from the Pelyatkinskoye Gas Condensate Field to European ports and other destinations. In 2017, 66 shipping services between Dudinka, Murmansk, and Hamburg sea ports while also covering other destinations. In 2017, 55 flights from Moscow, St. Petersburg and other cities.

Norilsk Avia responds to industrial and social needs of the Norilsk Industrial District and the Dolgano-Nenets Municipal District of the Taimyr Peninsula. The company provides air transportation services related to operations of the Norilsk Nickel Group, emergency medical services, search-and-rescue operations, and local passenger traffic.

Norilsk Avia is a rapidly developing aviation project launched on 17 December 2008, when the Board of Directors of Taimyr Air Company (a wholly owned subsidiary of MMC Norilsk Nickel) resolved to establish Moscow Branch of Taimyr Air Company along with the Norilsk Airlines brand.

The company’s fleet comprises 15 aircraft, nine Boeings 737-800, one Boeing 737-300 and five ATRs 42-500. With passenger traffic in excess of 1 million people per year, Norilsk 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. Each year, Norilsk operates seasonal charter flights from Moscow, St. Petersburg and other cities.

Cargo transportation in 2017

<table>
<thead>
<tr>
<th>Cargo transportation in 2017</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dry cargo transportation by the Company’s fleet // mtpa</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern / Non-Norilsk</td>
<td>18.0</td>
<td>15.3</td>
</tr>
<tr>
<td>Third-party customers</td>
<td>12.0</td>
<td>11.2</td>
</tr>
<tr>
<td><strong>Transportation by Yenisey tanker // ktpa</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern / Non-Norilsk</td>
<td>12.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Third-party customers</td>
<td>13.0</td>
<td>13.0</td>
</tr>
<tr>
<td><strong>Waterway cargo traffic at Murmansk terminal // mtpa</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern / Non-Norilsk</td>
<td>11.0</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>Waterway cargo traffic at Dudinka port // mtpa</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern / Non-Norilsk</td>
<td>11.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Yenisey</td>
<td>2.9</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Investments in transportation and logistics assets

<table>
<thead>
<tr>
<th>Investments in transportation and logistics assets</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>72.2</td>
<td>77.7</td>
</tr>
<tr>
<td><strong>Cost items</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital construction</td>
<td>17.9</td>
<td>22.2</td>
</tr>
<tr>
<td>New equipment</td>
<td>10.4</td>
<td>11.4</td>
</tr>
<tr>
<td>Other costs</td>
<td>6.0</td>
<td>8.6</td>
</tr>
</tbody>
</table>

**Note:** +15% traffic growth of the Company’s own rail and locomotive fleet in 2017.
At Polar Transport Division (Dudinka port), the Company completed the first phase of repairs at Berths No. 4 and 5 and engineering surveys for the repair of Berth No. 3 in 2017. The repair programme to prevent the mooring wall destruction is scheduled to be completed in 2018. The Company modernised a fire water line at the log yard and introduced an integrated safeguarding system at port facilities. Additionally, two Liebherr mobile cranes and a mobile crane boom were purchased, two Liebherr crane booms were purchased for replacement in 2018, and a hangar was acquired to repair mobile cranes. The Company also purchased 10 units of road vehicles and cargo handling equipment.

In 2017, Yenisey River Shipping Company continued working on shipbuilding at Krasnyansk Ship Repair Yard and engineering design of new shipbuilding facilities. The project was launched in 2017 to provide the Company with its own river vessels to replace retiring ships. The USD 3.4–5.1 mln (RUB 0.2–0.3 bn) project is expected to be completed in 2019. An automatic fire extinguishing sprinkler system was installed in the administrative building. The work is ongoing to improve onshore infrastructure facilities and increase the level of traffic safety by installing CCTV and fuel monitoring systems on vessels.

In 2017, the Company continued improving logistics processes in its transportation facilities and units. For Krasnoyarsk River Port and Lassosibirsk Port, it was the first navigation period to use the Automated Cargo Logistics Management System (ACLMS) as a master management system. Despite certain challenges, the introduction of ACLMS improved coordination between transshipment ports, carriers and end customers and provided a single reporting platform for freight transportation by river. These efforts will continue.

Production and sales

In 2017, Norilsk Nickel 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.

Product range

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

Over the last three years, Norilsk Nickel increased nickel supplies to segments other than stainless steel production by 32% (the 2017 supplies exceeded 100 kt of nickel), which was achieved by leveraging a focus strategy to boost sales to Chinese and Russian alloy stainless steel (200 and 300 series) markets. The Company considers joint ventures to produce nickel- and cobalt-bearing value-added products for 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. Norilsk Nickel Harjavalta’s nickel sulphate is rightly considered the industry benchmark and is widely used by producer to stimulate demand and is widely used in battery manufacturing. The Company plans to proactively market briquettes, which are traditionally supplied to stainless steel manufacturers, among battery and precursor producers.

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. Norilsk Nickel Harjavalta’s nickel sulphate is rightly considered the industry benchmark and is widely used in battery manufacturing. The Company plans to proactively market briquettes, which are traditionally supplied to stainless steel manufacturers, among battery and precursor producers.

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Sales strategy

Sales, along with production, have traditionally been a key value adding line of Norilnickel’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.

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 Norilnickel’s priorities is stable supply amid the growing demand for PGM:

- The Company refused to launch a marketing programme aimed at promotion of palladium in jewellery manufacturing in order to make it clear to the market that it intends to focus on supplying palladium for the automotive industry;
- In 2016, the Company established the Global Palladium Fund (GPF). In 2017, the GPF built Pd reserves of around 0.55 mln oz to safeguard supplies for the increasing demand from key consumers that are the Company’s customers in 2018 and onwards (mostly from the automotive industry). The reserves were formed from purchases of metal from third parties and the Company itself in accordance with consumer requirements to the product range.

To boost sales premiums and liquidity, Norilnickel registers its products on the world’s major exchanges, including the London Metal Exchange and Shanghai Futures Exchange.

Research and development

The Group’s main R&D facility is Gipronickel Institute, one of Russia’s largest research and engineering hubs for mining, metallurgy, concentration and processing of minerals that develops a wide range of research and technology products.

In 2017, in addition to Gipronickel Institute, the Company used over 35 domestic and foreign research and engineering companies and also Russian Universities, including: IPKON (Moscow), Siberian Federal University (Krasnoyarsk), VNIMI (St Petersburg), Outotec (St Petersburg), Norilsk State Industrial Institute (Norilsk), Mekhanobr Engineering (St Petersburg), NPO Atmosfera (Perm), VNIIR (Kuzan), MIPT (Moscow), Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials (Apatity), SPS-Giproshakht (St Petersburg), St Petersburg Mining University (St Petersburg), Uralmekhanobr (Yekaterinburg), RZD Logistics (St Petersburg), etc.

Norilnickel’s R&D activities mainly focused on research, technological development, and feasibility studies under the Company’s updated strategic development plan.

The Company also carried out its operating efficiency programme for 2015–2017 aimed at finding unique solutions to streamline the mining planning process, increase overall recovery rates for nickel, copper, cobalt and PGM, re-process secondary resources (ballings, copper slags, and nickel bearing pyrrhotite with a low nickel content), and optimise the work-in-progress inventory levels. Other programmes included upgrade of nickel and cobalt production technologies at Kola MMC, improvement of product quality and optimisation of production costs.

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Results in key R&D areas in 2017

Company Development Strategy

- feasibility study to choose the optimal design for the Company’s copper refining facilities (stage 2);
- operating procedures for a feasibility study on refining non-ferrous and precious metals.

Production

Mining:
- adjusted design documents at the mines;
- feasibility study on building an underground crushing section at Skalistaya mine;
- audit of mechanical-earth models of Polar Division mines (stage 1);
- feasibility study on using tailings for backfilling on Takhakh mines and on providing Polar Division with limestone and cement.

Concentration:
- project on producing high-grade and low-grade concentrate at Kola MMC’s concentrator and organising shipments of the high-grade concentrate to be accepted and processed at Nadezhda Metallurgical Plant of the Company’s Polar Division;
- adjusted operating procedures for ore enrichment at the Bystrianskoye Field;
- adjusted operating procedures for simultaneous processing of disseminated and cuprous ore mixture at Stage 3 of the Taimakh Concentrator.

Smelting:
- adjusted operating procedures to design nickel production facilities at Kola MMC based on the chlorine leaching technology, which will improve the tank-house-2 capacity to 145 ktpa of cathode nickel;
- adjusted operating procedures to design continuous converting facilities at Nadezhda Metallurgical Plant;
- development of operating procedures to design the upgrade of copper production facilities on the new roast–leach–electrowin technology at Kola MMC;
- development of operating procedures and feasibility study for the process to neutralise sulphuric acid with natural limestone.

Environmental protection

- development of operating procedures and feasibility study to produce elemental sulphur;
- inventory of air emissions and development of draft limits for maximum permissible emission at Polar Division’s core production facilities;
- comparison of the technology for producing sulphuric acid and neutralising it with natural limestone vs elemental sulphur production technology used at Nadezhda Metallurgical Plant.

The Company’s supply management units are tasked with ensuring timely, adequate and comprehensive supplies as required for uninterrupted operations, which means procurement on the best possible terms.

With its diverse businesses (from construction of Bystriansky GOK to reconstruction of Norilsk Airport in the Far North) and geography of operations, the Company faces many challenges it has to address in terms of procurement.

The procurement plan covers 48 aggregated categories – from construction and installation services and equipment to food supplies. For purchases of general-purpose industrial machinery and equipment only, the Group has set up some 200 sub-categories.

The supplies are shipped along the Yenisey River and the Northern Sea Route using the Company’s own fleet during the navigation season, as well as by air. There is no railway or motorway connection between the Taimyr Peninsula and mainland Russia, which makes delivery by land to the Norilsk Industrial District impossible.

Supply management operations include:
- requirements planning and supply management;
- procurement.

The Company needs to focus on optimising inventory, to minimise its working capital. Idle inventory, if any, is assessed based on production needs. Depending on the results, the Company decides whether it is going to be:
- used in production as and when needed;
- sold;
- written off and disposed of.

Overall, 2017 saw the Company implement a set of optimisation measures with respect to requirements planning and meeting the needs of its key productions sites. Changes in the structure of production assets had an impact on the volume and composition of the Company’s inventory. At the same time, Polar Division and Kola MMC, the Company’s major productions sites, decreased their inventory for core operations by 3.06% to an absolute level of USD 380 mln (RUB 22.2 bn), while also fully meeting the needs of their production, repair and other units.
Procurement


The Company develops procurement policies for select materials and supplies that establish binding principles and approaches to procurement in specific product groups. In 2017, the Company purchased ca. 33% of supplies for core operations in specific product groups. In 2017, the Company signed over 4,000 contracts for centralised procurement of materials and equipment worth around USD 1.6 bn, with a total price decrease in the reporting year of 5%, which is below the levels recorded by the Federal State Statistics Service.

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 2017, 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 325 mln (RUB 19 bn). The Company’s tender committee focuses on improving procedures for identifying reliable suppliers of quality products at a fair market value.

Nornickel provides support to tenders run by the Company’s Russian subsidiaries and branches. In 2017, the Company oversaw tender procedures to purchase services for over USD 343 mln (RUB 20 bn). In 2017, the Company signed over 4,000 contracts for centralised procurement of materials and equipment worth around USD 1.6 bn, with a total price decrease of 5%, which is below the levels recorded by the Federal State Statistics Service.

At Nornickel, the procurement process is certified for compliance with ISO 9001 and ISO 14001. At Nornickel, the procurement process is certified for compliance with ISO 9001 and ISO 14001. In the reporting year efforts focused on developing and implementing procurement guidelines, and harmonising the regulatory procurement framework across Russian subsidiaries and branches, including services procurement, were continued.

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 automation and stronger competition

Nornickel has put in place SAP SRM, an automated solution for supplier relationship management. The Company also widely uses independent bidding platforms, such as Fabrikant.Ru or B2B-Centre. These solutions help improve the supplier selection transparency and competitive environment when procurement procedures are underway.

Nornickel pays close attention to fostering ties with reliable domestic suppliers and contractors. Foreign suppliers are mainly engaged for delivering unique equipment or systems that do not have Russian alternatives.

As at the end of 2017, domestic suppliers outnumbered foreign ones by 14 to 1.

Preventing corruption and other misconduct

Nornickel’s Corporate Security Unit evaluates the business reputation, reliability and solvency of potential counterparties to mitigate risks.

To prevent potential 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).

The purchases made by certain subsidiaries of Nornickel are subject to Federal Law No. 223-FZ On Procurement of Goods, Work and Services By Certain Types of Legal Entities dated 18 July 2011. As part of anti-corruption efforts undertaken by the Company, these subsidiaries must disclose additional details in the unified information system, including:

- annual volume the customer is required to procure from small and medium businesses; and
- the number and total price of contracts awarded to small and medium businesses.
Corporate responsibility

HR and social policy

2017 MILESTONE

In its rating HeadHunter recognised Norilsk Nickel as Russia’s top employer in the metals and mining industry. This high ranking came as a result of the Company’s efforts to build a strong team of professionals.

On top of that, MMC Norilsk Nickel was named the fourth most popular employer with job seekers.

Strategic focus

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 to make sure we are on track with the accomplishment of our mission.

To further increase the efficiency of the corporate culture development programme, we integrated our values into the key HR management processes:

- recruitment (we used values to set targets and train the managers and HR staff in job interviewing);
- assessment (we launched a 360-degree review for top executives involved in value-based management);
- development (we developed an Our Values training module, Program of the Workshop on the Application of the White Paper1 and conducted a number of value assignment business games and a hands-on training session in Value-Based Management);
- succession planning (we aligned the training programme with our values).

Our key value is reliability. Throughout the Company’s history, we have delivered on our commitments in production and social areas. Today, Norilsk is working hard to develop social infrastructure and digital economy, provide support to indigenous peoples and national minorities of the North, and markedly improve the environment across its footprint – from Taimyr to the Kola Peninsula and Zabaykalsky Krai.

We joined forces with local authorities and communities to support the volunteer movement, provide grants to socially important projects, and aide charitable foundations, sports organisations and artistic associations. Over the last years, the unique expertise and know-how we have acquired from Taimyr to the Kola Peninsula and Zabaykalsky Krai.

Larisa Zelkova
Senior Vice President for HR, Social Policy and Public Relations

In 2017, more than 3,500 managers, specialists and workers from the Group’s 60 facilities took part in the corporate culture development training sessions and forums designed and organised by the Social Policy Department. The Company established working groups to develop and roll out business initiatives on improving systems and processes. In 2018, the programmes are set to have a wider coverage.

In the reporting year, the Company launched a series of personnel engagement management initiatives, which included:

- providing employees with an opportunity to maintain an ongoing dialogue with the management;
- assessing the staff motivation to achieve targets and approving changes in the business processes and working conditions based on objective data;
- identifying tools to enhance the competitive edge in human resources and boost the Company’s appeal as an employer.

Over 73,000 employees from the Company’s 32 facilities and Russian subsidiaries took part in the personnel engagement survey.

Our social and HR policy prioritises social stability of the workforce deployed across the Group’s companies and geography.

In 2017, the Norilsk Nickel Group’s average headcount totalled 78,000 people in Russia and 1,000 people abroad.

Most of the Russia-based employees (69%) work in Norilsk and the Taimyrsky Dolgano-Nenetsky Municipal District. Another 17% of the Group’s Russian headcount work on the Kola Peninsula.

Evolution of the Norilsk Nickel Group’s average headcount

<table>
<thead>
<tr>
<th>Region/country of operation</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>81,637</td>
<td>81,081</td>
</tr>
<tr>
<td>Africa</td>
<td>1,050</td>
<td>586</td>
</tr>
<tr>
<td>Europe</td>
<td>307</td>
<td>211</td>
</tr>
<tr>
<td>North America</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Australia</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>83,624</td>
<td>82,006</td>
</tr>
</tbody>
</table>

A decrease in the average headcount in 2017 was due to the disposal of non-core assets and implementation of a programme to improve labour productivity and reduce costs.

Headcount breakdown by Russian operations // %

<table>
<thead>
<tr>
<th>Region</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taimyr Peninsula</td>
<td>53</td>
<td>52</td>
<td>51</td>
</tr>
<tr>
<td>Kola Peninsula</td>
<td>11</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Krasnoyarsk Territory (excl. Taimyr)</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Zabaykalsky Krai</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Moscow and other Russian regions</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>72</td>
<td>71</td>
</tr>
</tbody>
</table>

Gender breakdown across Russian operations // %

<table>
<thead>
<tr>
<th>Gender</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>57</td>
<td>56</td>
<td>55</td>
</tr>
<tr>
<td>Female</td>
<td>43</td>
<td>44</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Recruitment

In 2017, the Company focused mainly on increasing its visibility as an employer and staffing GRK Bystrinskoye.

GRK Bystrinskoye, Russia’s largest mining and processing facility, successfully completed its ambitious recruitment exercise.

As part of the large-scale recruiting campaign, we informed over 9 million people from 26 Russian regions about the launch of GRK Bystrinskoye, providing advice on the working conditions and available jobs. To stay in touch with the job seekers, the Company set up a dedicated toll-free hotline. In nine months, we hired 1,900 highly qualified workers, engineering service officers (ESOs) and managers.

Partnerships with universities

To make jobs in the metals and mining industry more attractive for young people and help develop skills in personnel, Norilnick pays special attention to collaboration with Russian universities. In 2017, the Company invited 400 students from dedicated universities to take part in its Career Start-Up programme. Norilnick was the first company in the Russian mining industry to engage students and graduates in solving real business tasks.

The students obtained practical skills as part of their apprenticeship at the Company’s major facilities along, while also gaining unique knowledge by taking part in the Conquers of the North business game. In the span of two summer months, the programme participants were offered to take a hands-on training experience and compete in a multi-stage business game with a focus on team work 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 participants.

Norilnick places a strong emphasis on engineering education in Russia and partakes in the promotion of relevant professions among school graduates and university students. In 2017, 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 Norilnick’s operations gaining insights into the Company’s business processes.

Assistance programme

Due to the remote location of MMC Norilsk Nickel’s 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 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, the programme covers 1,716 of the Company’s employees, including 267 new participants who joined in 2017. With this programme the Company seeks to provide comfortable living conditions for the invited employees and reimburse their relocation and resettlement costs.

In order to identify and recruit the best candidates to fill open vacancies and reduce staff turnover, in 2017, the Company started using the latest methods of employee evaluation and capacity assessment. Those help measure abilities and risk appetite of each individual, which are important in recruiting candidates to positions with a high level of exposure to occupational hazards. They are also helpful in obtaining information about each employee’s motivating and demotivating factors. The project was first piloted at GRK Bystrinskoye where 100% of new employees (all the way up from workers to managers) were recruited following successful assessment.

Financing under the Assistance programme // USD mln

In 2017, we proceeded with our project to automate talent pool management using SAP HCM. The new system will help standardise talent pool management methods across the Company’s operations, consolidate relevant data into a shared database, boost efficiency and streamline approaches to talent pool building. Its other advantages include:

• reduced labour input required to collect and consolidate data and control talent pool building across our key production assets;
• reduced labour input required to timely identify and recruit candidates to fill positions with the highest priority in succession planning;
• standardised talent pool building process at Russian subsidiaries, an option to transfer the process to the shared service centre, procedure compliance control within the system;
• full and reliable information available at every stage of the talent pool building cycle;
• engagement of mentors and unit heads, streamlined talent pool assessment and data collection procedure;
• shared information environment for all stakeholders, additional feedback opportunities for employees;
• timely planning of talent pool development, increased hiring from the talent pool.

The reporting year saw the Company complete its project to assess professional competencies of managers in the Power and Mechanics functional units. As part of the assessment, 250 managers took specially designed tests that helped identify areas for their professional development.

In 2018, Norilnick will partner with Russia’s leading universities and institutions to organise training for all unit managers giving them an opportunity to learn more about the cutting-edge technologies and best practices. The training programmes will enable managers to enhance their managerial and professional competencies at the leading business schools.

Personnel development

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

Talent pool

In 2017, the Company continued rolling out its talent pool management system to include the process of recruiting lower and middle line managers. The relevant approaches are set out in the Talent Pool Regulation of MMC Norilsk Nickel. In 2017, the Company primarily focused on designing and implementing training and development programmes for the talent pool and their mentors, with 99 mentors fully trained during the year. Also, the Company set up a new programme for the talent pool! The comprehensive training system offers a combination of classroom and online sessions to enable transition from easy-to-follow on the-job programmes to a free choice of resources for professional development.

In 2017, the Company started assessing the capacity, current performance and development prospects of its middle and top managers, with 81 managers from Kola MMC, Pechenganstroy, Norilsknickenmelent and Norilsk Support Complex listed as those with a high career growth potential in 2017.

To define priority development areas for its management, at the end of 2017, the Company ran a 360-degree competency review using an updated competency model built around values and management competencies. Based on the review results and relevant feedback, each participant could choose the right path for development and select required tools and methods using a dedicated roadmap for development activities. In 2018, the training programme for the Head Office’s managers will be based on their individual development plans.
The operating efficiency training

In September 2017, 55 managers embarked on the operating efficiency training at Moscow’s Skolkovo School of Management. The project seeks to develop key management competencies with a focus on operating efficiency, a new approach to production management, better understanding of business and business environment, wider planning horizon, enhanced vision of the Company’s prospects, analysis of the latest technologies, approaches and best practices in production management, and also their possible use and roll-out across the Group. At the end of the session, the trainees will have to come up with target strategic projects to boost operating efficiency of the Company’s facilities.

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 easy access to new knowledge, helping them master new professional skills and receive training and development support for horizontal and vertical job rotation.

In 2017, we proceeded with the diagnostics and management of professional skill development across our mining facilities, building a professional competency model for lower and middle line mine managers, defining knowledge and skills requirements for each position, and developing a set of test questions to assess professional competencies of line managers at mining facilities. This year, we will carry on with this work.

In 2017, we completed a large-scale programme to retrain over 94,600 employees of the Group, including more than 24,000 people aged below 30. Over 52,000 employees were trained in corporate training centres.

In regulating labour relations, employee interests are represented by trade unions and social and labour councils.

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An area of special attention is the introduction of modern technologies to assist in the training of various personnel categories. In 2017, we developed interactive training in occupational safety.

Social partnership

Russian operations of Norilsk Nickel 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.


Social partnership framework

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In 2017, we proceeded with the diagnostics and management of professional skill development across our mining facilities, building a professional competency model for lower and middle line mine managers, defining knowledge and skills requirements for each position, and developing a set of test questions to assess professional competencies of line managers at mining facilities. This year, we will carry on with this work.

In 2017, we completed a large-scale programme to retrain over 94,600 employees of the Group, including more than 24,000 people aged below 30. Over 52,000 employees were trained in corporate training centres.

In regulating labour relations, employee interests are represented by trade unions and social and labour councils.

An area of special attention is the introduction of modern technologies to assist in the training of various personnel categories. In 2017, we developed interactive training in occupational safety.

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Russian operations of Norilsk Nickel 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.


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In 2017, many of the Group’s Russian companies entered into new collective bargaining agreements or extended the expired ones. Collective bargaining commissions also amended some of the agreements during the reporting year. The need to make those amendments was mostly related to adjustments in wage rates arising from legislative changes, organisational structure transformation and introduction of a new automated HR management system. One of the key changes was the review of the payroll system, which led to an increase in the fixed (guaranteed) part of the salary. The payroll adjustments were made in strict compliance with the applicable laws subject to the consent of every given employee. As a result, the Collective Bargaining Commission of MMC Norilsk Nickel reviewed old wage rates and salaries and approved the new ones which came into effect on 1 April 2017.

There were no social or labour disputes during the reporting period.

In 2017, the share of employees covered by collective bargaining agreements stood at 80.1.1

Incentive programmes
Remuneration system
Nornickel’s remuneration policy aims to:
- attract and retain employees;
- promote higher labour productivity;
- ensure administrative efficiency and streamlining;
- enforce compliance with legal requirements.

The remuneration package consists of the fixed and variable components (70% and 30%, respectively) paid based on the Company’s operating performance and achievement of relevant KPIs.

The underlying principles of the remuneration policy include:
- internal equity – remuneration management based on HAY Group job description and evaluation methodology;
- external competitiveness – remuneration level determined based on the labour market data, with adjustments made for the company’s focus area, business location and job grade;
- performance-based incentives – changes in the pay level subject to the annual performance assessment outcome;
- simplicity of the remuneration system – pay level calculation and review procedures are clear for every employee.

In addition to salaries, the Company’s employees enjoy a variety of benefits. Reimbursements of vacation travel expenses (round trip travel expenses and baggage fees) for employees living in the Far North and their families, and provision of discounted tours for health resort treatment account for 69% of total employee benefits.

Average monthly salary across the Group’s Russian operations

<table>
<thead>
<tr>
<th>Company</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD^ 1</td>
<td>1,393</td>
<td>1,405</td>
<td>1,784</td>
</tr>
<tr>
<td>RUB</td>
<td>84.9</td>
<td>94.2</td>
<td>104.1</td>
</tr>
</tbody>
</table>

Company’s expenses on employee benefits across the Group’s Russian operations // USD ‘000

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total expenses on employee benefits across the Group’s Russian operations</td>
<td>102,000</td>
<td>103,000</td>
<td>122,539</td>
</tr>
<tr>
<td>the Group’s Russian operations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>including the amount spent per employee</td>
<td>1,300</td>
<td>1,300</td>
<td>1,571</td>
</tr>
</tbody>
</table>

Efficiency improvement programmes
The Company implemented its employee performance management system back in 2014, with assessment relying on a variety of key performance indicators (KPIs), including occupational safety, operating efficiency and capital management. In 2017, some 4,326 people (employees of the Company’s Head Office, branches and subsidiaries) took part in the KPI-based assessment. The new system helped develop uniform criteria for the evaluation of employee performance enabling the management and employees to align the current year’s priorities with performance indicators of the Company/branches/subsidiaries and join their forces to find a path for delivering on the tasks in hand. Moreover, this system makes it possible to link an employee’s performance to his/her pay level.

In 2018, we will continue the roll-out with a focus on SAP HCM-based performance assessment automation across the Company’s operations. In 2017, the automated SAP Human Capital Management system was implemented at Medvezhy Ruchey, Nornickel – Shared Services Centre, NORMETIMPEx and Bystrinsky Transport Division of MMC Norilsk Nickel. On top of that, 2017 saw the roll-out of the Talent Pool and Performance Assessment automated system at Head Office, branches and subsidiaries and some 4,326 people (employees of the Company’s branches/subsidiaries) took part in this programme, some 1,500 children spent their holidays in Anapa and Loutraki (Greece).

Health improvement programmes for employees
Health improvement programmes for employees
The harsh climate of the Far North and the heavy working conditions of the mining facilities require that the Company make an extra effort to protect its employees’ health. Hence, health improvement and health resort treatment programmes for employees and their families are a key priority of the Company’s social policy.

In 2017, more than 9,300 employees and their families received recreational treatment in Zapolyarye Health Resort (Sochi) owned by the Company. Some 15,500 people spent their vacations in other health resorts, including approximately 5,000 employees who travelled to Bulgarian resorts and over 2,000 staff members who went to Hainan (China).

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 programme, some 1,500 children spent their holidays in Anapa and Loutraki (Greece).

Awards for outstanding operational achievements, long track record and work commitment

- Company’s expenses %
- Employee’s expenses %

Financing of health resort treatment and vacation programmes for employees and their families // USD ‘000
Sports programmes

Sports programmes aim to promote a healthy lifestyle, foster corporate solidarity, and develop corporate culture.

The Company pays special attention to corporate competitions, including in such popular sports as football, volleyball, basketball, alpine skiing, snowboarding and swimming. Family sports contests are yet another focus area. In 2017, hockey became the latest addition to that long list.

To ensure further development of amateur hockey across the Company’s footprint, the region of Norilsk was included in Conference North of the Night Hockey League in December 2017.

In July 2017, Nornickel staged its first corporate team competition under the Hero Race franchise. Some 4,000 people (76 teams), including residents of the Norilsk Industrial District and Murmansk Region, took part in the race.

Events for local communities include annual Spartakiads. In Norilsk, there are 14 sports on Nornickel’s Spartakiad list, with some 4,800 people (76 teams), including residents of the Norilsk Industrial District and Murmansk Region, participating in the competition. In the Murmansk Region, the Spartakiad of Kola MMC includes 16 sports ensuring participation of approximately 3,300 people.

One of Nornickel’s social policy highlights is the Company’s sports programmes aimed at fostering corporate solidarity, and developing corporate culture.

Housing programmes

In 2017, the Company adopted a Housing Programme Policy putting in place a single pool of principles and approaches to developing, approving and implementing housing programmes for employees with the highest qualifications and most relevant expertise as a way to boost long-term staff retention across the Group’s operations.

In the reporting period, the Company continued implementing its Its Home and My Home corporate social programmes launched back in 2010 and 2011, respectively.

Our Home programme is intended for the employees of Polar Division, Polar Transport Division and Kola MMC. My Home programme covers 14 subsidiary-owned facilities operating in Norilsk, the Taimyrysh Dolgano-Nenetky Municipal District and Murmansk Region.

Since the start of the programme, 3,397 apartments have been granted to the Company’s employees. In total, the Company has purchased 3,826 ready-for-living housing units, including 422 apartments in 2017.

As part of the programmes, the Company purchases ready-for-living apartments in various Russian regions at its own expense, and provides them to eligible employees under co-financing agreements. The Company pays up to half the cost of the apartment (but in any case no more than USD 35,000), 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 employee’s participation in the programmes. Ownership rights are registered at the end of the programmes, but the employee may move in immediately after receiving the apartment.

Financing of the programmes

Financing of sports programmes // USD mln

<table>
<thead>
<tr>
<th>Year</th>
<th>Financing // USD mln</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2.8</td>
</tr>
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In total 3,826 apartments have been purchased under the housing programme since 2010.

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 in 2017

Financing of Co-Funded Pension Plan // USD mln

<table>
<thead>
<tr>
<th>Year</th>
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</thead>
<tbody>
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<tr>
<td>2016</td>
<td>117</td>
</tr>
<tr>
<td>2015</td>
<td>116</td>
</tr>
<tr>
<td>2014</td>
<td>119</td>
</tr>
<tr>
<td>2013</td>
<td>127</td>
</tr>
</tbody>
</table>

In 2014–2017, the apartments were purchased in the Moscow and Tver Regions, as well as the Krassnodar 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.

To boost the appeal of housing programmes for employees and, consequently, increase the Group’s retention rate, Nornickel launched a new housing programme based on mortgage subsidies – Temporary Assistance Programme for Employees of Polar Division and Kola MMC in Acquiring Residential Property, in 2016–2017. The programme is designed to provide a wider choice of residential locations, with employees entitled to an interest-free loan to make a down payment and partial reimbursement of the mortgage interest. The programme has proved efficient in retaining highly qualified specialists. Some 200 employees have already taken part in the pilot, with over 110 people tapping into the allocated funds. Hence, a decision was taken to roll out the programme on an ongoing basis and transform it into Corporate Social Subsidised Loan Programme for Employees of Nornickel and Its Russian Subsidiaries. The launch of the programme is scheduled for Q1 2018.

Financing of Co-Funded Pension Plan // USD mln

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Nornickel and its Russian Subsidiaries. The launch of the programme is scheduled for Q1 2018.

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Social investments

2017 MILESTONES

In September 2017, Nornickel built a 40 Gbps broadband internet network in Norilsk, with the project costs amounting to USD 43 mln (RUB 2.5 bn). The network is strong enough to support operations of the Norilsk Nickel Group, as well as local mobile operators, government bodies and municipal authorities.

For more details, please see Infrastructure development

For more details, please see World of New Opportunities

Relocation programme

In 2017, the Company and the Government continued joint implementation of a long-term target programme to relocate people living in 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 residing in Norilsk and Dudinka to be relocated from these municipalities as entitled to housing subsidies under Federal Law No. 125-FZ On Housing Subsidies for Citizens Migrating from the Far North Regions and Equated Territories.

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In 2017, the programme budget totalled RUB 8.3 bn. Since the programme launch, the Company has transferred to the local budget a total of USD 169 mln (RUB 9.2 bn), including USD 14.2 mln (RUB 830 mln) in 2017. In 2011–2017, 6,515 families purchased new homes on the “mainland” and moved there, including 5,458 families from Norilsk and 1,057 families from Dudinka.

Relocation programme results

- Company contribution // USD mln
- USD mln
- Total apartments purchased

6,515 families purchased new homes on the “mainland” and moved there in 2011–2017

169 USD mln will be invested to construct 2,500 sq m of housing in the Tukhard settlement

1.5 USD mln

In 2017 alone, Krasnoyarsk Territory’s Ministry of Construction, Housing and Utilities issued 685 home purchase certificates under the applicable housing quota.

Local development

The Company makes a significant contribution to the development of local communities by implementing a series of social programmes targeting current and potential issues in its key regions of operation, including the Krasnoyarsk Territory, Kolta Peninsula and Zabaykalsky Krai.

Support of indigenous peoples. Nornickel recognises the right of indigenous peoples 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 towards the rights of indigenous peoples. In 2017, there was no record of the Company violating the rights of indigenous minorities.

For several years now, the Company has been supporting initiatives to improve living standards of the Taimyr Peninsula’s indigenous people.

One of such initiatives is the Comfortable Taimyr project launched in 2017. Under this ambitious programme, the Company will invest USD 1.5 mln to construct 2,500 sq m of housing in the Tukhard settlement, where indigenous people live. A trilateral agreement to this effect was signed between the Company, Taimyr Administration and Yenisey United Bank in April 2017 during the Krasnoyarsk Economic Forum.

In an attempt to preserve national traditions and culture of indigenous Northern minorities, the Company participates in staging annual professional 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 work and life.

In September 2017, the Company completed the construction of a fibre optic communication line running through a permafrost zone between Novy Urengoy and Norilsk to secure internet connection for local businesses, institutions and individuals. The line is 960 km long, with its most technically challenging section laid under the Yenisey River bed. Along with the Norilsk residents, people living in Dudinka also got access to the broadband internet service. The communication line will run in a pilot mode until Q2 2018 when all the tests are completed and the line is put into commercial operation.
As part of a public-private partnership, the Company continues 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 for 2014–2018. The Company will allocate over USD 50 mln (RUB 3 bn) to finance the project. The works are spread out over three construction seasons to avoid airport closure. In 2016–2017, the focus was on the runway upgrade, which is expected to be completed in 2018. In the same year, we will achieve significant progress in repairs of the apron for civil aircraft. The works will be completed in 2019 and will not affect the flight schedule.

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

In 2017, the Company allocated USD 343,000 (RUB 20 mln) to finance the construction of a sports facility in Monchegorsk (a prefab structure with a football pitch). Its commissioning is scheduled for March 2018.

Another project of Norilnick, which is supported by the Krasnoyarsk Territory Government, is to build a unique golf field in the northern city of Krasnoyarsk to drum up people’s interest in the game of golf.

Norilnick is also helping Krasnoyarsk authorities to put in place new smart bus stops. They are planned to be installed in 2018 and will be fitted out with safety and surveillance systems, mobile chargers, wi-fi hotspots and other options. The Company allocated some USD 120,000 (RUB 7 mln) to finance the project.

The Norilsk residents and people living in Dudinka got access to the broadband internet service.

Business overview ➔ Corporate responsibility ➔ HR and social policy

The World of New Opportunities programme has three focus areas – Partnership, Innovations and Development.

Key Partnership initiatives comprise:
• Academy for Social Partnership and Development (a series of workshops on social project development, expertise building, assessment of projects/programmes and monetisation of social projects);
• Socially Responsible Initiatives Competition;
• Social Technologies Forum;
• Social Engineering Workshop;
• We Are the City! PicNick.

In spring 2017, the Company initiated the We Are the City! social technologies forum in Norilsk (Krasnoyarsk Territory) and Zapolyarny (Murmansk Region) to bring together local communities and tell them about new trends and best practices in charity and volunteering, and also 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 shared their ideas on upbringing children, finding a way in life, personal development, etc. The forum venues were attended by a total of 1910 people.

The Company seeks to broaden local knowledge and skills contributing to the build-up of regional expertise. For the third year running, Norilnick organised a three-day ‘social engineering’ workshop for local activists that combined theoretical and practical aspects of generating and implementing ideas. In three days, 138 participants from Norilsk, Dudinka, Monchegorsk and Zapolyarny developed and staged 12 city events reaching out to over 2,500 local residents.

On the Company Day, Norilnick 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. In 2017, it was staged as a street festival with a projects fair, workshops, training sessions, etc.

All events organised by the Company served to raise charity awareness in local communities and encourage public-private partnerships. In 2017, the Socially Responsible Initiatives Competition, which aims to support public initiatives, received 489 project bids, 116 of which were approved for funding. Grant funding amounted to over USD 2 mln (RUB 125 mln).

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Key Innovations initiatives comprise:

- Arctic PRO R&D marathon;
- Arctic Wave festival of R&D discoveries;
- FabLab R&D creativity laboratory;
- School of Urban Competencies.

The career guidance programme was built around several areas of interest, including Biological Engineering, Medicine and Healthcare, Taiga, Digitalisation in Humanities, IT, Communications and Aerospace Engineering, and Energy, Engineering and Architecture, each featuring interactive presentations made by local universities and businesses and dedicated lectures enabling students to tap into real-life experience, learn more from professionals, and choose a personal development path for the next 5–10 years. About 15,000 students attended the two-day festival.

In 2017, Norilsk’s School of Urban Competencies won the first prize as the Best Charity Promotion Programme (Project) at the 2017 Leaders of Corporate Charity contest held by the Association of Sponsoring Organisations. The School of Urban Competencies aims to develop key social competencies in schoolchildren, including in the realms of housing, finance and career. Each year, at least 500 children living in the Polar regions take part in the School’s workshops and events.

In autumn 2017, the Company staged Arctic Wave R&D festivals in Norilsk and Monchegorsk to promote research and development among the youth, support creative engineering and innovative thinking among schoolchildren, and demonstrate the latest scientific achievements. Interactive sessions, contests and scientific experiments of the largest R&D event in the Polar Region were held under the motto “Augment Reality”. The festivals were attended by 4,500 children and adults.

For the fourth year in a row, the Company organised the Arctic PRO R&D marathon aiming to encourage R&D creativity, innovations in engineering and thrust for knowledge among children and young people. 1,300 students aged 12 to 15 took part in the marathon. 20 more children attended the Winter R&D School in Kazar.

For the third year running, the Company was a general partner of the All-Russian Science Festival held by Lomonosov Moscow State University. In Krasnoyarsk, the festival took place in December 2017. It was the first festival to feature the City of Discoveries. City of Professions programme giving Krasnoyarsk high school students an opportunity to take a career guidance test, have their interests and skills analysed, and receive career recommendations.

The career guidance programme was built around several areas of interest, including Biological Engineering, Medicine and Healthcare, Taiga, Digitalisation in Humanities, IT, Communications and Aerospace Engineering, and Energy, Engineering and Architecture, each featuring interactive presentations made by local universities and businesses and dedicated lectures enabling students to tap into real-life experience, learn more from professionals, and choose a personal development path for the next 5–10 years. About 15,000 students attended the two-day festival.

In 2017, Norilsk’s School of Urban Competencies won the first prize as the Best Charity Promotion Programme (Project) at the 2017 Leaders of Corporate Charity contest held by the Association of Sponsoring Organisations. The School of Urban Competencies aims to develop key social competencies in schoolchildren, including in the realms of housing, finance and career. Each year, at least 500 children living in the Polar regions take part in the School’s workshops and events.

In autumn 2017, the Company staged Arctic Wave R&D festivals in Norilsk and Monchegorsk to promote research and development among the youth, support creative engineering and innovative thinking among schoolchildren, and demonstrate the latest scientific achievements. Interactive sessions, contests and scientific experiments of the largest R&D event in the Polar Region were held under the motto “Augment Reality”. The festivals were attended by 4,500 children and adults.

For the fourth year in a row, the Company organised the Arctic PRO R&D marathon aiming to encourage R&D creativity, innovations in engineering and thrust for knowledge among children and young people. 1,300 students aged 12 to 15 took part in the marathon. 20 more children attended the Winter R&D School in Kazar.

For the third year running, the Company was a general partner of the All-Russian Science Festival held by Lomonosov Moscow State University. In Krasnoyarsk, the festival took place in December 2017. It was the first festival to feature the City of Discoveries. City of Professions programme giving Krasnoyarsk high school students an opportunity to take a career guidance test, have their interests and skills analysed, and receive career recommendations.
Sponsorship

Financing of Sporting Projects // USD mln

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>219</td>
</tr>
<tr>
<td>2016</td>
<td>216</td>
</tr>
<tr>
<td>2015</td>
<td>01</td>
</tr>
</tbody>
</table>

Rosa Khutor Ski Resort

In 2016–2019, Nornickel is going to invest USD 250.5 mln in the development of Rosa Khutor ski resort as part of Russia’s Mass Sports Support Programme. These funds will be used to transform Olympic facilities into a year-round tourist attraction, develop new ski pistes and lifts and build new recreational and sports facilities. 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 allocated over RUB 1 bn to support youth and high performance sports, including 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 2017, the Olympic Patrol visited Krasnoyarsk and Norilsk, 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.

Football Union of Russia and Russia’s national football team

In line with the sponsorship agreement, Nornickel remains an official partner of the Football Union of Russia and Russia’s national football team. The Company is also an exclusive partner of Russia’s Professional Basketball League in the metals sector.

CSKA professional basketball club

Nornickel continues to provide support to Russia’s most successful and well-known basketball club. In 2017, CSKA came out as a winner in the VTB United League and took part in the EuroLeague’s Final Four.

International University Sports Federation

The Company will remain a Partner of the International University Sports Federation (FISU) until May 2019 and will continue to support the development of international university sports movement. The first-ever international forum of the Federation – FISU Volunteer Leaders Academy – was organised in July 2017 with the backing from Nornickel and was attended by leaders of volunteering associations from over 90 FISU member states, as well as university sports delegations and officials. The forum was held in the run-up to the 2019 Winter Universiade to facilitate communication between volunteers and national university sports federations, and share knowledge and experience in organising large international sports events.

XXIX International Winter Universiade in Krasnoyarsk

As a General Partner of the 2019 International Winter Universiade in Krasnoyarsk, the Company keeps on track with preparations for this upcoming international sports event in accordance with the agreement signed in 2015.

Promotion of the XXIX Winter Universiade will bring about improvements in the local sports infrastructure and the international image of the Krasnoyarsk Territory and its capital, increase popularity of healthy lifestyles and mass sports, and enhance living standards in the region.

According to current estimates, the Company will spend nearly RUB 2 bn on the preparation and holding of the 2019 Winter Universiade. One of the major commitments made by the Company for the Universiade was to prepare the Bobrovy Log Fun Park for alpine competitions.
In 2017, Norilsk Nickel proceeded with the construction of a new athletic training facility equipped with a broadcasting system, expansion of the ski pistes, development of an integrated security system, upgrade of the artificial snow machinery, and preparation of an ambulance helicopter pad.

In addition to the Bobrovy Log Fun Park, the Company plans to establish a park along the Bazaikha River with 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. An agreement to this effect was signed between the Company and Krasnoyarsk municipal authorities.

With the backing from Norilsk, the Russian International Olympic University and the Siberian Federal University organised training for mid-level and top-level managers and leaders of volunteer teams involved in the Winter Universiade.

On top of that, a volunteer team was formed by employees of the Company and members of their families. A dedicated training programme developed by the Siberian Federal University was completed by 95 volunteers who will seek to maximise popular engagement in the run-up to the event.

As a General Partner of the 2019 Winter Universiade, Norilsk Nickel strives to ensure extensive promotion to inform the public about the event. In 2017, three NordStar aircraft were redesigned to feature the symbols of the Universiade. They made nearly 2,000 flights during the year and carried over 265,000 passengers who learnt about the upcoming event while on board. Information about the Universiade is also available in the NordStar inflight magazine.

Branded pavilions of the Company were constructed in Moscow parks, with over 15,000 visitors receiving information about the Universiade, Bobrovy Log Fun Park and other sports-related projects through games and interactive presentations. The pavilions also served as a platform for cultural, educational and sports events involving famous athletes, sports workshops, flash mobs, and prize-winning competitions for park visitors.

The Company also sponsored the 500 Days until Universiade event that linked two cities – Krasnoyarsk (Bobrovy Log Fun Park) and Moscow (Lomonosov Moscow State University) – via a teleconference.

U-Laika, the mascot of the upcoming university games, travelled with the Russian cosmonauts to the international space station and addressed the audience of the Universiade from the orbit.

Norilsk Nickel Futsal Club

In 2016, the team and administrative personnel of Norilsk Nickel Futsal Club moved to Norilsk. 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 Regions project. As part of this nationwide initiative, the Club’s futsal players hold master classes for schoolchildren and special workshops for trainers.

All Russian Federation of DanceSport and Acrobatic Rock’n’Roll

In 2017, Norilsk Nickel and the All Russian Federation of DanceSport and Acrobatic Rock’n’Roll started cooperation to support and promote these sports. One of the partnership’s objectives is to establish a corporate acrobatic rock’n’roll club in Norilsk.

XIX World Festival of Youth and Students

Large international events should be viewed as important milestones in the Russian tradition of sponsorship and public-private partnerships. As part of the 2017 World Festival of Youth and Students (attended by nearly 25,000 people from 188 countries), the Company set up an Athletic Norilsk Nickel venue which turned into a major point of attraction during the Festival. The venue was divided into two zones, the 2019 Winter Universiade General Partner Pavilion and the CSKA streetball ground. The Company’s contribution to the Festival was highly appreciated by the Russian President Vladimir Putin.
Bystrinsky GOK implemented an advanced system for monitoring mining machinery and personnel positioning designed to improve mining operations safety, ensure better coordination of rescue teams in emergencies, and enhance production process management. Occupational safety is one of the core aspects of the Company’s corporate social responsibility, with Nornickel seeking to ensure zero workplace fatalities and reduce its lost time injury frequency rate.

The Company’s Occupational Health and Safety Policy gives precedence to the life and health of employees over operational performance while also demonstrating the management’s commitment to creating a safe and healthy environment and fostering sustainable employee motivation for safe workplace behaviour.

The Board’s Audit and Sustainable Development Committee oversees occupational health and safety matters, reviewing relevant reports by the management on a quarterly basis. First Vice-President – Chief Operating Officer is responsible for the development of an action plan and enforcement of compliance with the applicable occupational safety requirements.

He also chairs the Company’s Health, Safety and Environment Committee (HSE Committee) charged with:
- improving health and safety performance at the Company and its subsidiaries in Russia;
- toughening responsibility of Nornickel’s executives for ensuring operational health and safety.

In 2017, the committee was engaged in considering improvements to the existing health and safety management system, as well as monitoring the implementation of the scheduled activities aimed at reducing injury rates and enhancing the system’s effectiveness. To that end, a series of video conferences and meetings were held with representatives of the Company’s branches and Russian subsidiaries.

All the production facilities have job- and operation-specific regulations and guidelines containing dedicated health and safety sections. Moreover, Nornickel’s collective bargaining agreements also have occupational health and safety provisions. 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 followed during the performance of works or in the immediate run-up to them.

Corporate standards

The Company keeps improving its occupational health and safety management system, including by developing and implementing corporate standards.

The HSE Department monitors the implementation of the standards across Nornickel’s branches and Russian subsidiaries, including through second-party audits. In 2017, a total of 38 audits were held in accordance with the approved schedule.

As part of the Risk Control project (launched in 2016 to implement the STO KSM 121-211-2014 occupational health and safety management standard), 2017 saw further adjustments to the risk registers to be piloted directly at the production sites, risk register-based employee briefings, and drafting of data sheets for high and material risks.

HSE certifications

- Kola MMC and Norilsk Nikel Harjavaltta – OHSAS 18001 (international certificate)
- Polar Division and Pechengastro – GOST R 54934-2012 (Russian standard identical to OHSAS 18001)

Expenses on occupational safety initiatives
Following the certification of 484 conveyors at Polar Division, work is underway to improve occupational safety at the production facilities: fencing and drive and tension stations were repaired, including the installation of new blocking devices, replacement of wiring and painting of equipment (in 2017, a total of 309 conveyors were fully repaired).

In 2017, the Technological and Organisational Change Management project was launched, resulting in:
- development and approval of a standard for the Management of Technical, Technological, Organisational and HR Changes;
- training sessions for process owners and change leaders;
- implementation of a change management process at pilot units;
- building of a team for the standard to be rolled out.

Special-purpose underground machinery across Norilsk Nickel’s mines was equipped with protective covers (a total of 83 units of machinery).

In 2017, radio communications and positioning systems were installed and commissioned in Norilsk Nickel’s mines was equipped with protective covers (a total of 83 units of machinery).

In 2017, radio communications and positioning systems were installed and commissioned in Norilsk Nickel’s mines. In addition, 2017 saw the launch of regular Risk Management briefings for employees and testing capabilities for interactive safety briefings, comprehensive health and safety inspections.

In order to define priority paths for further improvement of the corporate health and safety management system and mitigate injury and accident risks at Norilsk Nickel’s key assets, DuPont Science and Technologies has been assessing the level of the Company’s industrial safety culture every year since 2014.

Improvements in the safety culture metrics came on the back of greater personnel involvement in occupational health and safety, a sharper focus on HSE on the part of the production facilities’ management (management training completed, a team of in-house experts built) and enhancement of risk assessment and management expertise.

External health and safety audit

In order to define priority paths for further improvement of the corporate health and safety management system and mitigate injury and accident risks at Norilsk Nickel’s key assets, DuPont Science and Technologies has been assessing the level of the Company’s industrial safety culture every year since 2014.

Improvements in the safety culture metrics came on the back of greater personnel involvement in occupational health and safety, a sharper focus on HSE on the part of the production facilities’ management (management training completed, a team of in-house experts built) and enhancement of risk assessment and management expertise.

Safety culture as per the Bradley curve

Safety performance indicators

Health and safety performance indicators

In 2017, the Company failed to improve its LTIFR due to a group accident at Zapolyarny mine in July 2017, when a methane explosion in the mine opening claimed the lives of four people. An ad-hoc investigation followed to enforce compliance with the safety rules set out in the Special Requirements for Mining Operations in Hazardous Gas Conditions. The investigation gave the Company an opportunity to take a series of organisational, technical and disciplinary actions to prevent similar accidents going forward.

Investigation of production accidents and occupational diseases is carried out in accordance with the Labour Code of the Russian Federation, industry regulations, and the Accident Investigation corporate standard. All fatal accidents were reported on to the Board of Directors and thoroughly investigated to avoid them in the future. Norilsk Nickel’s management views occupational safety and zero workplace fatalities as its key strategic objective and keeps running dedicated programmes to prevent workplace accidents and injuries.

In 2017, the implementation of core occupational safety standards, rollout of video information systems and launch of the Risk Control project (development of risk mitigation initiatives) resulted in a 46% decrease in the number of fatal accidents.

Safety performance indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2013</th>
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<tr>
<td>FIFR</td>
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<td>0.11</td>
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</tr>
<tr>
<td>FIs</td>
<td>88</td>
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<td>58</td>
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<tr>
<td>fatalities</td>
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<td>13</td>
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<td></td>
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<tr>
<td>lost-time injuries</td>
<td>74</td>
<td>43</td>
<td>51</td>
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<tr>
<td>miner injuries</td>
<td>471</td>
<td>719</td>
<td>799</td>
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<tr>
<td>accidents among the contractors’ employees, including</td>
<td>13</td>
<td>18</td>
<td>15</td>
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<td></td>
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<tr>
<td>fatalities</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Safety as per the Bradley curve

Total number of accidents // people

- LTIFR stands for Lost Time Injury Frequency Rate (LTIFR = non-fatal FIs / total number of hours worked * 1,000,000).
- FIFR stands for Fatal Injury Frequency Rate (FIFR = FIs / total number of hours worked * 1,000,000).
Environment

In 2017, the Company completed the first stage of its environmental programme, with Taldykh Concentrator reaching the design processing capacity and recovery rates. According to our estimates, in 2017, given the Nickel Plant shut-down in 2016, the total sulphur dioxide emissions reduced by 5% across Polar Division and by 30–35% within the city of Norilsk. Last year we announced the launch of the second stage of our environmental programme, which includes the Sulphur Project in Norilsk and optimisation of the smelting capacity at Kola MMC. As a result, we plan to cut the sulphur dioxide emissions by 75% in Norilsk by 2023 and by 50% at Kola MMC as soon as in 2019.

Sergey Dyachenko
First Vice President and Chief Operating Officer of Nornickel

At the end of 2017, Nornickel’s Polar Division completed a project to redirect emissions from slag and matte mixers and other aspiration gases from low-height sources to Copper Plant’s fluid gas stack DT-1. This created better conditions for the dispersion of emissions and reduced ground-level concentrations of pollutants in the residential area of Norilsk.

Nornickel’s management team considers environmental protection an integral part of the production process. The Company complies with the applicable laws and international agreements and is committed to reducing emissions, on a phased basis, and sustainable use of natural resources.

Nornickel’s environmental policy focuses on the following priorities:
- phased reduction of pollutant air emissions, primarily sulphur dioxide and solids;
- consistent reduction of wastewater discharges into water bodies;
- development of waste disposal sites to reduce human impact on the environment;
- zero pollution in maritime cargo transportation and vessel operation;
- sustainable use of natural resources and introduction of eco-friendly technologies;
- involvement with environmental public-private partnership projects;
- conserving biodiversity across geographies of our production operations.

Environmental Management System

In 2017, the environmental management system (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). With this approach, the Company is better fit to streamline its environmental efforts and enhance overall performance.

With the EMS, Norilnickel benefits from:
- secured priority funding for environmental initiatives;
- higher environmental awareness among employees;
- better public perception;
- stronger competitive edge in the domestic and international markets;
- demonstrating a global standard of environmental compliance to customers and other stakeholders, and winning the trust of customers who require the supplier to have an effective EMS;
- additional opportunities for recognition in the international context and in global markets;
- improved investment case.

Throughout 2017, the Company carried out internal audits as part of the CIMS. In line with international standards and Norilsk Nickel’s by-laws, internal audits were conducted by specially trained and competent personnel:
- 18 EMS internal audits were held at the Company’s Head Office (as part of the CIMS internal audits);
- 66 internal audits were held at Polar Division, Polar Transport Division and Murmansk Transport Division (17, 25 and 24 audits, respectively);
- 40 EMS internal audits were held at Kola MMC (as part of the CIMS internal audits).

To confirm compliance of the EMS with ISO 14001, the Company engages Bureau Veritas Certification (BVC) to conduct surveillance audits once a year and recertification audits once every three years. In November 2017, an EMS recertification audit was held as part of the CIMS at the Company’s Head Office in Moscow, Polar Division’s production sites in Norilsk, Polar Transport Division (Dudinka) and Murmansk Transport Divisions (Murmansk).
The audit confirmed that MMC Norilsk Nickel’s EMS complies with ISO 14001:2015 (Compliance Certificate No. RU228136 QE-U of 4 December 2017). Based on the audit findings, BVC issued recommendations on potential improvement areas and highlighted the overall strengths of the Company’s EMS.

In 2017, the EMS operated in accordance with the new version of ISO 14001:2015. To comply with this international standard, among other things, the Company revised its Environmental Policy approved by MMC Norilsk Nickel’s Board of Directors (Resolution No. GMK/33-pr of 5 October 2017). 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.

**Nornickel’s environmental projects**

High sulphur dioxide emissions resulting from sulphide ore smelting 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. To this end, the Company is gradually upgrading its production capacities.

**Key environmental projects:**
- Nickel Plant shutdown (completed in 2016);
- Sulphur Project (to be completed by 2023);
- transition to a concentrate briquetting technology (completed in 2017) and retrofit of the Zapolyarny Concentrator (to be completed by 2018).

**Nickel Plant shutdown:** what does it mean for the environment?

The shutdown of Nickel Plant and transfer of all nickel smelting operations to Nadezhda Metallurgical Plant helped to upgrade the production chain and improve environmental situation in the city as a result of:
- discontinued emissions of air pollutants (approximately 370 ktpa);
- eliminating 600 sources of air pollution, of which 458 had no purification facilities;
- closure of two wastewater discharge points previously discharging approximately 37 kt of pollutants per annum;
- discontinued generation of ca. 1,400 kt of production waste, including coal processing products, metallurgical slag, and ferrous cake;
- transfer of smelting emissions from Nickel Plant to Nadezhda Metallurgical Plant, that is 7 km farther away from the residential area;
- 30% less exposure time as compared to how long the air of Norilsk was exposed to Nickel Plant emissions (approximately 265 hours in the course of 73 days based on 2015 data).

**Sulphur Project**

Sulphur project is an umbrella term of the second stage of Nornickel’s environmental programme designed to reduce the total volume of sulphur dioxide emissions at Polar Division by 75% down to 337 ktpa by 2023. This will guarantee that Norilsk air meets the air quality requirements regardless of wind speed or direction.

As part of this project, Nadezhda Metallurgical Plant is going to see construction of installations for capturing sulphur-rich gases and production of sulphuric acid (with subsequent neutralisation with natural limestone and production of gypsum), as well as principally new continuous copper matte converting facilities built, whose emissions will also be used for sulphuric acid production.

At Copper Plant, additional capacities for elemental sulphur production are expected to be commissioned, while converting operations are going to be completely discontinued, 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. The total CAPEX for the Sulphur Project is estimated in the range of USD 2.5 bn.

**Kola MMC**

At Kola MMC, a separate action plan has been developed and partially implemented to reduce sulphur dioxide emissions from smelting operations at the Nickel site by upgrading the equipment (reconstruction of leading and sealing systems of ore-thermal furnaces, gas duct replacement, preparation of furnace charge for smelting, etc.) and lowering smelting shop utilisation while selling part of the concentrate to third parties. This project is expected to reduce sulphur dioxide emissions down to 40 ktpa by 2019.

- **5%**
  - reduction of sulphur dioxide emissions across Polar Division in 2017

- **75%**
  - reduction of sulphur dioxide emissions in the Polar Division as a result of the Sulphur project by 2023

- **9%**
  - reduction of sulphur dioxide emissions across Kola MMC in 2017

- **40 ktpa**
  - reduction of sulphur dioxide emissions in the Kola MMC by 2019
Environmental impact across Norilsk Nickel’s Russian operations

Air

Air pollutant emissions across the Group // kt

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of pollutants, across the Group, including:</td>
<td>2,033.5</td>
<td>1,936.4</td>
<td>1,936.4</td>
<td>1,846.8</td>
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<tr>
<td>Sulphur dioxide (SO2)</td>
<td>2,009.1</td>
<td>1,878.0</td>
<td>1,785.0</td>
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<tr>
<td>Nitrogen oxide (NO)</td>
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<td></td>
</tr>
<tr>
<td>Solids</td>
<td>20.7</td>
<td>14.3</td>
<td>14.0</td>
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</tr>
<tr>
<td>Other</td>
<td>23.9</td>
<td>34.1</td>
<td>36.3</td>
<td></td>
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<td>Amount of pollutants, total for Polar Division, including:</td>
<td>1,883.2</td>
<td>1,787.6</td>
<td>1,705.0</td>
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<td>Sulphur dioxide (SO2)</td>
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<td>1,758.2</td>
<td>1,675.0</td>
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<td>9.0</td>
<td>6.2</td>
<td>6.1</td>
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<tr>
<td>Other</td>
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<td>21.7</td>
<td>21.5</td>
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<td>Amount of pollutants, total for Kola MMC, including:</td>
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<td>132.9</td>
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<td>Solids</td>
<td>10.6</td>
<td>7.4</td>
<td>6.5</td>
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</tr>
<tr>
<td>Other</td>
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<td>Amount of pollutants, total for other branches and subsidiaries, including:</td>
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<td>16.0</td>
<td>19.0</td>
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<tr>
<td>Nitrogen oxide (NO)</td>
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<tr>
<td>Solids</td>
<td>1.1</td>
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<tr>
<td>Other</td>
<td>2.2</td>
<td>7.7</td>
<td>10.0</td>
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</tr>
</tbody>
</table>

In 2017, gross emissions of harmful pollutants in general across Polar Division have dropped by 82.6 kt (down 4.6% y-o-y) mostly as a result of a reduction in sulphur dioxide emissions by 82.3 kt (down 4.7%). Lower sulphur dioxide emissions are attributable to the shutdown of Nickel Plant and migration of smelting operations to modern technologies of Nadezhda Metallurgical Plant.

Analysis of actual emissions for 2017 demonstrated that pollutant emissions at Polar Division as a whole are 160,998 kt (down 8.6%) below the permitted level (with NO rebased to NO2), including sulphur dioxide emissions that are below the statutory maximum as temporarily approved at 143 kt (down 8.2%).

In 2017, further steps were taken to reduce air emissions with a view to gradually achieving maximum permissible emission rates. The sulphur projects rolled out at Copper Plant and Nadezhda Metallurgical Plant are at different completion stages.

For more details, please see Key investment projects.

At Kola MMC’s Zapolyarny site, a cold briquetting technology was introduced in recent years instead of pellet roasting. Two new briquetting lines are now in operation, and the briquetting technology is being fine-tuned to meet the required quality standards. Sulphur dioxide emissions generated by the production processes reduced from 4.8 kt in 2016 to 1.6 kt in 2017.

In Monchegorsk, we are implementing the project – Electrowinning of Chlorine Dissolved Tube Furnace Nickel Powder for the Production Volume of 145 ktpa of Electrolytic Nickel. The project includes reconstruction of cathode nickel facilities in the tank-house to replace the existing electrorefining technology (using soluble anodes) with electrowinning of nickel from chlorine solutions. The new technology will help to reduce air emissions thanks to elimination of anode smelting.

Nor nickel has completed its project to produce 3,000 t of electrolytic cobalt fully replacing flame-synthesised cobalt production at the shut down Nickel Plant in Norilsk.

In 2017, gross pollutant emissions from Kola MMC amounted to 121.9 kt, which is 11 kt lower than in 2016 (down 8.2%). Sulphur dioxide emissions also reduced by almost 11 kt (down 8.9%), as well as solid (dust) emissions dropping by 480 t (down 6.5%). Lower pollutant emissions as compared to 2016 are attributable mainly to the discontinued pellet production at the Zapolyarny site, along with increased production of sulphuric acid and decreased content of sulphur in the products used for smelting purposes.

Nor nickel controls emissions during unfavourable weather conditions to lower concentration of pollutants in residential areas based on timely weather forecasts. In the reporting period, a total of 182 emission control cases were held at Polar Division’s metallurgical operations. 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 007 or 420 007.

At the moment, Russian legislators are working to introduce statutory requirements for greenhouse gas (GHG) emissions reporting. The Company is monitoring all legislative developments on this front to ensure compliance with the regulations.

In accordance with the applicable guidelines and regulations, Nor nickel has assessed its GHG emissions. Based on the current estimates, the Company emits around 10 mtpa of GHG (10,031 kt in 2016). In addition, in 2017, the Company reported, on a voluntary basis, its GHG emissions to the Russian Ministry of Natural Resources and Environment.
Nornickel uses a closed water circuit at its mining and metals operations. In general, 85% of all water used by the Company is recycled and reused. All sources of water used by the Company are subject to government-approved surveillance programmes for water and water protection zones.

In 2017, the Company continued to work on reducing discharges by gradually achieving the approved limits on the back of:
- optimised water cycle at Polar Division's concentration facilities;
- efforts made to purify production wastewater in the combined storm water collector and utility tunnel of Nadezhda Metallurgical Plant, as well as production wastewater from Lebyazhye tailings pit at Norilsk Concentrator;
- technologies developed to treat mine water at some mines;
- completion of pre-commissioning stage at the cement plant to implement a closed water circuit and local treatment facilities.

The Company’s waste management efforts are focused on the following:
- waste reuse maximisation;
- strengthening of tailings pits.

In 2017, Kola MMC received a treatment facility for saline effluent from nickel refining operations for a more integrated treatment of industrial effluents. This technology is unique for Russia, as chemical agents, specifically boric acid, flow back to the production circuit. So the Company produces sodium sulphate and chloride instead of harmful waste. The resulting steam and condensate are then reused in the nickel tank-house to heat solutions, operate heat exchangers. At Zapolyarny site, work is in progress to design a mining water treatment plant for Sovenny–Gluboky Mine.

Norilsk Nickel’s waste management efforts seek to ensure the repeated use of waste in its production cycle along with meeting statutory waste disposal limits. In 2017, the Company generated approximately 32 mt of production and consumption waste, and around 96% of such waste is deemed virtually non-hazardous for the environment and classified as hazard class 5 waste. This is mostly waste from the mining and smelting operations (rock and overburden, tailings, and metallurgical slag). Nearly 65% of all waste generated across the Company’s operations in 2017 was reused, with the rest of waste disposed of at special facilities.

For safe waste disposal, the Company completed the construction of a new tailings pit for Talnakh Concentrator, 6 km farther to the north-west of the Talnakh District. The facility was built using the most advanced technologies to reduce environmental impact.

In 2017, Kola MMC modernized and increased the capacity of its existing saline effluent treatment facility for saline effluent. The Group’s direct GHG emissions were stated based on the earlier estimates (ca. 10 mt of CO2 equivalent) made as part of a project to pilot the Guidelines and Instructions approved by Order of the Russian Ministry of Natural Resources No. 300 dated 30 June 2016. The quantitative estimates include carbon dioxide (CO2 ) and methane (СН4 ) emissions only. Pursuant to the above guidelines and instructions, reporting of other types of GHG emitted by the Company’s facilities is not required. Indirect energy-related GHG emissions were not assessed by the Company. There are currently no binding legal requirements in place for reporting GHG emissions, including the indirect energy-related ones.
### Environmental impact across Norilsk Nickel’s foreign operations

**Norilsk Nickel Harjavalta**

Norilsk Nickel Harjavalta 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.

#### Environmental impact metrics of Norilsk Nickel Harjavalta

<table>
<thead>
<tr>
<th>Item</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial wastewater, '000 cu m</td>
<td>728</td>
<td>771</td>
<td>899</td>
</tr>
<tr>
<td>Pollutants in industrial wastewater, t</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>SO$_4^{2-}$</td>
<td>20,051</td>
<td>22,457</td>
<td>25,853</td>
</tr>
<tr>
<td>NH$_4^+$ (rebased to nitrogen)</td>
<td>36.0</td>
<td>49.5</td>
<td>60.3</td>
</tr>
<tr>
<td>Total water consumption, mln cubic meters</td>
<td>10.4</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>Total air pollutant emissions, t</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>1.7</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>NH$_3$</td>
<td>70</td>
<td>70</td>
<td>69</td>
</tr>
<tr>
<td>Waste generation, kt</td>
<td>16.5</td>
<td>7.0</td>
<td>5.5</td>
</tr>
<tr>
<td>Waste disposal, kt</td>
<td>15.7</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

**Norilsk Nickel Nikomati**

The company is required to comply with both national environmental regulations and Norilsk Nickel Group’s corporate standards. Norilsk Nickel Nikomati pays close attention to environmental safety, is certified and regularly audited for compliance with ISO 14001.

#### Environmental impact metrics of Norilsk Nickel Nikomati

<table>
<thead>
<tr>
<th>Item</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total water consumption, mln cubic meters</td>
<td>0.088</td>
<td>0.3137</td>
<td>0.093</td>
</tr>
<tr>
<td>Waste generation, t</td>
<td>1,386</td>
<td>921</td>
<td>431</td>
</tr>
<tr>
<td>Waste disposal, t</td>
<td>634</td>
<td>1,611</td>
<td>845</td>
</tr>
<tr>
<td>Environmental expenditures, USD mln</td>
<td>0.57</td>
<td>0.42</td>
<td>0.27</td>
</tr>
</tbody>
</table>

Norilsk Nickel Harjavalta’s main environmental impact consists in the emissions of ammonia (NH$_4^+$) and nickel (Ni), and discharges of nickel, sulphates (SO$_4^{2-}$) and ammonia ions (NH$_4^+$). In 2017, Norilsk Nickel Harjavalta met all permit requirements for emissions, discharges and waste disposal volumes. Lower (by 1.5 kt) waste volumes are a result of switching to the Company’s feedstock that is less contaminated with impurities as compared to third party materials.

### 2017 MILESTONES

#### Biodiversity conservation

Norilnick acquired 235,000 salmon fingerlings and released them into the Umba River together with the Basin Authority for Fisheries and Conservation of Aquatic Biological Resources (Glavrybvod). By helping to recover the population of the Atlantic salmon, the Company makes up for its environmental impact. In addition to that, Norilnick provided assistance in releasing 316,000 sturgeon fingerlings into the Yenisei River. This was the largest project on releasing valuable fish species in the Company’s history.

As part of the Year of the Environment, Norilnick has signed the Cooperation Agreement with the Murmansk Region to support a number of projects in the nature park of the Rybachy and Sredny Peninsulas. The Company will allocate over RUB 7.5 mln to create nature trails and buy security equipment.

Zabaykalsky Krai Government and Norilnick signed the Cooperation Agreement to develop the Relict Oaks State Reserve located in the region. The amount of funding for the project stands at RUB 10 mln.

#### Cooperation with nature reserves

For over a decade now, Norilnick annually provided hundreds of millions of roubles to the nature reserves adjacent to the Company’s production facilities on the Taimyr and Kola Peninsulas for the purpose of preserving the unique Arctic environment.

This is in line with Norilnick’s strategy set to embrace green technologies in the next five years through a new investment cycle to secure sustainable development.

Kola MMC’s sites are only 10–15 km away from the Paskiv 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).

The main reasons behind significantly lower consumption of fresh water in 2017 was the use of collected rain water. Waste generation reduced due to the disposal of industrial rubber items and scrap metals.

Experts keep monitoring the environmental impact of Norilnick’s production sites on the nature reserves’ ecosystems. Long-term observation results show that environmental conditions are improving each year. “Scientists report growing populations of plants and animals along with the emergence of new species,” said Alexander Tyukin, head of Kola MMC’s R&D and Environmental Safety Department. – We have just discovered a rare plant species, a northern orchid that has not been seen since 2005. It speaks for itself.”

Norilnick annually provided hundreds of millions of roubles to the nature reserves.
In 2017, the Putoransky State Nature Reserve kept implementing projects selected under Norickel’s World of New Opportunities charitable programme.

Save the Bighorn Together

An ambitious programme to protect the endangered species of the bighorn found in the Putoransky Plateau only and listed on Russia’s Red Data Book. The Company provides funding for volunteer training at the Surveillance School, ground research to collect data on the bighorn population, and Putoransky Bighorn People festival of friends. The project’s funding totals some USD 86,000 (RUB 4.99 mln).

Norilsk Lakes to Norilsk People

Norilsk Lakes to Norilsk People project implemented since 2013 seeks to preserve the Big Norilsk Lakes, a unique ecosystem of subarctic mountains. During that time, Norickel provided funding for the recreational fisheries in the upper part of the Pysina River basin, tourist and trekking infrastructure, construction of a camping station at Lama Lake and a base station at Sobachye Lake. In 2017, as part of the project, the Company allocated over USD 17,000 (around RUB 1 mln) to finance an environmental and educational summer camp at Lake Lama for students of the volunteer school.

The Pasvik Nature Reserve is home to rare 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.

Key projects of the Pasvik Nature Reserve supported by Norickel

Visitor centre for tourists and researchers

The visitor centre of the Pasvik Reserve featuring a permanent environmental exposition was officially opened in January 2017 in the settlement of Nickel, Pechenganickel District. The visitor centre hosts ecological seminars and conferences, serving as a modern platform for discussing international cooperation issues. In 2011–2016, the Company allocated over USD 1.3 mln (RUB 77 mln) to the project. The visitor centre currently hosts ecological lessons for schoolchildren, exhibitions, lectures, discussions, and forums of various international organisations.

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.

For more details on other projects of World of New Opportunities programme
Business overview • Corporate responsibility • Environment

The Lapland State Nature Biosphere Reserve is one of the largest protected areas in Europe covering 278,000 ha. Established to save the wild reindeer from extinction, it now boasts over 1,000 reindeer, the largest reindeer herd in the Northern Europe.

The European beaver population has also been restored. Since 2002, the Lapland Biosphere Reserve to make a new nature trail and publish books about Oleg Semyonov-Tyan-Shansky and Herman Krups, the reserve founders. In 2017, the value of the contract signed with the Lapland Biosphere Reserve was some USD 60,000 (RUB 3.5 mln).

In 2017, the Company joined in the Norilsk municipal authorities’ effort to revamp the city’s public spaces doing some urban greening and sanitary improvements. The Company also contributed to the roadside clean-up, water body protection, waterfront landscaping and facelift of several camping sites.

Environmental recovery programmes

Aquatic biosources

In 2017, to compensate for the damage done to water bodies of the Yenisey River during the implementation of the Talnakh Concentrator upgrade and retrofit project and sand production at the Soredlysh Island deposit, the Company grew and released over 316,000 Siberian sturgeon fingerlings into the Yenisey River. To compensate for damage to water bodies during the construction of a transfer terminal in Murmansk, in 2017, Nornickel released over 235,000 salmon fingerlings into the Northern Fishery Basin.

Lanscaping

In 2017, Nornickel launched a pilot project utilising new landscaping technologies to establish sustainable grass cover in the disturbed areas. Perennial grasses and mixed grass crops were planted on the experimental 1 ha land plot close to Nadezhda Metallurgical Plant using a hydroseeding technology and complex additives adapted to northern conditions. The project's financing amounted to some USD 43,000 (RUB 2.5 mln).

Hydroseeding has a number of advantages over traditional planting method, namely quick landscaping and the possibility to cover remote locations, which is especially useful for slopes and hard-to-reach areas. Grass can be sown on virtually any surface featuring a difficult terrain. Experiments proved successful even for such technogenic surfaces as slag and concrete.

The Company regularly allocates funds for landscaping in the regions of operation. Since 2003, Kola MMC, upon recommendation from the nature reserves, has rehabilitated 100 ha of area in Monchegorsk, Zapolominy towns and Nickel settlement. Kola MMC has had approximately one million trees and bushes planted, including a pilot project to restore damaged land adjacent to the Company’s site together with the Kola Science Centre of the Russian Academy of Sciences. In 2017, the value of the contract signed with the Lapland Biosphere Reserve was some USD 60,000 (RUB 3.5 mln).

In summer 2017, the Company joined in the Norilsk municipal authorities’ effort to revamp the city’s public spaces doing some urban greening and sanitary improvements. The Company also contributed to the roadside clean-up, water body protection, waterfront landscaping and facelift of several camping sites.

Sanitary clean-up

In 2017, Nornickel carried out a clean-up, land improvement, revamp of warehouses, and improvement of territories assigned to the Company by the order of the Dudinka Administration. Nornickel also carried out post-flooding recovery to clean the coasts and water protection zones along the water bodies.

Environmental education

Other environmental developments in 2016 included the Ecological Marathon launched by the Company in Norilsk as part of its Plant of Goodness corporate volunteer programme.

In 2017, Norilsk Nickel’s total expenditure in this area exceeded USD 7,000. The Company’s volunteer teams polled over 900 respondents about their ecological habits, produced about 50 items from recycled materials, designed 26 environmental education posters, implemented clean-up initiatives in the tundra and Dolgoye Lake, and ran a campaign to care about trees planted in 2016 at the Zapolominy stadium. Twelve nest boxes were put up on trees during the trip to Lake Lama.

Intermediate energy consumption by the Group

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2015</th>
<th>2016</th>
<th>2016, %</th>
<th>2017</th>
<th>2017, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric power, TJ, including</td>
<td>42,943</td>
<td>50</td>
<td>66,250</td>
<td>50</td>
<td>66,355</td>
</tr>
<tr>
<td>Electric power generated by the Company’s enterprises from renewable energy sources (MWh)</td>
<td>17,027</td>
<td>40</td>
<td>11,856</td>
<td>36</td>
<td>12,175</td>
</tr>
<tr>
<td>Heating and cooling energy, TJ</td>
<td>25,721</td>
<td>33</td>
<td>29,888</td>
<td>46</td>
<td>24,951</td>
</tr>
<tr>
<td>Steam, low-grade heat, TJ</td>
<td>8,852</td>
<td>11</td>
<td>8,810</td>
<td>4</td>
<td>5,507</td>
</tr>
<tr>
<td>Total</td>
<td>77,356</td>
<td>100</td>
<td>65,621</td>
<td>100</td>
<td>61,963</td>
</tr>
</tbody>
</table>

The Lapland State Nature Biosphere Reserve (Kola Peninsula)
Energy efficiency

Norilsk's major production assets are located beyond the Arctic Circle where the winter lasts eight months a year. It is therefore critical for the Group to ensure reliable and high-quality power supply to its enterprises and population in the regions where it operates.

In 2017, the Company implemented a number of organisational arrangements and upgrades of its key power equipment as part of the Energy Saving and Energy Efficiency Programme.

These initiatives helped achieve savings of 100,196 tonnes of reference fuel (units) for CHPPs, 44,867 mln kWh of electricity for internal needs and 177,732 Gcal of heat against the targets.

In 2017, per unit fuel consumption at CHPPs decreased to 281.4 g/kWh, down by 13.9 g/kWh against the annual budget targets, 27.7 g/kWh vs 2015.

In 2017, the share of renewable energy stood at 38% in 2016 vs 2015.

In 2017, the Company delivered excellent financial results, with revenue increasing by 11% to USD 9 bn and EBITDA margin holding at 44%, one of the best results among global mining peers.

On top of that, we succeeded in significantly improving the Company’s debt profile and raising debt financing at record low interest rates, which will help us save over USD 150 mln per annum in interest expenses.

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On top of that, we succeeded in significantly improving the Company’s debt profile and raising debt financing at record low interest rates, which will help us save over USD 150 mln per annum in interest expenses.

In 2017, we launched highly ambitious programmes to improve labour productivity. Furthermore, automation of our IT and production processes continues at a fast pace, while all the support functions are currently being transferred to and consolidated under the Shared Services Centre in Saratov. Also, we commissioned a fibre optic communication line in Norilsk, which will enable us to smoothly implement SAP ERP systems, while also providing the city’s residents with access to high-speed internet.

In 2018, we plan to release over USD 1 bn of our working capital and reduce our leverage (net debt to EBITDA ratio) to below 1.5x by the year-end. We also confirm our CAPEX guidance at ca. RUB 2 bn, including USD 200 mln of investments to complete the construction of Bystrinsky GOK.

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Sergey Malyshov
The Company’s Senior Vice President and Chief Financial Officer

On January 30, 2018 Moody’s rating agency has raised Norilsk nickel credit rating to the investment grade level “Ba3” and changed the outlook from “Stable” to “Positive”. Therefore, Norilsk currently has investment grade credit ratings from all three international rating agencies Fitch, Moody’s and S&P Global.
Key Corporate Highlights

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>9,146</td>
<td>8,259</td>
<td>11</td>
</tr>
<tr>
<td>EBITDA¹</td>
<td>3,995</td>
<td>3,899</td>
<td>2</td>
</tr>
<tr>
<td>EBITDA margin</td>
<td>44%</td>
<td>47%</td>
<td>(3 p.p.)</td>
</tr>
</tbody>
</table>
| Net profit | 2,123 | 2,531 | (16%)
| Capital expenditures | 2,012 | 1,714 | 17 |
| Free cash flow² | (173) | 1,581 | (111%)
| Net working capital² | 2,149 | 455 | 5x |
| Net debt² | 8,201 | 4,530 | 81% |
| Net debt, normalized for the purpose of dividend calculation³ | 7,495 | n.a. | n.a. |
| Net debt/12M EBITDA for dividends calculation | 1.88x | n.a. | n.a. |
| dividends paid per share (USD) | 18.8 | 7.8 | 141% |
| Net working capital² | 2,149 | 455 | 5x |
| Net debt² | 8,201 | 4,530 | 81% |
| Net debt, normalized for the purpose of dividend calculation³ | 7,495 | n.a. | n.a. |
| Net debt/12M EBITDA for dividends calculation | 1.88x | n.a. | n.a. |
| dividends paid per share (USD) | 18.8 | 7.8 | 141% |

Key Segmental Highlights⁵

USD million (unless stated otherwise)

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>9,146</td>
<td>8,259</td>
<td>11</td>
</tr>
<tr>
<td>Group GMK</td>
<td>7,671</td>
<td>6,194</td>
<td>24</td>
</tr>
<tr>
<td>Group KGMM</td>
<td>888</td>
<td>664</td>
<td>34</td>
</tr>
<tr>
<td>NN Harjavalta</td>
<td>840</td>
<td>727</td>
<td>16</td>
</tr>
<tr>
<td>Other metalurgical</td>
<td>141</td>
<td>84</td>
<td>68</td>
</tr>
</tbody>
</table>
| Other non-metalurgical | 1,266 | 1,699 | (25%)
| Eliminations | (1,660) | (1,109) | 50 |
| Consolidated EBITDA | 3,995 | 3,899 | 2 |
| Group GMK | 4,701 | 3,883 | 21 |
| Group KGMM | 169 | 117 | 44 |
| NN Harjavalta | 84 | 45 | 87 |
| Other metalurgical | (53) | (71) | 5x |
| Other non-metalurgical | 114 | 119 | (4) |
| Eliminations | (377) | 112 | n.a. |
| Unallocated | (643) | (366) | 76 |
| EBITDA margin | 44% | 47% | (3 p.p.) |
| Group GMK | 61% | 63% | (2 p.p.) |
| Group KGMM | 19% | 18% | 1 p.p. |
| NN Harjavalta | 15% | 6% | 4 p.p. |
| Other metalurgical | (38%) | (13%) | (25 p.p.) |
| Other non-metalurgical | 5% | 7% | 2 p.p. |

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 Normalized on interim dividends and deposits with maturity of more than 30 days.
⁴ Paid during the current period.
⁵ Segments are defined in the consolidated financial statements.

Revenue

In 2017, revenue of Group GMK segment increased by 24% to USD 7,671 million. This was primarily driven by higher realized metal prices and transition of NN Harjavalta to the Company’s own Russian feed. This positive effect was partly compensated by lower sales volume in 2017 owing to accumulation of palladium in 2017 and release of stock in 2016.

The revenue of Group KGMM segment increased by 34% to USD 888 million mainly due to the increase in revenue from processing of the feed coming from Polar division.

Revenue of NN Harjavalta increased by 16% to USD 840 million. This was primarily driven by higher realized metal prices and increased metal production from the Company’s own Russian feed.

Revenue of Other metallurgical segment increased by 68% to USD 141 million. This was primarily driven by higher realized metal prices.

Revenue of Other non-metalurgical segment decreased by 25% to USD 1,266 million. This was driven primarily by changes of inter-segment revenue streams driven by transition to Group’s own Russian feed and accumulation of metal stock in 2017.

Cash Operating Costs

USD million (unless stated otherwise)

<table>
<thead>
<tr>
<th>☛</th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
</table>
| Group Nickel, thousand tons¹ | 215 | 271 | (21%)
| from own Russian feed | 206 | 229 | (10%)
| from 3rd parties feed | 0 | 42 | (79%)
| Copper, thousand tons¹ | 368 | 374 | (2%)
| from own Russian feed | 365 | 369 | (1%)
| from 3rd parties feed | 3 | 5 | (40%)
| Palladium, koz¹ | 2,405 | 2,779 | (13%)
| from own Russian feed | 2,353 | 2,758 | (15%)
| from 3rd parties feed | 52 | 21 | 148% |
| Platinum, koz¹ | 657 | 605 | 9%
| from own Russian feed | 639 | 601 | 6%
| from 3rd parties feed | 18 | 8 | 125% |
### Business overview

#### Silver, koz

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-products</td>
<td>759</td>
<td>552</td>
<td>36%</td>
</tr>
<tr>
<td>Palladium</td>
<td>495</td>
<td>832</td>
<td>-42%</td>
</tr>
<tr>
<td>Copper</td>
<td>179</td>
<td>278</td>
<td>-36%</td>
</tr>
</tbody>
</table>

#### Semi-products, silver, koz

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-products</td>
<td>2,469</td>
<td>2,565</td>
<td>-4%</td>
</tr>
<tr>
<td>Palladium</td>
<td>3</td>
<td>5</td>
<td>-40%</td>
</tr>
</tbody>
</table>

#### Semi-products, nickel, thousand tons

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-products</td>
<td>17</td>
<td>13</td>
<td>31%</td>
</tr>
<tr>
<td>Copper</td>
<td>28</td>
<td>15</td>
<td>87%</td>
</tr>
</tbody>
</table>

#### Semi-products, palladium, koz

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-products</td>
<td>158</td>
<td>115</td>
<td>36%</td>
</tr>
</tbody>
</table>

#### Semi-products, platinum, koz

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-products</td>
<td>48</td>
<td>43</td>
<td>12%</td>
</tr>
</tbody>
</table>

#### Semi-products, gold, koz

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-products</td>
<td>8</td>
<td>9</td>
<td>-11%</td>
</tr>
</tbody>
</table>

#### Semi-products, silver, koz

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-products</td>
<td>528</td>
<td>546</td>
<td>-3%</td>
</tr>
</tbody>
</table>

### AVERAGE REALIZED PRICES OF METALS PRODUCED BY NORILSK NICKEL

#### Nickel

- **USD per tonne**: 10,704 vs 9,701 (10% increase)
- **USD per oz**: 949 vs 977 (3% decrease)

#### Palladium

- **USD per tonne**: 2,346 vs 1,888 (24% increase)
- **USD per oz**: 623 vs 654 (5% decrease)

#### Platinum

- **USD per tonne**: 949 vs 1,085 (32% decrease)
- **USD per oz**: 28 vs 43 (35% decrease)

### Revenue from metals

#### Nickel

Nickel sales accounted for 27% of the Group’s total metal revenue in 2017 down from 34% in 2016. The decrease by 7 p.p. was driven by the reduction of sales volumes following a decrease of metal production from third party feed and stronger performance of palladium and copper relative to nickel price.

In 2017, nickel revenue decreased by 12% (or USD 321 million) to USD 2,304 million primarily due to lower sales volumes (USD 593 million) owing to decrease of Nickel production from third parties feed and the higher base effect as temporary metal stock was sold in 2016 which was partly offset positively by higher nickel price (USD 267 million).

Additional USD 5 million to nickel revenue in 2017 was contributed by the re-sale of purchased metal to fulfil the Company’s contractual obligations.

The average realized nickel price increased 10% to USD 10,704 per tonne in 2017 from USD 9,701 per tonne in 2016.

Sales volume of nickel produced by the Company from its own Russian feed decreased by 10% (or 23 thousand tons) to 206 thousand tons. The decrease was primarily driven by the sale of metal from a temporary stock in 2016.

#### Palladium

In 2017, palladium became the largest contributor to the Group’s revenue, accounting for 28% of the Group’s total metal revenue, up by 3 p.p. The palladium revenue increased 24% (or USD 458 million) to USD 2,346 million. The positive impact of higher realized price (USD 681 million) was partly negatively offset by the reduction of sales volume (USD 324 million) mainly owing to the higher base effect as temporary metal stock was sold in 2016 and stock accumulation in 2017 in Palladium fund.

Additional USD 285 million to palladium revenue in 2017 was contributed by the re-sale of purchased metal to fulfil the Company’s contractual obligations (vs USD 184 million in 2016).

#### Platinum

In 2017, platinum sales accounted for 7% of the Group’s total metal revenue and decreased by 5% (or USD 31 million) to USD 623 million due to lower volumes of platinum sales owing to the higher base effect as metal stock was sold in 2016 (USD 11 million) and lower realized platinum price (USD 20 million) down 3% from USD 977 per oz in 2016 to USD 945 per oz in 2017.

#### Copper

In 2017, copper sales accounted for 27% of the Group’s total metal sales, increasing 24% (or USD 442 million) to USD 2,281 million primarily owing to higher realized copper price (USD 483 million) that was partly negatively offset by the decrease in sales volume (USD 41 million).

The average realized copper price increased 26% from USD 4,911 in 2016 to USD 6,202 per tonne in 2017.

#### Other metals

In 2017, revenue from other metals increasing 3% (or USD 13 million) to USD 437 million owing to the increase in molybdenum (up 30%) and cobalt (up 8%) sales which was partly negatively offset by lower gold (down 9%) and silver (down 5%) revenue.

---

1. All information is reported on the 100% basis, excluding sales of metals purchased from third parties.
2. Metal volumes represent metals contained in semi-products.
In 2017, semi-products revenue (primarily copper and nickel concentrate) increased by USD 208 million (or 96%) to USD 424 million, and accounted for 5% of the Group’s total metal revenue. This increase was mainly driven by higher physical sales to third parties instead of processing these semis at the Company’s own refineries.

Cost of Metal Sales

Cost of metals sales

In 2017, the cost of metal sales increased by 9% (or USD 33 million) to USD 3,968 million owing to:
- Increase in cash operating costs by 33% (USD 965 million);
- Increase in depreciation charges by 38% (USD 174 million);
- Change in metal inventories y-o-y (cost of metal sales decrease by USD 104 million).

Cash operating costs

In 2017, total cash operating costs increased by 33% (or USD 965 million) to USD 3,852 million.

Cash operating costs

<table>
<thead>
<tr>
<th>USD million</th>
<th>2017</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchases of metals for resale</td>
<td>1,177</td>
<td>1,467</td>
<td>-20%</td>
</tr>
<tr>
<td>Purchases of raw materials and semi-products</td>
<td>530</td>
<td>164</td>
<td>188%</td>
</tr>
<tr>
<td>Fuel</td>
<td>81</td>
<td>60</td>
<td>35%</td>
</tr>
<tr>
<td>Electricity and heat energy</td>
<td>152</td>
<td>101</td>
<td>51%</td>
</tr>
<tr>
<td>Production costs related to joint operation</td>
<td>93</td>
<td>79</td>
<td>18%</td>
</tr>
<tr>
<td>Transportation expenses</td>
<td>64</td>
<td>71</td>
<td>-10%</td>
</tr>
<tr>
<td>Sundry costs</td>
<td>150</td>
<td>143</td>
<td>5%</td>
</tr>
<tr>
<td>Total cash operating costs</td>
<td>3,852</td>
<td>2,887</td>
<td>33%</td>
</tr>
</tbody>
</table>

Depreciation and amortisation

<table>
<thead>
<tr>
<th>USD million</th>
<th>2017</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour</td>
<td>1,377</td>
<td>1,467</td>
<td>-20%</td>
</tr>
<tr>
<td>Materials and supplies</td>
<td>66</td>
<td>60</td>
<td>10%</td>
</tr>
<tr>
<td>Minerals and supplies</td>
<td>503</td>
<td>520</td>
<td>-3%</td>
</tr>
<tr>
<td>Mineral extraction tax and other levies</td>
<td>221</td>
<td>222</td>
<td>-1%</td>
</tr>
<tr>
<td>Third-party services</td>
<td>204</td>
<td>170</td>
<td>20%</td>
</tr>
<tr>
<td>Purchases of raw materials and semi-products</td>
<td>530</td>
<td>164</td>
<td>188%</td>
</tr>
<tr>
<td>Purchases of metals for resale</td>
<td>1,177</td>
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<td>152</td>
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<td>71</td>
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<tr>
<td>Total cash operating costs</td>
<td>3,852</td>
<td>2,887</td>
<td>33%</td>
</tr>
</tbody>
</table>

Depreciation and amortisation

<table>
<thead>
<tr>
<th>USD million</th>
<th>2017</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation and amortisation</td>
<td>630</td>
<td>456</td>
<td>38%</td>
</tr>
<tr>
<td>Total cost of metal sales</td>
<td>3,968</td>
<td>3,633</td>
<td>9%</td>
</tr>
</tbody>
</table>

Other sales

In 2017, other sales were up by 18% or USD 731 million primarily owing to the Russian rouble appreciation (USD 80 million) and revenue increase in real terms driven by the increase of prices for services provided to third parties (USD 13 million), and higher revenue from transport and consumer services subsidiaries of the Group, which was partly offset negatively by the divestiture of non-core assets.

Labour

In 2017, labour costs increased by 20% (or USD 231 million) to USD 1,377 million amounting to 36% of the Group’s total cash operating costs driven by the following:
- USD 162 million – cost increase owing to the Russian rouble appreciation against US Dollar;
- USD 50 million – cost decrease following the decrease of production staff headcount owing primarily to the Nickel plant closure and ongoing downstream reconfiguration program;
- USD 119 million – other increase in real terms primarily driven by the indexation of RUB-denominated salaries and wages.

Purchases of metals for resale

In 2017, purchases on the purchase of metals for resale increased 3 times (or by USD 346 million) to USD 530 million. Metal purchase increase is primarily due to piling up metal stocks to meet additional demand of the Company’s key clients, primarily palladium.

Purchases of raw materials and semi-products

In 2017, expenses on the purchase of raw materials and semi-products increased by 2% (or by USD 5 million) to USD 279 million driven by the following:
- USD 5 million – cost increase owing to higher semi-products prices;
- USD 10 million – cost increase owing to the increase of purchased semi-products from Nkomati for further resale to third parties;
- USD 275 million – cost reduction resulting from the decrease of purchased semi-products from third parties for processing at NN Harjavalta as part of ongoing downstream reconfiguration program.

Mineral extraction tax and other levies

In 2017, mineral extraction tax and other levies increased by 18% (or USD 99 million) to USD 221 million. The negative effect of the Russian rouble appreciation amounted to USD 18 million.

Cash cost increase in real terms by USD 81 million was primarily driven by the higher mineral extraction tax rate resulting from the change in legislation (USD 83 million), resulting from cancellation of PGM export duties in 2016 for metals, produced by the Company, and the increase in mineral extraction tax rate in January 2017 due to a partly compensated by cancellation of PGM export duties in September 2016.

Electricity and heat energy

In 2017, electricity and heat energy expenses increased by 31% (or USD 31 million) to USD 132 million driven by the following:
- USD 10 million – negative effect of the Russian rouble appreciation;
- USD 22 million – increase in expenses owing to higher consumption of energy due to the ongoing downstream reconfiguration program (Polar division feed processing at Kolua MMC, which purchases electricity from third parties) and energy tariffs inflationary growth.

Fuel

In 2017, fuel expenses increased by 35% (or USD 21 million) to USD 81 million driven by the following:
- USD 8 million – negative effect of the Russian rouble appreciation;
- USD 15 million – higher fuel oil and other oil products prices.
Transportation expenses

In 2017, transportation expenses decreased by 10% (or USD 7 million) to USD 64 million driven by the following:
- USD 7 million – negative effect of the Russian rouble appreciation;
- USD 14 million – costs decrease driven by transportation of Nikomati concentrate to third parties instead of NN Herjavitsa production facilities.

Sundry costs

In 2017, sundry costs increased by 5% (or USD 7 million) to USD 150 million, driven by the following:
- USD 19 million – negative effect of the Russian rouble appreciation;
- USD 52 million – decrease in insurance expenses owing to the renegotiation of property insurance agreements on the same insurance cover terms.

Production costs related to joint operation

In 2017, production costs related to joint operation increased by 18% (or USD 14 million) to USD 93 million, driven by the following:
- USD 8 million – negative effect of the South African rand appreciation;
- USD 6 million – increase in expenses owing to the higher sales volume of Nikomati concentrates.

Depreciation and amortisation

In 2017, depreciation and amortisation increased by 38% (or USD 74 million) to USD 330 million.

Russian rouble appreciation amounted to depreciation and amortisation increase by USD 62 million.

Depreciation charges increased in real terms by USD 12 million mainly due to additions to production assets at the Company’s operating subsidiaries in Russia in 2H2016 and in 2017.

(Decrease)/decrease of metal inventories

In 2017, comparative effect of change in metal inventory amounted to USD 804 million resulting in a decrease in cost of metal sales, driven by the following:
- USD 729 million – sale of metal from temporary stock in 2016 as part of reconfiguration programme, as well as a built-up of palladium stock and accumulation of metal stock in 2017 to meet additional demand of the Company’s key customers;
- USD 75 million – comparative effect of change in work-in-progress, primarily due to higher accumulation of work-in-progress at Russian subsidiaries of the Group in 2017 as part of ongoing downstream reconfiguration program and due to start of Rostec copper concentrate processing in 2017.

Cost of Other Sales

In 2017, cost of other sales increased by 24% (or USD 124 million) to USD 632 million.

Russian rouble appreciation amounted to cost of other sales increase by USD 72 million.

Cost of other sales increased in real terms by USD 52 million comprised of USD 96 million increase in expenses resulting from higher transportation services, indexation of RUB-denominated salaries and wages and growth of other services, which were partly offset positively by the sale of non-core assets resulting in a cost reduction of USD 44 million.

Selling and Distribution Expenses

Selling and distribution expenses decreased 32% (or USD 36 million) to USD 226 million due to:
- USD 20 million – higher property tax and amortisation charges.

Other Net Operating Expenses

In 2017, other net operating expenses increased by USD 278 million to USD 362 million owing to one-off social expenses including an estimated provisional cost of long-term social agreement with the government of Zabaikalsky Krai and expenses attributed to the development of a skiing resort in Sochi.

Finance Costs

Other increase of other net operating expenses was primarily driven by change in allowances for doubtful debts, obsolete and slow-moving inventory and other current assets in line with annual stock counts as well as reversal of provision for reconfiguration of production facilities in 2016.
Increase in finance costs by 18% y-o-y to USD 535 million was mainly driven by increase of Unwinding of discount on provisions and payables.

In 2017, the Company reduced the average cost of debt to the level of 4.6% as of year-end 2017 from 5.1% as of year-end 2016 due to the consistent implementation of financial policy targets that enabled to partially offset the multiple increase of base rates (Libor) in the current period.

Major factors of the decrease of the average cost of debt:
• Reduction of funding cost of more expensive Rouble denominated debt in credit portfolio by its substitution by Dollar denominated debt in H1-2017, together with the reduction of interest rate of the bilateral Rouble denominated credit line in the amount of RUB 60 billion in October 2017.
• Partial refinancing of more expensive bilateral credit lines by proceeds of 5-year syndicated facility in the amount of USD 2.5 billion under which Norilnickel has achieved one of the lowest interest rates of Libor 1M+1.50% per annum available for Russian corporates on international syndicated market since 2008 for the transactions of such size and term. In addition, Norilnickel managed to reduce interest rates under the rest Dollar denominated bilateral credit lines within the Group’s portfolio.
• In July 2017, the Company reached an agreement with PJSC Sberbank to reduce interest rate under GRK Bystrinskoye LLC project financing by issuing guarantee on behalf of PJSC MMC Norilsk Nickel to secure performance obligations of GRK Bystrinskoye LLC.

Income Tax Expense
In 2017 income tax expense decreased by 3% to USD 719 million driven mostly by the decrease of taxable profit, partly offset by Russian rouble appreciation against US Dollar in 2017.

The effective income tax rate in 2017 of 25.3% was above the Russian statutory tax rate of 20%, which was primarily driven by non-deductible social expenses, as well as an increase in provisions for impairment of property, plant and equipment.

Income Tax Expense

<table>
<thead>
<tr>
<th>USD million</th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current income tax expense</td>
<td>686</td>
<td>686</td>
<td>0%</td>
</tr>
<tr>
<td>Deferred tax expense</td>
<td>59</td>
<td>59</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>745</td>
<td>745</td>
<td>0%</td>
</tr>
</tbody>
</table>

The breakdown of the current income tax expense by tax jurisdictions

<table>
<thead>
<tr>
<th>USD million</th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian Federation</td>
<td>672</td>
<td>679</td>
<td>(1%)</td>
</tr>
<tr>
<td>Finland</td>
<td>8</td>
<td>5</td>
<td>60%</td>
</tr>
<tr>
<td>Rest of the world</td>
<td>2</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>686</td>
<td>686</td>
<td>0%</td>
</tr>
</tbody>
</table>

In 2017, EBITDA increased by 2% (or USD 96 million) to USD 3,995 million with the EBITDA margin amounting to 44% (down from 47% in 2016). Increase in metal prices was almost offset by lower sales volume in 2017 owing to accumulation of stock in 2017 and release of temporary metal stock in 2016 as well as increased cash costs on the back of the Russian rouble appreciation against US Dollar and one-off increase in social expenses.

Net Profit Before Non-Cash Write-Offs and Foreign Exchange Differences

<table>
<thead>
<tr>
<th>USD million</th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net profit</td>
<td>2,123</td>
<td>2,531</td>
<td>(16%)</td>
</tr>
<tr>
<td>Impairment of non-financial assets</td>
<td>227</td>
<td>244</td>
<td>(7%)</td>
</tr>
<tr>
<td>Foreign exchange gain</td>
<td>(151)</td>
<td>(491)</td>
<td>(68%)</td>
</tr>
<tr>
<td>Net profit before non-cash write-offs and foreign exchange differences</td>
<td>2,171</td>
<td>2,258</td>
<td>(4%)</td>
</tr>
</tbody>
</table>

Statement of Cash Flows

<table>
<thead>
<tr>
<th>USD million</th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash generated from operations before changes in working capital and income tax</td>
<td>4,103</td>
<td>3,958</td>
<td>4%</td>
</tr>
<tr>
<td>Movements in working capital</td>
<td>(1,670)</td>
<td>83</td>
<td>n.a.</td>
</tr>
<tr>
<td>Income tax paid</td>
<td>(670)</td>
<td>(530)</td>
<td>26%</td>
</tr>
<tr>
<td>Net cash generated from operating activities</td>
<td>2,171</td>
<td>2,258</td>
<td>(4%)</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>(2,002)</td>
<td>(1,714)</td>
<td>17%</td>
</tr>
<tr>
<td>Net cash used in investing activities</td>
<td>(1,936)</td>
<td>(1,920)</td>
<td>1%</td>
</tr>
<tr>
<td>Effects of foreign exchange differences on balances of cash and cash equivalents</td>
<td>(63)</td>
<td>35</td>
<td>n.a.</td>
</tr>
<tr>
<td>Net decrease in cash and cash equivalents</td>
<td>(2,473)</td>
<td>(773)</td>
<td>3x</td>
</tr>
</tbody>
</table>

In 2017, net cash generated from operating activities decreased by 50% y-o-y to USD 1.8 billion primarily driven by the increase in working capital in 2017 following the optimisation of trade financing terms, partial payment of payables due to Rostec and increase of metal stock.
Change of the net working capital

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net debt /12M EBITDA</td>
<td>1.88x</td>
<td>n.a.</td>
<td>–</td>
</tr>
<tr>
<td>Change of the net working capital in the balance sheet</td>
<td>(1,034)</td>
<td>575</td>
<td>–</td>
</tr>
<tr>
<td>Foreign exchange differences</td>
<td>115</td>
<td>38</td>
<td>–</td>
</tr>
<tr>
<td>Change in income tax payable</td>
<td>(1)</td>
<td>(16)</td>
<td>–</td>
</tr>
<tr>
<td>Other changes, including reserves</td>
<td>(94)</td>
<td>(569)</td>
<td>–</td>
</tr>
<tr>
<td>Change of working capital per cash flow</td>
<td>(1,670)</td>
<td>83</td>
<td>–</td>
</tr>
</tbody>
</table>

Capital investments breakdown by projects

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polar Oreone, including</td>
<td>860</td>
<td>884</td>
<td>(2)%</td>
</tr>
<tr>
<td>Skolye mine</td>
<td>279</td>
<td>151</td>
<td>80%</td>
</tr>
<tr>
<td>Sayanore mine</td>
<td>93</td>
<td>68</td>
<td>37%</td>
</tr>
<tr>
<td>Komsornoye mine</td>
<td>11</td>
<td>40</td>
<td>(75)%</td>
</tr>
<tr>
<td>Oktyabrsky mine</td>
<td>69</td>
<td>59</td>
<td>17%</td>
</tr>
<tr>
<td>Talnokh Concentrator</td>
<td>89</td>
<td>253</td>
<td>(66)%</td>
</tr>
<tr>
<td>Reconstruct/ modernisation of production facilities related to closing of Nickel plant</td>
<td>11</td>
<td>24</td>
<td>(56)%</td>
</tr>
<tr>
<td>Total</td>
<td>2,002</td>
<td>1,734</td>
<td>17%</td>
</tr>
</tbody>
</table>

In 2017, CAPEX increased by 17% to USD 2.0 billion. The growth was mainly due to the completion of construction and start of hot commissioning of Bystrinsky mining and concentration complex (Bystrinsky project) in Zabaykalsky region, as well as to the ramp-up of projects related to the modernisation of nickel refining facilities at Kola MMC in line with the Company’s reconfiguration program.

Debt and Liquidity Management

<table>
<thead>
<tr>
<th></th>
<th>As of 31 December 2017</th>
<th>As of 31 December 2016</th>
<th>Change, USD million</th>
<th>Change, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term</td>
<td>8,216</td>
<td>7,276</td>
<td>940</td>
<td>13%</td>
</tr>
<tr>
<td>Short-term</td>
<td>817</td>
<td>579</td>
<td>238</td>
<td>41%</td>
</tr>
<tr>
<td>Total</td>
<td>9,033</td>
<td>7,855</td>
<td>1,188</td>
<td>15%</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>852</td>
<td>3,325</td>
<td>(2,473)</td>
<td>(74)%</td>
</tr>
<tr>
<td>Net debt</td>
<td>8,201</td>
<td>4,530</td>
<td>3,671</td>
<td>81%</td>
</tr>
<tr>
<td>Net debt /12M EBITDA</td>
<td>2.1x</td>
<td>1.2x</td>
<td>0.9x</td>
<td>–</td>
</tr>
<tr>
<td>Net debt /12M EBITDA for dividend payments</td>
<td>1.88x</td>
<td>n.a.</td>
<td>n.a.</td>
<td>–</td>
</tr>
</tbody>
</table>

¹ Includes one-off effect of copper concentrate purchase from Rosatom.

Net debt/EBITDA ratio increased to 2.1x as of the year-end 2017 from 1.2x as of year-end 2016. Such increase was caused by the growth of Net debt by 81% to USD 8,201 million as a result of 74% decrease in Cash and cash equivalents to USD 852 million. Substantial decrease of Cash and cash equivalents was mainly caused by the increase of working capital, in particular due to the early repayment of advances from off-takers in the amount of USD 650 million, as the margin under these advances at the end of the year was twice as higher than the one under the bank loans available for the Company. By the beginning of 2018 the Company reached agreements with a number of its off-takers on new terms of the advances. In February 2018, Norilsk entered into a new advance transaction for the amount of USD 300 million with one of its counterparties. The Company also continues to balance its liquidity cushion with more flexible and cost efficient financial instruments such as committed reserved credit lines. As of December 31, 2017, the Group maintained additional liquidity sources in form of committed reserved credit lines in the total amount of more than USD 3 billion.

In 2017, Norilsk continued to optimize its debt portfolio in order to improve its profile, further reduce average cost of debt and maintain its average maturity profile in line with the year-end 2016. In 2017 Norilsk reduced the share of more expensive Rouble denominated debt in its portfolio from 29% as of the year-end 2016 to 15% as of December 31, 2017, by prepayment of Rouble denominated credit facilities in the amount of RUB 60 billion and successful placement of two Eurobond issues totaling USD 1.5 billion. In April 2017, Norilsk issued USD 1 billion Eurobond maturing in 2023 with an annual coupon rate of 4.10% that was inside the Company’s outstanding Eurosouls curve. In June 2017, the Group closed a USD 500 million Eurobond offering maturing in 2022 with an annual coupon rate of 3.849%. The coupon was fixed at the lowest level ever for the Company’s issuances on international debt capital markets.

In December 2017, the Company signed a 5-year syndicated facility in the amount of USD 2.5 billion with 15 international banks from America, Europe and Asia. The funds were used to partially refinance the existing bilateral credit lines and provide for liquidity reserve to address the Company’s funding needs in H22018, in particular for repayment of Eurobond issue maturing in April 2018. Such strategy enabled the Company to eliminate refinancing risks for the next two years in 2018-2019.

In 2017, the Company’s credit ratings assigned by S&P Global and Fitch remained at investment grade level of “BBB” with “Stable” outlooks. As of the year-end 2017, the Company’s credit rating assigned by Moody’s remained at the level of “Ba1” with “Stable” outlook capped by Russia’s sovereign country ceiling. On January 29, 2018, Moody’s rating agency raised Norilsk credit rating to the investment grade level “Baa3” with “Positive” outlook following the change of Russia’s country ceiling for foreign currency debt to “Baa3” and the outlook on sovereign rating to “Positive” from “Stable”. Therefore, currently Norilsk has investment grade credit ratings from all three international rating agencies Fitch, Moody’s and S&P Global.
Deputy Chairman’s letter

Corporate governance is key to the success of MMC Norilsk Nickel as a public company. The Corporate Governance, Nomination and Remuneration Committee works hard alongside the Board of Directors to implement best corporate governance practices and procedures across the Company.

This goes beyond the pragmatics of investor appeal and shareholder confidence, and becomes an essential tool to improve the efficiency of our operations and maintain our competitive edge. In 2017, we approved the new version of the Company’s Charter while also introducing a number of by-laws (regulations and policies) to make sure we are aligned with global best practices and retain our leadership in the global market to enhance trust with our shareholders and investors.

The Corporate Governance Excellence Programme launched by the Corporate Governance, Nomination and Remuneration Committee has been in place since 2014. In line with that programme, in 2014–2017, the Board of Directors approved several by-laws designed to improve our corporate governance. Those included: Code of Conduct and Ethics for Members of Board of Directors, Professional Development Policy for Members of Board of Directors, Performance Evaluation Policy for Board of Directors, Policy on Development and Approval of Vote Recommendations on Candidates Nominated to Board of Directors, Dividend Policy, and new versions of regulations on the Board committees.

In 2017, the Company continued to enhance its corporate governance framework following the standards set out in the Corporate Governance Code, which was endorsed by the Bank of Russia. Special focus was given to planning and implementing sustainable development and corporate social responsibility initiatives, greater efficiency of the Board of Directors and its committees, strengthening of the internal audit function, enhanced transparency and disclosure levels.

Throughout 2017, the Audit and Sustainable Development Committee reviewed reports on key strategic and operational risks and also the current status of the Company’s risk management framework. As part of its assessment of internal controls, the committee engaged in regular analysis of reports prepared by the Internal Control Department. Health, safety, and environment remained a priority for us. On a quarterly basis, the Audit and Sustainable Development Committee reviewed reports on the Company’s progress in pursuing its health and safety strategy, along with environmental projects and initiatives.

Environmental matters (primarily the Sulphur Project aiming to cut sulphur dioxide emissions in Polar Division) were at the centre of attention for the Board’s Strategy Committee. The committee was heavily involved in developing recommendations for directors when drafting the Company’s updated strategy (showcased at the Strategy Day in November 2017) and a number of functional strategies (on project management, construction, repairs, long-term production planning, exploration and prospecting, sales, marketing and IT). Another focus area were the matters directly linked to our operations. Those included progress of major investment projects, production reconfiguration, Technology Breakthrough initiative, and programme on efficiency improvement and cost reduction.

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In 2018, the Audit and Sustainable Development Committee will continue its hard work to promote independence and avoid bias in the Company’s internal and external audits while also fostering the reliability and enhancing performance of the corporate risk management universe. The committee will also go on with the programme to instil a culture of occupational safety and prevent irresponsible work practices that can potentially lead to accidents.

In 2017, the Corporate Governance, Nomination and Remuneration Committee prioritised matters related to long-term projects under the programme to enhance corporate governance. The committee reviewed progress of initiatives that are part of the Human Capital Development Programme, along with the Company’s mid-term Charity Policy. On top of that, the Board of Directors approved a number of by-laws covering corporate and social matters, including Human Rights Policy, Freedom of Association Policy, Equal Opportunities Programme, Working Conditions Policy, Local Community Relations Policy, Environmental Policy, Quality Policy, and Renewable Energy Sources Policy. Also, as a way to strengthen corporate efforts aimed at fighting corruption and ensuring compliance with antitrust regulations, in 2017, the Board of Directors approved the Anti-Corruption Policy and Antitrust Compliance Policy.

In its relations with shareholders and investors, we seek to ensure compliance with applicable laws and principles of openness and transparency. With a view to improving its transparency and enhancing information security and confidentiality, the company approved the amended version of the Information Policy Regulations of PJSC MMC Norilsk Nickel. The new Regulations expand the company’s disclosure commitments and provide further guidance on the mandatory disclosure required by regulators.

We will remain committed to continuous improvement of our corporate governance practices in 2018. The Board of Directors and its committees and the management are well aware of the areas where we can excel further, and recognise the importance of these efforts.

The Company’s improvements in environmental protection, social responsibility and governance (ESG) were recognised by independent agencies, with MSCI ESG upgrading Norilsk’s rating from CCC to B and the score by Sustainalytics going up from 49 to 58 (compared to 46 in 2015).

In line with best practices, the Board of Directors of MMC Norilsk Nickel reaffirms the Company’s commitment to the highest corporate governance standards, and confirms its compliance with key material principles of the Corporate Governance Code as recommended by the Bank of Russia.

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 is guided by the applicable laws of the Russian Federation and principles set forth in the Corporate Governance Code that has become a key source of information for the development of the Company’s internal regulations and a guidance to nurture best corporate governance practices.

Nornickel’s corporate governance framework relies on the following principles:
- equitable and fair treatment of every shareholder;
- professionalism and leadership of the Board of Directors;
- accountability of the Board of Directors and executive bodies;
- corporate social responsibility;
- transparent and timely disclosure;
- anti-corruption measures.

These principles are reflected in Nornickel’s official documents available on its website. Those include the Charter, Regulations on the Board of Directors, Information Policy Regulations, and Anti-Corruption Policy.

Andrey Bougrov  
Senior Vice-President,  
Deputy Chairman of the Board of Directors,  
MMC Norilsk Nickel
Corporate governance

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Its authority includes:
- amending and restating the Charter;
- approving the revised Charter;
- restructuring and liquidating the Company;
- increasing and/or decreasing the authorised capital;
- splitting and/or consolidating the Company’s shares;
- electing the Company’s President and members of the Board of Directors and Audit Commission;
- approving the Company’s auditor;
- approving annual reports, accounting/financial statements, and by-laws on the Company’s corporate bodies;
- distributing annual profit;
- paying dividends.

This is the supreme corporate body of the Company.

The General Meeting of Shareholders is convened on an annual basis. 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 Company’s 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.

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.

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 four years, the Board has been chaired by Gareth Peter Penny, an independent director.

For more details on members of the Chairman of the Board of Directors.

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 2017, four of the Company’s Board members (i.e. 30.8%) met the director’s independence criteria as defined by the Moscow Exchange.

For more details on members of the Independent directors.

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 advise the Board on relevant decisions.

The Board of Directors has set up four committees:
- Audit and Sustainable Development Committee;
- Budget Committee;
- Corporate Governance, Nomination and Remuneration Committee.

For more details on members of the Committees.

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 2012–2016).

For more details on members of the President.
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 approved 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 2017, the Management Board consisted of 13 members.

For more details on members of the Management Board

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.

For more details on members of the Corporate Secretary

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 members of the Audit Commission

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 2017, the Annual General Meeting of Shareholders approved JSC KPMG as the Company’s auditor for both IFRS and Russian accounting standards.

For more details on members of the Independent Auditor

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 members of the Internal Control and Risk Management Unit

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 members of the Internal Audit Department

Achieving excellence in corporate governance

Corporate governance assessment

Nomnickel introduced annual performance assessments of the Board of Directors in 2014 in order to improve its corporate governance framework. 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.

Such evaluation of the Board of Directors helps us identify gaps, their root causes and opportunities for improvement.

Corporate governance improvements

Nomnickel continuously improves its corporate governance framework to enhance efficiency and ensure compliance with global best practices. The Company adheres to recommendations set out in the Corporate Governance Code of the Bank of Russia.

Our Corporate Governance Framework Improvement Programme was approved and adopted by the Corporate Governance, Nomination and Remuneration Committee back in December 2013. In 2017, the Programme was enhanced with a set of initiatives aimed at improving performance of the Board and its committees. Some of the key corporate governance improvement initiatives in 2017 included:

- approving the revised Charter;
- approving the revised Regulation on Audit and Sustainable Development Committee of the Board of Directors;
- approving the revised Information Policy Regulations;
- approving the revised Anti-Corruption Policy.

The ESG analysts welcomed our new/updated environmental and social responsibility policies, boosting the Company’s position in the rankings provided by the leading global agencies:

MSCI ESG upgraded our rating from ССС to B, while Sustainalytics raised our score from 49 to 58 (industry average).

In 2018, the Company plans to gradually implement the principles and procedures set out in the approved regulations in order to improve the performance of the Company’s Board of Directors and its committees.

For more details on compliance with the Corporate Governance Code of the Bank of Russia

...
Corporate governance

Board of Directors

Meetings of the Board of Directors (in person or in absentia) are held as and when required, but at least once every six weeks. The procedure for convening and holding meetings of the Board of Directors is specified in the Company’s Regulation on the Board of Directors.

The Board of Directors sets the fundamental principles of business conduct and is responsible for nurturing our business and social culture.

The scope of powers of the Board of Directors includes:
- setting priority goals and defining Company’s development strategy;
- approving the Company’s Dividend Policy and providing recommendations on dividend per share;
- approving the internal control system and procedures, identifying key risks associated with the Company’s operation, and implementing risk management initiatives and procedures;
- 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;

Chairman of the Board of Directors

The Chairman of the Board of Directors is elected among the members of the Board of Directors by themselves by a majority vote from the total number of members of the Company’s Board of Directors. The Board of Directors is entitled to elect a new Chairman of the Board of Directors at any time. When the Chairman of the Board of Directors is unavailable, the respective responsibilities are assumed by a member of the Board of Directors appointed by the Board of Directors.

The key goal of the Chairman of the Board of Directors is to ensure high levels of trust at Board meeting and interaction between the Board of Directors, shareholders and other stakeholders. During the year the Board, under its leadership, approved several crucial resolutions dealing with the Company’s growth 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. Simultaneous participation of the Chairman of the Board of Directors in other companies’ boards of directors did not affect his performance in respect of the Board of Directors of MMC Norilsk Nickel.

Independent directors

In accordance with global corporate governance practices and recommendations of the Bank of Russia’s Corporate Governance Code, no less than one third of the Board of Directors should consist of independent directors. Moreover, the Company believes that independent directors are key to efficient operation of the Board of Directors and thoughtful decision-making.

All independent directors meet the independence criteria recommended by the Corporate Governance Code and requirements established by the current version of the Listing Rules of the Moscow Exchange, which state that an independent director is one who is not related to:
- the Company;
- any of the substantial shareholders of the Company;
- any of the substantial counterparties of the Company;
- any competitor of the Company;
- federal (Russian Federation or its constituent entities) and regional governments or municipal entities.

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.

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 Company sees independent directors as very valuable contributors to the efficiency of the Board, in particular, in terms of ensuring that the matters on the agenda of the Board are treated fairly, and reinforcing shareholders’ and investors’ confidence in actions taken by the Board of Directors.

In the lead-up to the Annual General Meeting of Shareholders in April 2017, the Corporate Governance, Nominations and Remuneration Committee of MMC Norilsk Nickel’s Board of Directors reviewed the compliance of nominees to the Board of Directors with independence criteria. The current directors on the Board were elected in the annual general meeting on 9 June 2017. As at the end of 2017, four (30.8%) out of 13 directors were recognised as independent.

Share of Independent directors in the Board of Directors

30.8%
For MMC Norilsk Nickel, 2017 was the year of sustainable and rapid growth that helped us deliver strong results and reinforce our leadership both domestically and globally. Tight cooperation between the Board of Directors and the Company’s management enabled us 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 2017, we approved the new version of the Company’s Charter while also introducing a number of by-laws (regulations and policies) to make sure we are aligned with global best practices and retain our leadership in the global market to enhance trust with our shareholders and investors.

In the reporting period, the Company also focused on driving innovations and the use of new technology to achieve operating excellence. As part of the dedicated programme, we took steps to improve production efficiency and cut operating costs, and implemented a number of security and health and safety initiatives across our footprint. An effective strategy and an in-depth market analysis helped us achieve an entirely new level of efficiency and confirm our status as a company with one of the most compelling investment cases in Russia.

Over the last three years, the Company has been conducting an internal assessment of the Board of Directors’ performance, with the methodology developed with assistance of an independent consultant and the best global practices. An external assessment is planned to be organised following 2018.

In 2017, the Board of Directors held 42 meetings, including 7 in person, and considered a total of 199 matters.

A reduction in the number of matters considered by the Board of Directors is due to the amendments to the Federal Law On Joint-Stock Companies effective from 1 January 2017 and pertaining to the regulation of major and related-party transactions.

Directors’ participation in meetings of the Board of Directors and its committees

<table>
<thead>
<tr>
<th>Full name</th>
<th>Title</th>
<th>Meetings of the Board of Directors</th>
<th>Strategy Committee</th>
<th>Budget Committee</th>
<th>Audit and Sustainable Development Committee</th>
<th>Corporate Governance, Nomination and Remuneration Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gareth Peter Penny</td>
<td>Independent director / Chairman</td>
<td>42/42</td>
<td>8/10</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Gerhardus Prinsloo</td>
<td>Independent director / Chairman of the Audit and Sustainable Development Committee</td>
<td>42/42</td>
<td>10/10</td>
<td>5/5</td>
<td>10/10</td>
<td>15/15</td>
</tr>
<tr>
<td>Robert Edwards</td>
<td>Independent director</td>
<td>42/42</td>
<td>–</td>
<td>–</td>
<td>10/10</td>
<td>15/15</td>
</tr>
<tr>
<td>Sergey Bratukhin</td>
<td>Independent director / Chairman of the Corporate Governance, Nomination and Remuneration Committee</td>
<td>42/42</td>
<td>10/10</td>
<td>5/5</td>
<td>10/10</td>
<td>15/15</td>
</tr>
<tr>
<td>Sergey Skvortsov</td>
<td>Non-executive director</td>
<td>24/42</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Andrey Brosglov</td>
<td>Executive director</td>
<td>42/42</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Marianna Zakharova</td>
<td>Executive director</td>
<td>42/42</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sergey Barbashov</td>
<td>Non-executive director</td>
<td>42/42</td>
<td>–</td>
<td>5/5</td>
<td>–</td>
<td>15/15</td>
</tr>
<tr>
<td>Alexey Bashkirov</td>
<td>Non-executive director / Chairman of the Budget Committee</td>
<td>42/42</td>
<td>9/10</td>
<td>5/5</td>
<td>10/10</td>
<td>–</td>
</tr>
<tr>
<td>Maxim Sokolov</td>
<td>Non-executive director / Chairman of the Strategy Committee</td>
<td>42/42</td>
<td>10/10</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Vladislav Soloviev</td>
<td>Non-executive director</td>
<td>42/42</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Slabekh Mishkev</td>
<td>Non-executive director</td>
<td>42/42</td>
<td>–</td>
<td>5/5</td>
<td>–</td>
<td>15/15</td>
</tr>
<tr>
<td>Rushan Bagasheev</td>
<td>Non-executive director</td>
<td>42/42</td>
<td>–</td>
<td>–</td>
<td>10/10</td>
<td>–</td>
</tr>
</tbody>
</table>

Number of Board of Directors meetings

<table>
<thead>
<tr>
<th>In absentia</th>
<th>In person</th>
<th>In total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>39</td>
<td>1,024</td>
</tr>
<tr>
<td>2016</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>2015</td>
<td>79</td>
<td>104</td>
</tr>
<tr>
<td>2014</td>
<td>82</td>
<td>74</td>
</tr>
<tr>
<td>2013</td>
<td>92</td>
<td>104</td>
</tr>
</tbody>
</table>

Number of matters considered

| 2017 | 39 |
| 2016 | 60 |
| 2015 | 79 |
| 2014 | 82 |
| 2013 | 92 |
Composition of the Board of Directors

As at 31 December 2017 the Board of Directors was made up of 13 members, including four independent, seven non-executive and two executive directors. Following the Annual General Meeting of Shareholders held on 9 June 2017, Sergey Skvortsov was elected to the Board of Directors, replacing Andrey Korobov.

Key competencies of the Board of Directors

<table>
<thead>
<tr>
<th>Name</th>
<th>Years on the Board of Directors</th>
<th>Years track record as a member of the Board of Directors</th>
<th>Strategy</th>
<th>Law and corporate governance</th>
<th>Finance and audit</th>
<th>Engineering and technology</th>
<th>International economic relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penny Gareth Peter</td>
<td>4 years</td>
<td>Since 2013</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Gerhardus Prinsloo</td>
<td>5 years</td>
<td>Since 2012</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Robert Edwards</td>
<td>4 years</td>
<td>Since 2013</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sergey Bratklin</td>
<td>4 years</td>
<td>Since 2013</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sergey Skvortsov</td>
<td>2 years</td>
<td>2014–2015, Since 2017</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Andrey Bogrov</td>
<td>6 years</td>
<td>Since 2012</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Marianna Zakharova</td>
<td>7 years</td>
<td>Since 2010</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sergey Babashov</td>
<td>6 years</td>
<td>Since 2011</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Alexey Bashchirov</td>
<td>4 years</td>
<td>Since 2013</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Maxim Sikov</td>
<td>5 years</td>
<td>Since 2008</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Vladimir Soloviev</td>
<td>7 years</td>
<td>2008–2011, Since 2013</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Slavik Mednikov</td>
<td>5 years</td>
<td>Since 2012</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ruslan Bogdanov</td>
<td>4 years</td>
<td>Since 2013</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Biographies of members of the Board of Directors

PENNY

Gareth Peter
Born in: 1962
Nationality: UK
Chairman of the Board of Directors since 2013
Independent director
Member of the Strategy Committee
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Bishops Diocesan College, Cape Town
Oxford, Rhodes Scholar, UK
Master of Arts in Philosophy, Politics and Economics

Track record:
2007–present: Non-Executive Director at Julius Baring 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–present: 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 Ltd
2017–present: Director at Amulet Diamond Corporation

BOUGROV

Andrey
Born in: 1952
Nationality: Russia
Deputy Chairman of the Board of Directors since 2013
Executive director (2002–2013 member of the Board of Directors)
Member of the Management Board since 2002
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Moscow State Institute of International Relations (MGIMO), 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
2010–2013: member of the Management Board and Deputy CEO at Internos Holding Company
2011–2013: Chairman of the Board of Directors at MMC Norilsk Nickel
2015–2016: member of the Investment Committee at the Federal Hydro-Generating Company RusHydro
2015–2016: member of the Management Board, Deputy Chairman of the Board of Directors at MMC Norilsk Nickel
2015–present: Vice President of the Russian Union of Industrialists and Entrepreneurs
2014–present: member of the Board of Directors at Inter RAO UES PJSC (Inter RAO UES OJSC until 2016)
2014–present: member of the Expert Committee of the Russian President’s Anticorruption Office
2013–present: member of the Board of Directors at MMC Norilsk Nickel
2016–2017: 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)
2016–present: member of the Expert Council on Corporate Governance at the Bank of Russia
2017–present: Chairman of the Issuer Committee at the Moscow Exchange
2018 – present: Chairman of the Board of non-financial reporting at RUE, vice-president and member of the Management Board at RUE
BARBASHEV
Sergey
Born in: 1962
Nationality: Russia
Member of the Board of Directors since 2011
Non-executive director
Member of the Corporate Governance, Nomination and Remuneration Committee
Share in the Company’s authorised capital: 0.0%
Share in the common stock: 0.0%

Education:
Moscow Higher School of Militia of the Ministry of Internal Affairs of the USSR, degree in Law

Track record:
2008–present: Chair of the Board at the Vladimir Potanin Charitable Foundation
2011–present: Chairman of the Board of Directors of Rosa Khutor Ski Resort Development Company
2015–present: Branch Director at Olderfrey Holdings Ltd.
2016–present: Director at Olderfrey Holdings Ltd.

BASHKIROV
Alexey
Born in: 1977
Nationality: Russia
Member of the Board of Directors since 2013
Non-executive director
Chairman of the Budget Committee, member of the Audit and Sustainable Development Committee and the Strategy Committee
Share in the Company’s authorised capital: 0% Share in the common stock: 0%

Education:
Moscow State Institute of International Relations (MGIMO), degree in International Economics 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

BRATUKHIN
Sergey
Born in: 1971
Nationality: Russia
Member of the Board of Directors since 2013
Independent director
Chairman of the Corporate Governance, Nomination and Remuneration Committee, member of the Strategy Committee, the Budget Committee and the Audit and Sustainable Development Committee
Share in the Company’s authorised capital: 0% Share in the common stock: 0%

Education:
Moscow State Technological University “Stankin”, degree in Engineering
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
2007–2004: member of the Board of Directors at Amur Shipping Company
2016–2016: member of the Board of Directors at AWB International Financial Club

On 10 April 2017, Mr Sokov’s share in the Company’s authorised capital changed from 0.000088% to 0% following the gift of his stake.

BOGAUDINOV
Ruslan
Born in: 1977
Nationality: Russia
Member of the Board of Directors since 2015
Non-executive director
Member of the Audit and Sustainable Development Committee
Share in the Company’s authorised capital: 0% Share in the common stock: 0%

Education:
Moscow State Technological University "Stankin", degree in Engineering

Track record:
2010–present: member of the Institute of Internal Auditors (IIA)
2012–2015: Head of the Control and Audit Department at RUSAL Global Management B. V.
2012–2016: member of the Board of Directors at Aughinish Alumina Ltd
2012–2016: member of the Board of Directors at Limerick Aluminium Refining Ltd
2015–present: Function Head at RUSAL Global Management B. V.
ZAKHAROVA
Marianna
Born in: 1976
Nationality: Russia
Member of the Board of Directors since 2010
Executive director
Member of the Management Board since 2016
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

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 Interros Holding Company (Interros Holding Company CJSC until 2015)
2010–2015: first Vice President for Corporate Governance, Asset Management and Legal Affairs at MMC Norilsk Nickel

MISHAKOV
Stalbek
Born in: 1970
Nationality: Russia
Member of the Board of Directors since 2012
Non-executive director
Member of the Corporate Governance, Nomination and Remuneration Committee and the Budget Committee
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Moscow State Institute of International Relations (MGIMO), degree in International Law; University of Notre Dame (USA), Master’s degree; Diplomatic Academy of the Russian Foreign Ministry, PhD in Economics

Track record:
2012–present: advisor to the CEO at RUSAL Global Management B. V.
2013–2018: member of the Board of Directors at United Company RUSAL Plc.
2013–present: deputy CEO at EN+ Management

SOKOV
Maxim
Born in: 1979
Nationality: Russia
Member of the Board of Directors since 2008
Non-executive director
Chairman of the Strategy Committee
Share in the Company’s authorised capital: 0.0011%
Share in the common stock: 0.0011%

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:
2012–2013: member of the Board of Directors of United Company RUSAL Plc.
2012–2013: Director of Strategic Investment Management at RUSAL Global Management B. V.

PRINSLOO
Gerhardus
Born in: 1965
Nationality: Germany
Member of the Board of Directors since 2012
Independent director
Chairman of the Audit and Sustainable Development Committee, member of the Strategy Committee, Budget Committee, and the Corporate Governance, Nomination and Remuneration Committee
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
University of Pretoria (South Africa), Bachelor of Commerce

Track record:
2012–present: CEO of Natural Resource Partnership

SOKOV
Maxim
Born in: 1979
Nationality: Russia
Member of the Board of Directors since 2008
Non-executive director
Chairman of the Strategy Committee
Share in the Company’s authorised capital: 0.0011%
Share in the common stock: 0.0011%

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:
2012–2013: member of the Board of Directors of United Company RUSAL Plc.
2012–2013: Director of Strategic Investment Management at RUSAL Global Management B. V.

PRINSLOO
Gerhardus
Born in: 1965
Nationality: Germany
Member of the Board of Directors since 2012
Independent director
Chairman of the Audit and Sustainable Development Committee, member of the Strategy Committee, Budget Committee, and the Corporate Governance, Nomination and Remuneration Committee
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
University of Pretoria (South Africa), Bachelor of Commerce

Track record:
2012–present: CEO of Natural Resource Partnership
Corporate governance •  Board of Directors

SKVORTSOV
Sergey

Born in: 1964
Nationality: Russia
Member of the Board of Directors in 2014–2015 and since 2017
Non-Executive director
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Moscow State Institute of International Relations (MGIMO), degree in International Economic Relations; PhD in Economics

Track record:
2006–present: member of the Board of Directors at KAMAZ
2008–2016: member of the Board of Directors at AVTOVAZ
2009–2013: Managing Director at CJSC CIB Financial Broker
2013–2014: Managing Director for Investments at Rostec State Corporation
2014–2016: Deputy CEO at Rostec State Corporation
2014–2017: member of the Board of Directors at OPK Oboronprom
2014–present: member of the Board of Directors at Russian Helicopters

SOLOVIEV
Vladislav

Born in: 1973
Nationality: Russia
Member of the Board of Directors in 2008–2011 and since 2013
Non-executive director
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Graduate School of Management of the State Academy of Management; Moscow State Technological University “Stankin”; University МВА

Track record:
2007–present: 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 CJSC RUSAL Global Management B. V.
2018–present: member of the Board of Directors and CEO at En+ Group
2018–present: president at United Company RUSAL Plc and CJSC RUSAL Global Management B. V.

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 fulfillment 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

As per the resolution of the Board of Directors dated 16 October 2017 (Minutes No. GMK/34-pr-sd), the Board of Directors’ Audit Committee is renamed as the Audit and Sustainable Development Committee. The Board of Directors also approved the new version of the Regulation on Audit and Sustainable Development Committee of the Board of Directors.

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 ten meetings, including eight in person and two joint meetings (joint meetings of the Audit and Sustainable Development Committee and the Budget Committee on 14 March 2017 and 14 August 2017).
The committee is made up of five directors, three of which are independent, including its Chairman. No executive directors are members of the Audit and Sustainable Development Committee. 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.

Members of the Audit and Sustainable Development Committee in 2017

- Gerhardus Prinsloo (Chairman, independent director)
- Robert Edwards (independent director)
- Alexey Bashkirov
- Ruslan Boguslavsky
- Sergey Bratukhin (independent director)

The committee is made up of five directors, including three independent directors. All directors are recognised as non-executive.

Members of the Strategy Committee in 2017

- Maxim Sivkov (Chairman)
- Gerhardus Prinsloo (independent director)
- Alexey Bashkirov
- Sergey Perety (independent director)
- Sergey Bratukhin (independent director)

The Strategy Committee was established to support the Board of Directors by conducting preliminary reviews of the matters pertaining to sustainable business development, investment planning, business restructurising, and interaction with capital markets and government authorities.

In the reporting year, the committee held ten meetings, including six in person, one in absentia, two joint meetings (one with the Corporate Governance, Nomination and Remuneration Committee on 17 May 2017, and the other with the Budget Committee on 6 December 2017), and one conference call.

The committee is made up of five directors, including three independent directors. All directors are recognised as non-executive.

Members of the Strategy Committee in 2017

- Sergey Barbashev
- Gerhardus Prinsloo (independent director)
- Sergey Bratukhin (independent director)
- Stalbek Mishakov

The Strategy Committee’s focus is on supporting the Board of Directors in developing, implementing and reviewing 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, along with fuel and energy and sales strategies. The committee reviewed the updates on the progress and status of major investment projects, prepared a progress report on production reconfiguration, and noted the relevant management efforts in implementing the Technology-Breakthrough initiative. For strategic planning purposes, the Committee reviewed production reports and results of the programme designed to improve production efficiency and reduce operating costs.

The committee is made up of five directors, including three independent directors, one of whom chairs the committee. All directors are recognised as non-executive.

Members of the Corporate Governance, Nomination and Remuneration Committee in 2017

- Sergey Bubakiev (Chairman, independent director)
- Sergey Barbashev
- Stalbek Mishakov
- Robert Edwards (independent director)
- Gerhardus Prinsloo (independent director)

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 approved the revised Regulation on Audit and Sustainable Development Committee of the Board of Directors and advised the Board of Directors on approval of the Company’s policies and regulations, and evaluation of directors’ performance in 2017. The committee reviewed management updates on implementation of the Our Home and My Home programmes, corporate social subsidised loan programme, and the charitable policy of the Company, and noted the management’s achievements in implementing the Human Capital Development Programme.

Corporate Secretary

In the reporting year, the Company Secretary was renamed Corporate Secretary as per the new version of the Charter approved by the Annual General Meeting of Shareholders (Minutes No. 1 of 9 June 2017) and the resolution of the Board of Directors (Minutes No. GMK/24-pr-sd of 14 July 2017).

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.

The Corporate Secretary is responsible for:

- preparation and running of the General Meeting of Shareholders as provided for by the applicable Russian laws, the Company’s Charter and by-laws,
- making arrangements for and running meetings of the Board of Directors and its committees as provided for by the applicable Russian laws, Company’s Charter and by-laws,
- providing ongoing support and assistance to the Board of Directors, its committees and members,
- 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.

In accordance with the Regulation on the Corporate Secretary of MMC Norilsk Nickel approved by the Board of Directors on 20 April 2015 (Minutes No. GMK/14-pr-sd), 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.

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 Norilnickel’s core corporate plans and programmes, and maintaining the efficiency of risk management and internal control functions.

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.

Responsibilities of the Management Board:

- conducting a preliminary review of materials prepared for the meetings of the Board of Directors focusing on definition of the Company’s business priorities, determination of its development concept and strategy, and approval of plans and budgets;
- drafting proposals on amendments to the Company’s Charter;
- drafting proposals on transactions that require approval by the General Meeting of Shareholders or the Board of Directors;
- analysing and assessing the Company’s financial and business performance;
- drafting proposals on the Company’s reserve fund;
- resolving on other matters as stipulated by the Company’s Charter.

Management Board in 2017

In 2017, the Management Board held 35 meetings in absentia and one joint meeting.

Participation in Management Board meetings in 2017

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vladimir Potanin</td>
<td>36</td>
</tr>
<tr>
<td>Elena Bouznetzhylo</td>
<td>34</td>
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<tr>
<td>Sergey Balandin</td>
<td>36</td>
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<tr>
<td>Larisa Zelkova</td>
<td>36</td>
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<tr>
<td>Nina Vasilcheva</td>
<td>36</td>
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<tr>
<td>Alexey Ryumin</td>
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<tr>
<td>Andrey Bozhenkov</td>
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</tr>
<tr>
<td>Sergey Dypychkov</td>
<td>36</td>
</tr>
<tr>
<td>Vladimir Gutsyryan</td>
<td>36</td>
</tr>
<tr>
<td>Elena Kondratova</td>
<td>36</td>
</tr>
<tr>
<td>Marianna Zakharova</td>
<td>36</td>
</tr>
</tbody>
</table>
Composition of the Management Board

In 2017, 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.

On 12 February 2018, the Board of Directors resolved (Minutes No. GMK/5-pr-sd) to dismiss Alexander Ryumin, member of the Management Board, and terminate his employment contract, while also approving the new Management Board made up of 12 members starting from 13 February 2018.

Biographies of the Management Board members

POTANIN Vladimir
Born in: 1961
Nationality: Russia
The Company’s President since 2015 (the Company’s CEO in 2012–2015)
Chairman of the Management Board since 2012
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Moscow State Institute of International Relations (MGIMO), degree in International Economics

Track record
1985–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), member of the Board of Trustees of the Graduate School of Management (St Petersburg University), and member of the Bureau of the All-Russian Association of Employers (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 Société 2014 Steering Committee
2008–present: member of the Board of Vladimir Potanin Charitable Foundation
2009–2018: 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 OJSC MMC Norilsk Nickel
2013–2014: Deputy CEO and Head of Operations at OJSC MMC Norilsk Nickel
2013–2014: member of the Board of Directors of OJSC Inter RAO UES
2015–2015: President of OJSC Interaeroholding Company
2014–present: Chairman of the Board of Trustees of the RIQA 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

Track record
2010–2013: COO at Kazakhmys Group
2010–2014: Deputy CEO and Head of Operations at OJSC MMC Norilsk Nickel
2014–2015: First Deputy CEO and COO at OJSC MMC Norilsk Nickel

DYACHENKO Sergey
Born in: 1962
Nationality: Russia
Member of the Management Board since 2016
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

2015–present: First Vice President and COO at PJSC MMC Norilsk Nickel
2016–present: member of the Board of the Non-Profit Russian Mining Council Partnership
2017–present: member of the Board of Directors at MPI Nickel Pty Ltd, Norilsk Nickel Cawse Pty Ltd, Norilsk Nickel Auskin Pty Ltd, Norilsk Nickel Woldara Pty Ltd, Norilsk Nickel Heravatly Oy, Norilsk Nickel Africa (Pty) Ltd, Norilsk Nickel Mauritius, and also member of the Executive Committee at Norilsk Nickel

ZAKHAROVA Marianna
Born in: 1976
Nationality: Russia
Member of the Management Board since 2016
Member of the Board of Directors since 2016
Executive Director
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

2005–2006: member of the Board of Directors of OJSC MMC Norilsk Nickel
2006–2010: First Deputy CEO at PJSC MMC Norilsk Nickel
2010–2015: member of the Board of Directors at ProfEstate Company until 2015
2010–2015: member of the Management Board and Deputy CEO for Shareholdings and Legal Affairs at PJSC MMC Norilsk Nickel
2010–2015: member of the Supervisory Board of the Sochi 2014 Steering Committee
2014–2015: President of OJSC Interaeroholding Company
2015–present: First Vice President and COO at PJSC MMC Norilsk Nickel
2016–present: member of the Board of the Non-Profit Russian Mining Council Partnership
2017–present: member of the Board of Directors at MPI Nickel Pty Ltd, Norilsk Nickel Cawse Pty Ltd, Norilsk Nickel Auskin Pty Ltd, Norilsk Nickel Woldara Pty Ltd, Norilsk Nickel Heravatly Oy, Norilsk Nickel Africa (Pty) Ltd, Norilsk Nickel Mauritius, and also member of the Executive Committee at Norilsk Nickel

Education:
Peoples’ Friendship University of Russia (RUDN), master’s degree in Law

Track record
2010–2015: member of the Management Board and Deputy CEO for Legal Affairs at LLC Interros Holding Company (OJSC Interaeroholding Company until 2015)
2016–2017: member of the Board of Directors at ProfEstate
2016–present: First Vice President for Corporate Governance, Shareholdings and Legal Affairs at PJSC MMC Norilsk Nickel

2017–present: First Vice President and COO at PJSC MMC Norilsk Nickel
2016–present: member of the Board of the Non-Profit Russian Mining Council Partnership
2017–present: member of the Board of Directors at MPI Nickel Pty Ltd, Norilsk Nickel Cawse Pty Ltd, Norilsk Nickel Auskin Pty Ltd, Norilsk Nickel Woldara Pty Ltd, Norilsk Nickel Heravatly Oy, Norilsk Nickel Africa (Pty) Ltd, Norilsk Nickel Mauritius, and also member of the Executive Committee at Norilsk Nickel

Education:
Plekhanov Leningrad Institute, degree in Mining Engineering (University of Pretoria (South Africa), master’s degree in International Economics

Track record
2013–2014: Deputy CEO and Head of Operations at OJSC MMC Norilsk Nickel
2013–2014: member of the Board of Directors of OJSC Inter RAO UES
2010–2015: member of the Management Board and Deputy CEO for Shareholdings and Legal Affairs at PJSC MMC Norilsk Nickel
2010–2015: member of the Board of Directors at ProfEstate
2016–present: First Vice President for Corporate Governance, Shareholdings and Legal Affairs at PJSC MMC Norilsk Nickel
2017–present: First Vice President and COO at PJSC MMC Norilsk Nickel
2016–present: member of the Board of the Non-Profit Russian Mining Council Partnership
2017–present: member of the Board of Directors at MPI Nickel Pty Ltd, Norilsk Nickel Cawse Pty Ltd, Norilsk Nickel Auskin Pty Ltd, Norilsk Nickel Woldara Pty Ltd, Norilsk Nickel Heravatly Oy, Norilsk Nickel Africa (Pty) Ltd, Norilsk Nickel Mauritius, and also member of the Executive Committee at Norilsk Nickel
AZNAURYAN
Onik
Born in: 1970
Nationality: Russia
Member of the Management Board since 2013
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Yerevan State Polytechnic University, University of Pittsburgh (USA), Master of Business Administration

Track record
2013–2015: member of the Board of Directors at OJSC Norilskgazprom
2013–2016: Chairman of the Board of Directors at OJSC Norilskgazprom
2011–2013: Chairman of the Board of Directors of OJSC MMC Norilsk Nickel
2010–2013: member of the Management Board and Deputy CEO of CJSC Interns Holding Company
2007–2010: member of the Board of Directors of RJUE, Vice Chairman of the Board of Directors, and Deputy CEO of CJSC MMC Norilsk Nickel
2008–2012: Director of Production Management Department at MMC Norilsk Nickel
2006–2008: Chairman of the Board of Directors at Yenisey River Shipping Company and member of the Board of Directors at Metal Trade Overseas Sa and Norilsk Nickel (Vice President until 2016), and Head (on a part-time basis) of Norilskenergo, branch of PJSC MMC Norilsk Nickel
2005–present: Senior Vice President, Head of Non-Industrial Assets and Energy at PJSC MMC Norilsk Nickel (Vice President until 2016), and Head (on a part-time basis) of Norilskenergo, branch of PJSC MMC Norilsk Nickel
2004–2005: Head of Non-Industrial Assets and Energy at PJSC MMC Norilsk Nickel (Vice President until 2016), and Head (on a part-time basis) of Norilskenergo, branch of PJSC MMC Norilsk Nickel
2001–2004: Chief Marketing (Shanghai) Co., Ltd
2000–2001: Vice President of the Russian Union of Industrialists and Entrepreneurs
1999–2000: member of the Board of Directors, and Deputy CEO at OJSC MMC Norilsk Nickel
1998–1999: President and Management Board

Share in the common stock:
0%
Share in the Company’s authorised capital:
0%

BOUGROV
Andrey
Born in: 1952
Nationality: Russia
Member of the Management Board since 2002
Deputy Chairman of the Board of Directors since 2013
Executive Director
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Moscow State Institute of International Relations (MGIMO), PhD in Economics

Track record
2002–present: member of the Public Council on Foreign and Defence Policy
2006–present: member of the Management Board of the Russian Union of Industrialists and Entrepreneurs
2010–2013: member of the Management Board and Deputy CEO of CJSC Interns Holding Company
2011–2013: Chairman of the Board of Directors of CJSC MMC Norilsk Nickel
2013–2014: member of the Board of Directors of RusHydro Federal Hydroelectric Generating Company
2015–present: Vice President at LLC Interns Holding Company (CJSC Interns Holding Company until 2015)
2013–2015: member of the Management Board, Deputy Chairman of the Board of Directors, and Deputy CEO at OJSC MMC Norilsk Nickel
2012–2015: CEO of Polar Division at MMC Norilsk Nickel
2008–2012: Director of Production Management Department at MMC Norilsk Nickel
2006–2008: Chairman of the Board of Directors at RUIE, vice-present and member of the Management Board at RUIE

Share in the common stock:
0.003%
Share in the Company’s authorised capital:
0.003%

RYUMIN
Alexander1
Born in: 1956
Nationality: Russia
Member of the Management Board from 2013 to February 2018
Share in the Company’s authorised capital: 0.003%
Share in the common stock: 0.003%

Education:
Kiev Polytechnic Institute, degree in Metallurgical Engineering

Track record
2008–2012: Director of Production Management Department at MMC Norilsk Nickel
2012–2015: CEO of Polar Division at MMC Norilsk Nickel
2015–2018: Vice President, CEO of Polar Division at MMC Norilsk Nickel
2015–present: member of the Supervisory Board of the Norilsk Development Agency

Share in the common stock:
0%
Share in the Company’s authorised capital:
0%

1 On 12 February 2018, the Board of Directors resolved to terminate his employment contract

BATEKHIN
Sergey
Born in: 1965
Nationality: Russia
Member of the Management Board since 2013
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Krasnoznamenny Military Institute of the USSR Ministry of Defence, degree in Foreign Languages, Paikhamov Russian Academy of Economics, degree in Finance and Credit, Moscow International Higher Business School (WBBIS), Master of Business Administration

Track record
2009–2015: 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 (Asiat Ltd
2015–present: Senior Vice President, Head of Sales, Commerce and Logistics at MMC Norilsk Nickel (Vice President until 2016)
2010–2011: member of the Board of Directors, of Non-Industrial Assets and Energy at PJSC MMC Norilsk Nickel (Vice President until 2016), and Head (on a part-time basis) of Norilskenergo, branch of PJSC MMC Norilsk Nickel
2006–2010: Vice President at PJSC MMC Norilsk Nickel (Vice President until 2016)
2002–2006: member of the Management Board of the Russian Union of Industrialists and Entrepreneurs
2001–2002: member of the Board of Directors at Metal Trade Overseas Sa and Norilsk Nickel Marketing (Shanghai) Co., Ltd
2000–2001: Vice President at CJSC Interns Holding Company (Vice President until 2016)
1999–2000: member of the Board of Directors, of Non-Industrial Assets and Energy at PJSC MMC Norilsk Nickel (Vice President until 2016), and Head (on a part-time basis) of Norilskenergo, branch of PJSC MMC Norilsk Nickel
1998–1999: President and Management Board

Share in the common stock:
0%
Share in the Company’s authorised capital:
0%
Education:
Moscow State University, degree in Journalism

Track record
1988–2013: Deputy CEO and PR Director at CJSC Interros Holding Company
1999–2004: CEO of Vladimir Potanin Charitable Foundation
2007–present: member of the Presidium of the MGIMO Endowment Fund
2000–present: member of the Board of Trustees at Pavlovsk Gymnasium Private Non-Profit School
2010–2013: member of the Management Board at CJSC Interros Holding Company
2011–2013: Chair of the Board of Directors at CJSC Interros Management LLC
2015–2016: member of the Board of Directors at CJSC Interros Management LLC
2015–2016: Senior Vice President for HR, Social Policy and Public Relations at PJSC MMC Norilsk Nickel (Vice President until 2016)
2016–present: member of the Board of Trustees at the Hermitage Foundation UK
2016–present: member of the Board of Trustees at the National Academy of Arts of the Russian Federation
2016–present: Senior Vice President for HR, Social Policy and Public Relations at PJSC MMC Norilsk Nickel
2017–present: member of the Supervisory and Management Boards of the Norilsk Development Agency

ZELKOVA
Larissa
Born in: 1969
Nationality: Russia
Member of the Management Board since 2013
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Krasnoyarsk State University, degree in Law

Track record
2007–2013: Director of Corporate Security and Head of Security at PJSC MMC Norilsk Nickel
2013–2015: Deputy CEO, Head of Economics and Finance at OJSC MMC Norilsk Nickel
2015–2016: Senior Vice President, Head of Economics and Finance at PJSC MMC Norilsk Nickel (Vice President until 2016)
2016–present: Senior Vice President and CFO at PJSC MMC Norilsk Nickel

MALYSHEV
Sergey
Born in: 1969
Nationality: Russia
Member of the Management Board since 2013
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

Education:
Finance Academy under the Government of the Russian Federation, degree in Finance and Credit. 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
2009–2015: Deputy CEO for Economics and Finance, First Deputy CEO at OJSC Energobytnoyinvest-Holding
2015–2015: Deputy CEO, Head of Economics and Finance at OJSC MMC Norilsk Nickel
2016–2018: Senior Vice President, Head of Economics and Finance at PJSC MMC Norilsk Nickel
2018–present: Senior Vice President and CFO at PJSC MMC Norilsk Nickel

BEZDENEZHNYKH
Elena
Born in: 1973
Nationality: Russia
Member of the Management Board since 2012
Share in the Company’s authorised capital: 0.0011%
Share in the common stock: 0.0011%

Education:
Krasnoyarsk State University, degree in Law

Track record
2011–2013: Chair of the Board of Directors at the Sport Projects Management Company, LLC
2013–2015: Chair of the Board at Norilsk Nickel Non-State Pension Fund and Chair of the Board of Directors of OJSC MAO Norilsk Nickel
2015–2016: Deputy CEO and Head of Corporate Governance, Asset Management and Legal Affairs at OJSC MMC Norilsk Nickel
2017–present: member of the Board of Trustees of the Charitable Foundation for Support of Indigenous Peoples of the North, Siberia and Far East

GASUMYANOV
Vladislav
Born in: 1959
Nationality: Russia
Member of the Management Board since 2014
Share in the Company’s authorised capital: 0%
Share in the common stock: 0%

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 OJSC MMC Norilsk Nickel
2014–2015: member of the Management Board at OJSC MMC Norilsk Nickel
2014–2016: member of the Board of Directors at OJSC Yenisey River Shipping Company
2015–2016: Vice President, Director of Corporate Security and Head of Security at PJSC MMC Norilsk Nickel
2017–2018: Director of Security and Head of Security at OJSC MMC Norilsk Nickel
2018–present: Vice President, Head of Corporate Security at PJSC MMC Norilsk Nickel
2015–2017: Vice President / State Secretary, Head of Government Relations at PJSC MMC Norilsk Nickel
2017–present: member of the Supervisory Board at the Siberian Federal University (independent public college)
2017–present: member of the Board of Trustees of the Charitable Foundation for Support of Indigenous Peoples of the North, Siberia and Far East

On 4 December 2017, Ms Bezdenezhnykh increased her share in MMC Norilsk Nickel’s authorised capital from 0.0010% to 0.0011% after coming into possession of an inheritance
Remuneration

Key performance indicators

The key performance indicators adopted by Nornickel serve to build a transparent incentive and performance assessment system. The Company believes that the remuneration framework put in place has proved its efficiency. KPIs are linked to performance metrics approved for different types of jobs, with employees consistently exceeding the targets. The Company’s KPIs embrace achievements in social responsibility, occupational safety, operating efficiency and capital management.

The Company’s President approved an Implementation Plan for the Employee Performance Management System at Nornickel providing for:
• review and approval of documents governing employee performance assessment procedures;
• approval of individual KPIs;
• preparation of individual development plans;
• assessment of performance by team and individual KPIs.

To improve performance at the Head Office, the CEO issued an order approving the Procedure for Assessing Head Office Employee Performance and the Regulation on Annual Performance Bonuses for Head Office Employees.

The Procedure primarily seeks to align the results of performance assessment with remuneration, development, and promotion of employees, whereas the Regulation on Annual Performance Bonuses for Head Office Employees is used to assess employee performance in the reporting period based on team and individual KPIs.

To boost employee performance across its Russian subsidiaries, the Company has developed the Procedure for Assessing Performance of the Group’s Management. The Procedure prescribes that management performance be managed by establishing KPIs and assessing achievement thereof.

Remuneration of governance bodies

Principles and mechanics of remunerations (reimbursements) due to executives are set out in the Charter, Regulations on the Management Board, and other by-laws of the Company. The system of remunerations applicable in the Company is continuously and directly monitored by the Board of Directors. Responsibilities of the Corporate Governance, Nomination and Remuneration Committee include development, supervision over adoption, implementation and regular revision of the Remuneration Policy for the Company’s Board of Directors, Management Board and the Company’s President.

In 2014, the Remuneration Policy for Members of the Board of Directors was approved by the General Meeting of Shareholders and published on the Company’s website.
Corporate governance → Remuneration

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 committee of the Board of Directors;
- additional remuneration of USD 150,000 for chairing a committee of the Board of Directors;
- reimbursement of expenses incurred by directors while discharging their duties.

The base remuneration for the Chairman of the Board of Directors is USD 1 mln. Subject to a special resolution adopted by the General Meeting of Shareholders, the Chairman of the Board of Directors may be entitled to additional remuneration and benefits.

To clearly differentiate the principles and structure of remuneration payable to non-executive and executive directors, the following items are excluded from the remuneration payable to non-executive directors:
- bonuses 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.

As an additional benefit, directors are entitled to certain insurance protections, such as:
- liability insurance;
- reimbursement of losses incurred due to the election to the Board of Directors.

As per the Company’s Charter, decisions on remuneration and reimbursement payable to the Company’s President and members of the Management Board are reserved to the Board of Directors. The total remuneration of the President and members of the Management Board consists of the base salary and bonuses (a variable part of the remuneration). Bonuses are linked to the Company’s performance, including both financial metrics (EBITDA, free cash flow) and non-financial indicators (lower workplace injury rates, stakeholder involvement, etc.).

The variable part of the remuneration payable to the members of the Management Board is based on key performance indicators updated and approved annually by the Corporate Governance, Nomination and Remuneration Committee of the Board of Directors. The dismissal policy for top executives does not differ from that for other employees.

The remuneration paid to the members of governance bodies in 2017 including salaries, bonuses, commissions, benefits and reimbursement of expenses totalled USD 90.1 mln (RUB 5.3 bn).1

Risk management and internal controls

Risk management framework

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).

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 Risk Management Policy sets out the factors and 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: intervention 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 2018, key initiatives aimed at improving the CRMF will include:
- continued integration of risk management practices into strategic, budget and investment planning, setting KPIs for the management and assessing their achievement;
- deployment of risk management automation tools;
- improvement of technical and production risk management, broadening of the analysis perimeter, evaluation of technical and production risk impact on human health and safety, and environment;
- introduction of quantitative assessment methods and modelling to analyse technical and production risks and risks associated with investment projects.

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.

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1 The amount of remuneration is different from that specified in the 2017 consolidated IFRS financial statements as it excludes non-cash remuneration (insurance and VHI payments, and annual remuneration liabilities as at 31 December 2017). The remuneration accrued to the members of governance bodies in 2017 under IFRS totalled USD 103 mln (RUB 6.039 bn).
As part of our risk mitigation initiatives, 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 reinsurers.

**Key risks, risk factors and mitigants**

<table>
<thead>
<tr>
<th>Risk type</th>
<th>Mitigants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WORKPLACE INJURY RISK</strong></td>
<td></td>
</tr>
<tr>
<td>Failure to comply with the Group’s health and safety rules may result in threats to the employee’s health and life, temporary suspension of operations, and property damage.</td>
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<tr>
<td><strong>Key risk factors</strong></td>
<td></td>
</tr>
<tr>
<td>- Unstaffed organisation and control of work safety</td>
<td></td>
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<tr>
<td><strong>INFORMATION SECURITY RISKS</strong></td>
<td></td>
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<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td><strong>Key risk factors</strong></td>
<td></td>
</tr>
<tr>
<td>- Growth in external threats; - unfair competition; - rapid development and automation of IT infrastructure, business and technological processes; - employee and third-party wrongdoing.</td>
<td></td>
</tr>
<tr>
<td>To manage this risk, the Company undertakes to: - develop the Information Security Strategy and Programme, define roles and responsibilities in information security at a corporate level; - draft information security rules and regulations; - comply with Russian laws and regulations with respect to personnel and trade secret protection, insider information, and information protection infrastructure; - categorise information assets and assess security risks; - raise awareness in information security; - ensure access to information assets and information security incidents; - ensure information security of the process control system; - mentor 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 leakage, mobile device management; - set up and certify the Information Security Management System.</td>
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<tr>
<td><strong>TECHNICAL AND PRODUCTION RISK</strong></td>
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<tr>
<td>Technical, production, or natural phenomena, which, if not controlled or prevented, may lead to equipment destruction, material losses, environmental contamination, data loss, business interruption, property damage or human casualties.</td>
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<tr>
<td><strong>Key risk factors</strong></td>
<td></td>
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<tr>
<td>- Harsh weather and climatic conditions, including low temperatures, storms, flooding; - uncontrolled inventories of raw materials, equipment; - natural hazards and catastrophic failures; - collapse of buildings and structures; - infrastructure breakwaters.</td>
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<tr>
<td>To manage this risk, the Company undertakes to: - provide certified state-of-the-art personal protective equipment; - implement automated systems to control equipment’s processes flows; - implement anti-corruption, anti-money laundering and counter-terrorist financing initiatives; - defend the Company’s interests during surveillance inspections or in administrative offence cases; - make sure that the Company complies with the applicable laws; - ensure timely and reliable information disclosures as required by the applicable Russian and international laws.</td>
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<tr>
<td><strong>COMPLIANCE RISK</strong></td>
<td></td>
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<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td><strong>Key risk factors</strong></td>
<td></td>
</tr>
<tr>
<td>- Changes in legislation and law enforcement practices; - 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 and Russian subsidiaries.</td>
<td></td>
</tr>
<tr>
<td>To manage this risk, the Company undertakes to: - ensure that the Company complies with the applicable laws; - take actions to prevent unauthorized use of insider information and market manipulation; - promptly report any criminal or administrative offences.</td>
<td></td>
</tr>
</tbody>
</table>
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 its 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 in place adopted by resolution of the Board of Directors in 2016. 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.

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.

Internal Control and Risk Management Unit, including the Internal Control Department, Risk Management Service, and Financial Control Service,

- Internal Audit Department,
- Audit and Sustainable Development Committee,
- Audit Commission.

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.

Also, the Company has set up the Financial Control Service that 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.

Corporate Trust Service

In February 2010, the Company launched its Corporate Trust Service, which 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 including dismissal, demotion, deprivation of a bonus against the employee who submitted a report to the Corporate Trust Service.
Internal Audit Department

The Internal Audit Department is responsible for the Company’s internal audit. It 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. It continuously monitors the implementation of activities developed by the management. The Board of Directors’ Audit and Sustainable Development Committee regularly reviews the department’s work plan, audit reports, and monitoring analytics.

In 2017, the Department conducted the following audits:

- planning and control of process equipment repairs;
- operation of motor vehicles;
- IT;
- compliance with health and safety requirements;
- technical and production risk management;
- compliance with corporate standards and policies.

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.

In 2018, the Internal Audit Department plans to conduct a comprehensive assessment of the risk management and internal control system and its performance, and submit the results to the Audit and Sustainable Development Committee for review.

Audit Commission

The Audit Commission is a corporate body which 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 15% 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 2017.

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 5 June 2017.

Remuneration payable to the members of the Audit Commission was approved by the Annual General Meeting of Shareholders on 9 June 2017. Members of the Audit Commission employed by the Company are remunerated throughout the year as per their job description and employment terms.

Corruption control

The Company complies with Russian and international anti-corruption laws. In its interaction with government officials, the Company, as well as its employees and corporate bodies, comply with the applicable laws (including anti-corruption laws), thus boosting the Company’s reputation and building up trust towards the Company from its 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 January 2018, the Company confirmed compliance with the Charter and secured its position on the Charter’s Register.

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.

The Company’s personnel receive ongoing training on anti-corruption matters. In December 2017, all new employees at the Head Office completed online anti-corruption training and testing. An important element of the Company’s undertakings is corruption prevention measures aimed at making employees clearly aware of the possible consequences and the “inevitability of penalty” not only for those who engage in corruption, but also for those who become aware of corruption and do not report it. Starting in 2015, all of the Company’s 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 website containing information on anti-corruption regulations adopted, measures taken, preventive procedures introduced, legal training sessions organised and low-abstinence promotion efforts taken.

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 Regulations 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 filed in by candidates applying for vacant positions or by the Company’s employees whenever required.

On top of that, the Company has undertaken measures aimed at preventing potential conflict of interest involving governance bodies and key employees. From December 2016, members of the Company’s governance bodies are required to annually submit information on relatives and family as part of their description and employment terms.
Alongside with these measures, the Regulation on the Prevention and Management of Conflicts of Interest at MMC Norilsk Nickel extends to all employees of the Company. It sets forth key principles that include obligation of each employee to disclose a conflict of interest, as well as non-+etation for reporting the conflict of interest.

The Company takes measures aimed at identifying related-party transactions. All measures combined, undertaken 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. 234-FZ of 27 July 2009 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 Markt Abuse Regulation of the European Parliament and of the Council No. 596/2014 of 15 April 2014, the Company keeps a list of insiders, reviews 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.

Comprehensive security framework

In 2017, MMC Norilsk Nickel's corporate security operations focused on regular updates and the implementation of a comprehensive security system, which drew heavily on the ongoing analysis of the full range of the Company's modern-day challenges and threats in a rapidly changing operating environment. The ongoing implementation of the MBO (Management by Objectives) principles in the economic, corporate, information and physical security systems has enabled the Company to promptly and accurately respond to key risks, clamp down on embezzlement, implement initiatives to counter illicit trafficking of precious metals and metal bearing materials, and efficiently prevent in-house corruption.

The methodology boasts recognition from the international forensic community and is widely used not only for the Company's purposes, but also in examinations as requested by law enforcement authorities, to combat illicit trafficking of precious and non-ferrous metals.

Office for Chemical Forensic Analysis

A powerful tool to combat embezzlement and illicit trafficking of products containing precious metals is our Office for Chemical Forensic Analysis unprecedented among metals and mining and other industrial companies.

Its experts have developed an innovative comprehensive methodology for products containing precious metals, which can reliably trace their origin to the manufacturer, production shop and even section.

In an effort to take public-private partnership in the field of security to a new level of quality, cooperation was established with government low-enforcement authorities, also in the Company's regions of operations. This approach enables a balanced planning of corporate security measures set to be an integral part of the national economic security system. MMC Norilsk Nickel pays special attention to complying with anti-terrorism requirements and enhancing security of the Company's strategic power and transportation facilities. In 2017, the close cooperation with law enforcement authorities helped the Company protect these facilities from any potential unlawful intrusion.

The Company ensures 100% safety and confidentiality of the employee and counterparty personal data, taking steps to integrate information security processes with other group-wide business processes and novel IT solutions. It is also continuously upgrading its comprehensive security system aimed at preventing external cyber interference with production processes. This made it possible for the Company, among other things, to effectively neutralise WannaCry and Petya virus attacks.


The Company has further fostered its international activity in the field of industry-specific business security. The Security Committee of the International Platinum Group Metals Association is chaired by the Company's representative who works together with the United Nations Interregional Crime and Justice Research Institute (UNICRI) to prepare and implement practical recommendations in order to strengthen public-private partnerships aimed at fighting illicit transnational trafficking of precious metals. These initiatives received the support of world's major metal producers.

The Institute for Modern Security Challenges, the Company's subsidiary, has been developing new corporate methods to protect the Company's legitimate interests focusing on the analysis of best international practices, introduction of acknowledged standards and practices of secure development of mining companies, expert reviews and preparation of analytical materials. Their practical implementation is aimed at optimising the Company's security costs and more efficient process management.

Independent audit

The Company has approved the Procedure to Select an Auditor for MMC Norilsk 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 7.19 of the Company's Charter, the auditor shall be approved by an Annual General Meeting of Shareholders.

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 services engaged. In 2017, the auditor's fee amounted to USD 4.2 mln, including overhead charges and VAT. The share of non-audit services rendered to the Company stood at 24% of the total fee.

### Awards

Authorised capital

As at 31 December 2017, 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 2017, there were registered in the shareholder register:

39,473 persons

- 39,445 individuals
- 38 legal entities
- 3 nominal holders

Holders of MMC Norilsk Nickel’s shares and American depositary receipts (ADRs)

<table>
<thead>
<tr>
<th>Holders</th>
<th>Share in the authorised capital, %</th>
<th>Shares</th>
<th>ADRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olderfery Holdings Ltd</td>
<td>30.4</td>
<td>1</td>
<td>30.4</td>
</tr>
<tr>
<td>UC Rusal Plc</td>
<td>27.8</td>
<td>1</td>
<td>27.8</td>
</tr>
<tr>
<td>Crispian Investments Ltd</td>
<td>4.2</td>
<td>5.5</td>
<td>4.2</td>
</tr>
<tr>
<td>Other</td>
<td>37.6</td>
<td>36.3</td>
<td>37.6</td>
</tr>
</tbody>
</table>

1 Indirect control via controlled entities.

Securities

Stock exchanges trade in MMC Norilsk Nickel’s shares and ADRs.

As at 31 December 2017, the Company’s capitalisation stood at USD 29.7 bn, up 12% y-o-y.

Ordinary 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 liquid instruments in the Russian securities market.

MMC Norilsk Nickel’s registrar is Independent Registrar Company. The registrar provides a full scope of services to the Company’s shareholders. Shareholders (individuals and legal entities) listed in the Company’s shareholder register have access to the Shareholder’s Personal Account, where they can:

- view the number and price of their shares,
- check dividends accrued and paid,
- see the date of the upcoming General Meeting of Shareholders,
- participate in General Meetings of Shareholders through e-voting.

Access to the personal account can be obtained at a branch of Independent Registrar Company.

For more details on the registrar, please see the Contacts section.

Share price and trading volume on the Moscow Exchange

<table>
<thead>
<tr>
<th>Date</th>
<th>Share price, RUB</th>
<th>Volume, shares</th>
<th>Market cap at end of period, RUB bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>4,105</td>
<td>5,399</td>
<td>72,088,571</td>
</tr>
<tr>
<td>2014</td>
<td>5,150</td>
<td>8,080</td>
<td>75,215,906</td>
</tr>
<tr>
<td>2015</td>
<td>8,590</td>
<td>9,150</td>
<td>58,018,280</td>
</tr>
<tr>
<td>2016</td>
<td>8,050</td>
<td>10,122</td>
<td>48,275,360</td>
</tr>
<tr>
<td>2017, incl</td>
<td>7,791</td>
<td>10,850</td>
<td>49,456,624</td>
</tr>
<tr>
<td>Q1</td>
<td>8,807</td>
<td>8,293</td>
<td>11,081,179</td>
</tr>
<tr>
<td>Q2</td>
<td>7,791</td>
<td>10,186</td>
<td>10,419,785</td>
</tr>
<tr>
<td>Q3</td>
<td>8,197</td>
<td>9,920</td>
<td>14,867,898</td>
</tr>
<tr>
<td>Q4</td>
<td>9,276</td>
<td>10,850</td>
<td>13,087,762</td>
</tr>
</tbody>
</table>
In 2001, MMC Norilsk Nickel issued ADRs for its shares. Currently, shares are convertible into ADRs at a ratio of 1:10. Depository services for ADR transactions are provided by the Bank of New York Mellon, and custody services are provided by VTB Bank.

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 many other exchanges.

As of 31 December 2017, the total number of ADRs issued against MMC Norilsk Nickel’s shares was 647,562,500, or 40.9% of the authorized capital. The number of ADRs traded on stock exchanges is not constant, and depositary receipt holders may convert their securities into shares and vice versa.

ADRs Bonds

In 2017, the Company successfully placed two Eurobond issues for a total of USD 1.5 bn against a favorable market backdrop: April saw us close the offering of USD 1.0 bn Eurobonds due in 2023 with a coupon rate of 4.10%, which was inside the Company’s outstanding Eurobond curve, followed by a second USD 500 mln issue due in 2022 with a coupon rate of 3.849% (the lowest among the Company’s outstanding bonds) placed in June.

In 2017, the Company had five Eurobond issues outstanding for a total amount of USD 4.250 mln with maturities in 2018, 2020, 2022 and 2023, and one issue of rouble exchange-traded bonds for RUB 15 bn due in 2026.

For more details on trading in the Company’s shares and ADRs, please see our website.
Annual report • 2017

Information for shareholders

Dividends

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.

Key principles of Nornickel’s dividend policy:

• **Legality:** compliance with the Russian law, the Company’s Charter and by-laws;
• **Transparency:** transparency on how dividends are calculated and paid out;
• **Balance:** dividend payouts to shareholders along with long-term business development and capitalisation growth for the Company;
• **Calculating dividends:** MMC Norilsk Nickel accounts for the cyclical nature of the metals market and for 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.

Under the Company’s dividend policy, in determining the recommended dividend amount, the Board of Directors seeks to make sure that annual dividends, on the Company’s shares make up at least 30% of the Group’s consolidated EBITDA.

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 also takes into account the Board’s recommendations to determine the dividend amount and record date, which 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

Dividends are paid to individuals/entities whose rights to shares are recorded in the shareholder register by Independent Registrar Company, MMC Norilsk Nickel’s registrar.

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 24 May 2018 the Company’s Board of Directors recommended that the General Meeting of Shareholders approve final dividends for FY 2017 in the amount of

**Dividend report**

<table>
<thead>
<tr>
<th>Period</th>
<th>RUB mln</th>
<th>USD mln</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2017</td>
<td>607,983</td>
<td>2,971</td>
</tr>
<tr>
<td>6M 2017</td>
<td>35,479</td>
<td>1,626</td>
</tr>
<tr>
<td>FY2016</td>
<td>36,419</td>
<td>1,239</td>
</tr>
<tr>
<td>9M 2016</td>
<td>70,301</td>
<td>2,780</td>
</tr>
<tr>
<td>FY2015</td>
<td>120,637</td>
<td>5,067</td>
</tr>
<tr>
<td>9M 2015</td>
<td>50,947</td>
<td>2,207</td>
</tr>
</tbody>
</table>

Dividends paid

On 24 May 2018, the Company’s Board of Directors recommended that the General Meeting of Shareholders approve final dividends for FY 2017 in the amount of

**Dividend history**

<table>
<thead>
<tr>
<th>Period</th>
<th>Declared dividends // RUB mln</th>
<th>Dividends paid // RUB mln</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2017</td>
<td>546</td>
<td>580</td>
</tr>
<tr>
<td>9M 2016</td>
<td>50,947</td>
<td>2,207</td>
</tr>
<tr>
<td>FY2015</td>
<td>286,668</td>
<td>1,432</td>
</tr>
<tr>
<td>9M 2015</td>
<td>120,637</td>
<td>5,067</td>
</tr>
</tbody>
</table>

Dividend yield

<table>
<thead>
<tr>
<th>Period</th>
<th>Dividends paid per share // RUB</th>
<th>Dividend yield // %</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2017</td>
<td>607,983</td>
<td>4.7</td>
</tr>
<tr>
<td>9M 2016</td>
<td>36,419</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Dividends paid during the above periods, excluding treasury shares.

For dividend history covering earlier periods, please see our website.

Calculated at the Bank of Russia’s exchange rate as at the date of the Board of Directors’ meeting.

Committed to developing Tier-I assets, Norilnickel has been able to provide a consistently high dividend yield to its shareholders over the last five years. We expect the trend to continue.

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*Based on the total amount of dividends for 2017 recommended by the Board of Directors for approval by the General Meeting of Shareholders. Declared dividends based on the Bank of Russia’s exchange rate as at the date of the Board of Directors’ meeting.

† 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 on Bloomberg.

£ On 24 May 2018, the Company’s Board of Directors recommended that the General Meeting of Shareholders approve final dividends for 2017.
Annual report • 2017
Information for shareholders

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;
• 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.

For more details on the regulator, please see the Contacts section.

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 held 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 newspaper and the Taimyr newspaper 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.

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).

Holders of MMC Norilsk Nickel’s shares who are clients of nominal holders can also participate in the General Meeting of Shareholders by instructing the nominal holders in accordance with the Russian securities law.

Holders of MMC Norilsk Nickel’s shares (individuals and legal entities registered in the shareholder register and clients of nominal holders) can participate in the General Meeting of Shareholders through e-voting using the Shareholder’s Personal Account. 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.

Taxation

Income from securities is taxable pursuant to the applicable tax laws of the Russian Federation. 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 rate of 15%.

Dividend income on securities

| Item | Income from securities transactions | Dividend income on securities
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residents</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Non-residents</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Legal entities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russian companies</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Non-resident companies</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

1 Chapter 23 (Personal Income Tax) and Chapter 25 (Corporate Income Tax) of the Russian Tax Code.
2 The formula is applicable to dividends paid to foreign entities and/or individuals who are not tax residents of Russia.
3 Dividing the dividend amount eligible for a zero tax rate pursuant to Subclause 1, Clause 3, Article 284 of the Russian Tax Code.
4 If shares or other securities are sold, provided that at the date of the sale the shares (interests) have been owned for over five years and subject to all of the conditions stipulated by Clause 2, Article 284 of the Russian Tax Code.
5 Or 0%, if at the date of the dividend payable 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)
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.

Shareholders owning at least 2% of the Company’s voting shares may propose items to be included in the agenda of Annual General Meetings of Shareholders and may put forward candidates for election to the Board of Directors and Audit Commission of the Company as and when prescribed by the Federal Law and the Company’s Charter.

Voting at the General Meeting of Shareholders is conducted 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.

In 2017, the Company held >350 meetings with institutional investors.

In 2017, the Company’s Board of Directors approved the amended version of MMC Norilsk Nickel’s Information Policy Regulation, which primarily seeks 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 provide any information on a regular and timely basis and make it available to stakeholders on the basis of equal rights and opportunities. 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 provides updates in the media and on its corporate website at https://www.nornickel.ru/.

The Company’s disclosure procedures comply with the Russian law, the rules of the Moscow Exchanges and international regulations.

MMC Norilsk Nickel also seeks to improve transparency by releasing additional information in excess of that required by the law. The Company discloses information to stakeholders and investors through the following channels: press releases, presentations, annual reports, CSR reports, statements on material facts, disclosure feeds, and RNS. The Company makes a point of parallel disclosure in domestic and foreign markets.

The Company’s quarterly disclosures include operating indicators, the issuer’s quarterly reports, RAS financial (accounting) statements, and affiliates lists. IFRS statements are disclosed on a semi-annual basis. The IFRS disclosures are followed by conference calls and webcasts of the Company’s senior management with analysts and investors for the purpose of providing the market with the required information and comments. In addition, to enhance transparency, the Company makes 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 September 2017, Nornickel launched a new corporate website, now operating on two domains – www.nornickel.ru and www.nornickel.com for Russian and English speakers, respectively. The new website will help streamline interaction with stakeholders, tackle existing and potential business challenges and provide updates on key developments within the Company. Among other things, the website includes the new ESG Strategy subsection. To create the website, the Company leveraged best-in-class web technologies.
E
glass:inger
control:ty and
corporate
governance

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 2017, 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 agencies engaged in assessing the Company against ESG criteria, Norilnickel set up a dedicated section on its website that features all the required information: https://www.nornickel.com/investor/esg.

Also, it developed an ESG databook providing information on ESG indicators starting from 2010.

Our key ESG achievements:

- In 2017, Norilnickel earned a top position in the World Wildlife Fund’s Environmental Responsibility Rating of Metals and Mining Companies in Russia.
- In 2017, the Company moved up from the last year’s 56th to the 35th position in Sustainalytics’s ESG rating, with a score of 58 against 49 in 2016.
- In January 2018, MSCI ESG Research upgraded Norilnickel’s rating to a B level following a reduction in sulphur dioxide emissions by 6% compared to 2015, and strong anti-corruption commitment.
- In December 2016, Norilnickel was included in the FTSE4Good Emerging Index, a leading CSR index.
- In November 2016, the Company joined the United Nations Global Compact, also becoming member of the Association “National Global Compact Network” in June 2017.

In 2017, the Company’s Board of Directors approved a number of social and environmental policies available on the Company’s website, including:

- Human rights policy
- Freedom of association policy
- Indigenous rights policy
- Local community relations policy
- Equal opportunities programme
- Working conditions policy
- Environmental policy (amended and supplemented)
- Biodiversity policy
- Environmental impact assessment policy
- Renewable energy sources policy
- Anti-corruption policy (amended and supplemented)

In 2017, the Company held around 20 target meetings with ESG investors.

In 2018, Norilnickel’s website won the Moscow Exchange’s award for the best design, navigation and disclosure, and ARFI’s IR-cases contest.

The Company’s 2016 Annual Report won 10 awards and diplomas at prestigious Russian and foreign contests, including those hosted by the Expert RA, Vision Awards LACP, ARC and Moscow Exchange. The report boasts eight LACP awards, including top platinum in the printed version and silver in the online annual reports in the mining category.

The Company’s 2016 Corporate Social Responsibility Report won four awards in the LACP’s Vision Awards competition while also ranking among Top 40 non-financial reports globally and topping among CSR reports of Russian metals and mining companies. CSR report also received a special award at the Moscow Exchange.

The Company’s 2016 Annual Report: 10
corporate social responsibility achievements

Environmental Protection

- In 2017, Norilnickel earned a top position in the World Wildlife Fund’s Environmental Responsibility Rating of Metals and Mining Companies in Russia.
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Social Responsibility

- In 2017, the Company’s Board of Directors approved a number of social and environmental policies available on the Company’s website, including:
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- Local community relations policy
- Equal opportunities programme
- Working conditions policy
- Environmental policy (amended and supplemented)
- Biodiversity policy
- Environmental impact assessment policy
- Renewable energy sources policy
- Anti-corruption policy (amended and supplemented)

Corporate Governance

The Company’s 2016 Corporate Social Responsibility Report: 4 awards
Statement of management’s responsibilities for the preparation and approval of the consolidated financial statements for the year ended 31 December 2017

The following statement, which should be read in conjunction with the auditors’ responsibilities stated in the auditors’ report set out on pages 222–224, 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 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 2017 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 2017 were approved by:
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 2017, 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 2017, 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.

Key Audit Matters

The Key Audit Matter: 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 Africa 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 2017, 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.
- 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.
- Communicate with those charged with governance with a statement that we have complied with relevant ethical requirements regarding 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. We describe these matters in our auditors’ report unless the legal requirements prohibit 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:

Andrey Kim
JSC "KPMG"
Moscow, Russia
6 March, 2018
### Consolidated statement of comprehensive income

**for the year ended 31 December 2017**

**US Dollars million**

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit for the year</td>
<td>2,123</td>
<td>2,531</td>
</tr>
<tr>
<td>Other comprehensive income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items to be reclassified to profit or loss in subsequent periods:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect of translation of foreign operations</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Other comprehensive income to be reclassified to profit or loss in subsequent periods, net</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Items not to be reclassified to profit or loss in subsequent periods:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect of translation to presentation currency</td>
<td>277</td>
<td>581</td>
</tr>
<tr>
<td>Other comprehensive income not to be reclassified to profit or loss in subsequent periods, net</td>
<td>277</td>
<td>581</td>
</tr>
<tr>
<td>Other comprehensive income for the year, net of tax</td>
<td>2,415</td>
<td>3,105</td>
</tr>
<tr>
<td>Attributable to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shareholders of the parent company</td>
<td>2,417</td>
<td>3,106</td>
</tr>
<tr>
<td>Non-controlling interests</td>
<td>(2)</td>
<td>(1)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,415</strong></td>
<td><strong>3,105</strong></td>
</tr>
</tbody>
</table>

The accompanying notes on pages 232–266 form an integral part of the consolidated financial statements.

### Consolidated statement of financial position

**at 31 December 2017**

**US Dollars million**

<table>
<thead>
<tr>
<th></th>
<th>As at 31 December 2015</th>
<th>As at 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSETS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-current assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>14</td>
<td>10,960</td>
</tr>
<tr>
<td>Intangible assets</td>
<td></td>
<td>148</td>
</tr>
<tr>
<td>Other financial assets</td>
<td>15</td>
<td>192</td>
</tr>
<tr>
<td>Other taxes receivable</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Deferred tax assets</td>
<td>13</td>
<td>77</td>
</tr>
<tr>
<td>Other non-current assets</td>
<td>17</td>
<td>731</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12,109</strong></td>
<td><strong>10,877</strong></td>
</tr>
<tr>
<td>Current assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventories</td>
<td>17</td>
<td>2,689</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>11</td>
<td>327</td>
</tr>
<tr>
<td>Advances paid and prepaid expenses</td>
<td>71</td>
<td>66</td>
</tr>
<tr>
<td>Other financial assets</td>
<td>15</td>
<td>99</td>
</tr>
<tr>
<td>Income tax receivable</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Other taxes receivable</td>
<td>19</td>
<td>299</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>19</td>
<td>852</td>
</tr>
<tr>
<td>Other current assets</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,526</strong></td>
<td><strong>5,046</strong></td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td><strong>16,635</strong></td>
<td><strong>15,923</strong></td>
</tr>
<tr>
<td>EQUITY AND LIABILITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital and reserves</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Consolidated financial statements

#### Share capital

<table>
<thead>
<tr>
<th>Notes</th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>21</td>
<td>6</td>
</tr>
</tbody>
</table>

#### Share premium

$1,254$ ($1,254)

#### Translation reserve

$(4,490)$ $(4,778)$

#### Retained earnings

$3,822$ $2,527$

#### Non-controlling interests

$1,074$ $1,074$

#### Equity attributable to shareholders of the parent company

$4,327$ $2,822$

#### Non-current liabilities

<table>
<thead>
<tr>
<th>Notes</th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>loans and borrowings</td>
<td>8,236</td>
<td>7,276</td>
</tr>
<tr>
<td>provisions</td>
<td>465</td>
<td>441</td>
</tr>
<tr>
<td>trade and other long-term payables</td>
<td>402</td>
<td>523</td>
</tr>
<tr>
<td>deferred tax liabilities</td>
<td>407</td>
<td>355</td>
</tr>
<tr>
<td>other long-term liabilities</td>
<td>115</td>
<td>50</td>
</tr>
</tbody>
</table>

#### Non-current liabilities

<table>
<thead>
<tr>
<th>Notes</th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>loans and borrowings</td>
<td>871</td>
<td>579</td>
</tr>
<tr>
<td>trade and other payables</td>
<td>783</td>
<td>1,613</td>
</tr>
<tr>
<td>dividends payable</td>
<td>6</td>
<td>1,614</td>
</tr>
<tr>
<td>employee benefit obligations</td>
<td>277</td>
<td>301</td>
</tr>
<tr>
<td>provisions</td>
<td>189</td>
<td>180</td>
</tr>
<tr>
<td>derivative financial instruments</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>income tax payable</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>other taxes payable</td>
<td>10</td>
<td>139</td>
</tr>
</tbody>
</table>

#### Current liabilities

<table>
<thead>
<tr>
<th>Notes</th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>loans and borrowings</td>
<td>3,465</td>
<td>4,358</td>
</tr>
<tr>
<td>trade and other payables</td>
<td>817</td>
<td>737</td>
</tr>
<tr>
<td>provisions</td>
<td>1,175</td>
<td>1,175</td>
</tr>
<tr>
<td>deferred tax liabilities</td>
<td>407</td>
<td>355</td>
</tr>
<tr>
<td>other long-term liabilities</td>
<td>115</td>
<td>50</td>
</tr>
<tr>
<td>inventory</td>
<td>346</td>
<td>346</td>
</tr>
<tr>
<td>trade and other receivables</td>
<td>174</td>
<td>174</td>
</tr>
<tr>
<td>employee benefit obligations</td>
<td>277</td>
<td>301</td>
</tr>
<tr>
<td>provisions</td>
<td>189</td>
<td>180</td>
</tr>
<tr>
<td>deferred tax liabilities</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>income tax payable</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>other taxes payable</td>
<td>10</td>
<td>139</td>
</tr>
</tbody>
</table>

#### Total liabilities

$11,977$ $12,627$

#### Total equity and liabilities

$16,635$ $16,523$

### Consolidated statement of cash flows for the year ended 31 December 2017

#### Us Dollars million

#### Operating activities

<table>
<thead>
<tr>
<th>Notes</th>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>profit before tax</td>
<td>2,844</td>
<td>3,276</td>
</tr>
<tr>
<td>adjustments for:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>depreciation and amortisation</td>
<td>645</td>
<td>557</td>
</tr>
<tr>
<td>impairment of non-financial assets</td>
<td>227</td>
<td>153</td>
</tr>
<tr>
<td>loss on disposal of property, plant and equipment</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>change in provisions and allowances</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>finance costs and income from investments, net</td>
<td>458</td>
<td>360</td>
</tr>
<tr>
<td>foreign exchange gain, net</td>
<td>(158)</td>
<td>(491)</td>
</tr>
<tr>
<td>other</td>
<td>58</td>
<td>9</td>
</tr>
<tr>
<td>total cash generated from operating activities</td>
<td>4,103</td>
<td>3,958</td>
</tr>
</tbody>
</table>

#### Investing activities

<table>
<thead>
<tr>
<th>Notes</th>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>changes in working capital:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inventories</td>
<td>(346)</td>
<td>(751)</td>
</tr>
<tr>
<td>trade and other receivables</td>
<td>(174)</td>
<td>(2)</td>
</tr>
<tr>
<td>advances paid and prepaid expenses</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>other taxes receivable</td>
<td>3</td>
<td>(36)</td>
</tr>
<tr>
<td>employee benefit obligations</td>
<td>24</td>
<td>44</td>
</tr>
<tr>
<td>trade and other payables</td>
<td>(1,118)</td>
<td>835</td>
</tr>
<tr>
<td>provisions</td>
<td>(48)</td>
<td>(45)</td>
</tr>
<tr>
<td>other taxes payable</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>cash generated from operating activities</td>
<td>2,433</td>
<td>4,041</td>
</tr>
<tr>
<td>income tax paid</td>
<td>(670)</td>
<td>(530)</td>
</tr>
<tr>
<td>net cash generated from operating activities</td>
<td>1,763</td>
<td>3,511</td>
</tr>
</tbody>
</table>

#### Investing activities
For the year ended 31 December 2017

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of property, plant and equipment</td>
<td>(1,940)</td>
<td>(1,667)</td>
</tr>
<tr>
<td>Purchase of other financial assets</td>
<td>–</td>
<td>(150)</td>
</tr>
<tr>
<td>Purchase of intangible assets</td>
<td>(62)</td>
<td>(41)</td>
</tr>
<tr>
<td>Purchase of other non-current assets</td>
<td>(88)</td>
<td>(79)</td>
</tr>
<tr>
<td>Loans issued</td>
<td>(18)</td>
<td>(103)</td>
</tr>
<tr>
<td>Proceeds from repayment of loans issued</td>
<td>48</td>
<td>–</td>
</tr>
<tr>
<td>Net change in deposits placed</td>
<td>(80)</td>
<td>(10)</td>
</tr>
<tr>
<td>Proceeds from sale of other financial assets</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Proceeds from disposal of property, plant and equipment</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>Proceeds from disposal of subsidiaries and assets classified as held for sale</td>
<td>99</td>
<td>3</td>
</tr>
<tr>
<td>Interest received</td>
<td>51</td>
<td>24</td>
</tr>
<tr>
<td>Net cash used in investing activities</td>
<td>(1,936)</td>
<td>(1,920)</td>
</tr>
</tbody>
</table>

**FINANCING ACTIVITIES**

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceeds from loans and borrowings</td>
<td>4,233</td>
<td>936</td>
</tr>
<tr>
<td>Repayments of loans and borrowings</td>
<td>(3,360)</td>
<td>(7,747)</td>
</tr>
<tr>
<td>Financial lease payments</td>
<td>(15)</td>
<td>(5)</td>
</tr>
<tr>
<td>Dividends paid</td>
<td>(2,371)</td>
<td>(2,222)</td>
</tr>
<tr>
<td>Dividends paid to non-controlling interest</td>
<td>(1)</td>
<td>–</td>
</tr>
<tr>
<td>Interest paid</td>
<td>(643)</td>
<td>(593)</td>
</tr>
<tr>
<td>Proceeds from sale of a non-controlling interest in a subsidiary</td>
<td>294</td>
<td>86</td>
</tr>
<tr>
<td>Sale of own shares from treasury stock</td>
<td>–</td>
<td>154</td>
</tr>
<tr>
<td>Net cash used in financing activities</td>
<td>(2,237)</td>
<td>(2,399)</td>
</tr>
<tr>
<td>Net decrease in cash and cash equivalents</td>
<td>(2,410)</td>
<td>(808)</td>
</tr>
<tr>
<td>Cash and cash equivalents at the beginning of the year</td>
<td>3,325</td>
<td>4,098</td>
</tr>
<tr>
<td>Effects of foreign exchange differences on balances of cash and cash equivalents</td>
<td>(83)</td>
<td>35</td>
</tr>
<tr>
<td>Cash and cash equivalents at the end of the year</td>
<td>852</td>
<td>3,325</td>
</tr>
</tbody>
</table>

**Consolidated statement of changes in equity for the year ended 31 December 2017**

<table>
<thead>
<tr>
<th>Description</th>
<th>Share capital</th>
<th>Share premium</th>
<th>Treasury shares</th>
<th>Translation reserve</th>
<th>Retained earnings</th>
<th>Total</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes</td>
<td>6</td>
<td>1,254</td>
<td>(196)</td>
<td>(5,348)</td>
<td>6,523</td>
<td>2,239</td>
<td>22</td>
</tr>
<tr>
<td>Balance at 1 January 2016</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Profit/(loss) for the year</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Other comprehensive income</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>570</td>
<td>570</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total comprehensive income/ (loss) for the year</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>570</td>
<td>2,536</td>
<td>3,106</td>
<td></td>
</tr>
<tr>
<td>Dividends</td>
<td>27</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>(1,708)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Increase in non-controlling interest due to decrease in ownership of a subsidiary</td>
<td>22</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>25</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Sale of own shares from treasury stock</td>
<td>–</td>
<td>156</td>
<td>–</td>
<td>(38)</td>
<td>–</td>
<td>158</td>
<td></td>
</tr>
<tr>
<td>Decrease in non-controlling interest due to increase in ownership of a subsidiary</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>288</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Balance at 31 December 2016</td>
<td>6</td>
<td>1,254</td>
<td>–</td>
<td>(4,778)</td>
<td>7,340</td>
<td>3,822</td>
<td></td>
</tr>
<tr>
<td>Profit/(loss) for the year</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Other comprehensive income</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>288</td>
<td>–</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total comprehensive income/ (loss) for the year</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>288</td>
<td>2,129</td>
<td>2,417</td>
<td></td>
</tr>
<tr>
<td>Dividends</td>
<td>21</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>(1,846)</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>Increase in non-controlling interest due to decrease in ownership of a subsidiary</td>
<td>22</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>35</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Other effects related to transactions with non-controlling interest owners</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>(100)</td>
<td>(100)</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Decrease in non-controlling interest due to increase in ownership of a subsidiary</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>(1)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Balance at 31 December 2017</td>
<td>6</td>
<td>1,254</td>
<td>–</td>
<td>(4,905)</td>
<td>7,557</td>
<td>4,327</td>
<td></td>
</tr>
</tbody>
</table>

The accompanying notes on pages 232–266 form an integral part of the consolidated financial statements.
Notes to the consolidated financial statements for the year ended 31 December 2017

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 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 On consolidated statements of such entities have been adjusted to ensure that the consolidated financial statements are presented in accordance with IFRS.

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, in accordance with IAS 2 Inventories;

2. Changes in accounting policies

Reclassification
Information for the year ended 31 December 2016 was reclassified in accordance with requirement of IFRS 5 Non-current Assets Held for Sale and Discontinued Operations since the criteria for classification of Nornickel as assets held for sale were no longer met as at 31 December 2017 (refer to note 20).

At 31 December 2017 management reassessed classification of some expenses of cost of metal sales and selling and distribution expenses in order to better align cost of sales structure with management accounts and reporting (refer to notes 7 and 9). Information for the year ended 31 December 2016 has been reclassified to conform with the current period presentation.

Standards and interpretations effective in the current year
In the preparation of these consolidated financial statements the Group has adopted all new and revised International Financial Reporting Standards and Interpretations issued by International Financial Reporting Interpretations Committee (“IFRIC”) that are mandatory for adoption in annual periods beginning on or after 1 January 2017.

Adoption of amendments to the existing Standards detailed below did not have significant impact on the accounting policies, financial position or performance of the Group:
- IFRS 12 Disclosure of Interests in Other Entities (amended);
- IAS 7 Statement of Cash Flows (amended);

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 was achieved 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 acquirer’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 intragroup 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.

Standards and interpretations in issue but not yet effective
At the date of authorisation of these consolidated financial statements, the following Standards and Interpretations or amendments to them were in issue but not yet effective and not early adopted:

<table>
<thead>
<tr>
<th>Standards and Interpretations</th>
<th>Effective for annual periods beginning on or after</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFRS 15 Revenue from Contracts with Customers</td>
<td>1 January 2018</td>
</tr>
<tr>
<td>IFRS 9 Financial Instruments (amended)</td>
<td>1 January 2018</td>
</tr>
<tr>
<td>IFRS 4 Insurance Contracts (amended)</td>
<td>1 January 2018</td>
</tr>
<tr>
<td>IFRS 16 Leases</td>
<td>1 January 2019</td>
</tr>
<tr>
<td>IFRS 23 Uncertainty over Income Tax Treatments</td>
<td>1 January 2019</td>
</tr>
<tr>
<td>IFRS 17 Insurance Contracts</td>
<td>1 January 2021</td>
</tr>
</tbody>
</table>

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 (effective for annual periods beginning on or after 1 January 2019) replaces IAS 17 Leases. The standard introduces a comprehensive framework for accounting of lease payments. It replaces existing lease recognition guidance, including IAS 17 Leases, IAS 11 Construction Contracts and certain interpretations. The standard introduces a new impairment model for financial assets and new rules for hedge accounting. The standard will not materially affect the consolidated financial statements of the Group.

IFRS 15 Revenue from Contracts with Customers (effective for annual periods beginning on or after 1 January 2018) replaces IFRS 11 Construction Contracts and IFRS 15 Construction Contracts and certain interpretations. The standard introduces a five-step model for revenue from contracts with customers. According to IFRS 15, revenue is measured in the amount of consideration to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer. Based on the performed assessment, the new standard is not expected to affect significantly the Group’s consolidated financial statements.

IFRS 9 Financial Instruments (effective for annual periods beginning on or after 1 January 2018) replaces IAS 39 Financial Instruments: Recognition and Measurement and introduces a new impairment model for financial assets and new rules for financial instruments. The standard will not materially affect the consolidated financial statements of the Group.

IFRS 12 Disclosure of Interests in Other Entities (amended) replaces IAS 27 Consolidated and Separate Financial Statements. The standard introduces new disclosure requirements for investments in subsidiaries and joint arrangements. The new disclosure requirements are expected to result in more transparent and comparable financial statements.
Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures. The classification depends on the contractual rights and obligations of each investor. The Group applies the following accounting to joint operations and joint ventures. 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 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 acquiree’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 statement of financial 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 exceed the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree and the fair value of the acquiree’s previously held interest in the acquiree (if any), the excess is recognised in the consolidated income statement immediately as a bargain purchase gain.

Exchange rates used in the preparation of the consolidated financial statements were as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average for the year ended 31 December 2017</td>
<td>7.81</td>
<td>13.78</td>
<td>1.30</td>
<td>7.79</td>
</tr>
<tr>
<td>Average for the year ended 31 December 2016</td>
<td>7.75</td>
<td>13.74</td>
<td>1.28</td>
<td>7.76</td>
</tr>
</tbody>
</table>

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 which cases income and expenses are translated at the dates of the transactions);
- 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 borrowings, dividends and advances received, gains and losses 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.

Financial 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. Non-monetary items carried at fair value are translated at the exchange rate prevailing at the date on which the most recent fair value was determined. Exchange differences arising from changes in exchange rates are recognised in the consolidated income statement.

The presentation of the consolidated financial statements of the Group on 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 208-FZ, which use the Russian Rouble as the presentation currency (refer to note 1).
Other revenue
Revenue from sale of goods, other than metals, is recognised when significant risks and rewards of ownership are transferred to the buyer in accordance with the shipping terms specified in the sales agreements.

Revenue from service contracts is recognised when the services are rendered and the outcome can be reliably measured.

Dividends and interest income
Dividends from investments are 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 unwindling 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 amount of 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 those 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 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.

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.
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;
- inviolable 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 production.

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, licences 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 at the financial asset’s original effective interest rate.

Impairment of financial assets
Impairment of financial assets is recognised when there is objective evidence that a financial asset or a group of financial assets has suffered a significant decline in value and that the decline is not expected to be reversed in the foreseeable future. A financial asset is impaired if the estimated future cash flows, discounted at the financial asset’s original effective interest rate, are less than the carrying amount of the financial asset or the group of financial assets.

Objective evidence of an impairment loss includes:
- failure to make promised future payments;
- a significant decline in the financial asset’s market price, which is presumed to reflect an impairment loss if it is a decline of 20% or more in the financial asset’s market price; or
- a significant delay in receipt of promised future payments.

At each reporting date, the Group identifies financial assets which it has incurred an impairment loss on. The Group also identifies whether there has been a significant change in the nature of the obligation or to the economic environment in which the financial asset is held.

Provisions for impairment losses are made to the carrying amount of the financial asset or group of financial assets. Impairment losses on financial assets are recognised in the consolidated income statement immediately.

Where market interest rates are not appropriate, the effective interest rate is used.

Investors in unlisted equity securities in other than a quoted market price in an active market are recorded at management’s estimate of fair value. Investments in unlisted equity securities that do not have a quoted market price in an active market are recorded at management’s estimate of fair value.

Impact of financial assets
Financial assets, other than those at fair value through profit or loss, are assessed for indicators of impairment at each statement of financial position date. Financial assets are impaired where there is objective evidence that a loss has been incurred. The Group exercises its judgement in order to make the assessment of impairment.

The Group has fully provided for all trade and other receivables which were due in excess of 365 days. Trade and other receivables that are past due for less than 365 days are provided according to expected probability of repayment and the length of the overdue period.

Objectives of impairment for accounts receivable include the Group’s past experience of collecting payments, an increase in the number of accounts receivable and uncollectible accounts.

Trade receivables, loans, and other receivables that have fixed or determinable payments which are not quoted in an active market are classified as loans and receivables. Loans and receivables are measured at amortised cost using the effective interest method. Interest income is recognised using the effective interest method.

Listed equity securities held by the Group that are traded in an active market are measured at their market value. Gains and losses arising from changes in fair value are recognised in other comprehensive income in the investments revaluation reserve. Investments that are held to maturity and are classified as loans and receivables are measured at amortised cost using the effective interest method.

Investments in unlisted equity securities, that do not have a quoted market price in an active market, are recorded at management’s estimate of fair value.
The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with the exception of trade and other receivables, where the carrying amount is reduced through the use of an provision for doubtful debts. When trade and other receivables are considered uncollectible, it is written off against the provision. Subsequent recoveries of amounts previously written off are credited against the provision. Changes in the provision are recognised in the consolidated income statement.

With the exception of available-for-sale debt and equity instruments, if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed through the consolidated income statement to the extent that the carrying amount of the investment at the date the impairment is reversed does not exceed what the amortised cost would have been had the impairment not been recognised.

When a decline in fair value of an available-for-sale investment has been recognised in other comprehensive income and there is objective evidence that investment is impaired, the cumulative loss that had been recognised in other comprehensive income is reclassified from other comprehensive income and recognised in the consolidated income statement even though the investment has not been derecognised. Impairment losses previously recognised through consolidated income statement are not reversed. Any increase in fair value subsequent to an impairment loss is recognised in other comprehensive income.

**Decommissioning obligations**

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 income statement 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.

**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 net present value, are recognised at the moment when the legal or constructive obligation in relation to such costs arises (generally when the related asset is put into operation) and the future cost can be reliably estimated. This cost is 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 amendment of the discount or 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 judgments 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 life of property, plant and equipment;
- impairment of assets, including fair value of assets held for sale;
- provisions;
- decommissioning obligations;
- income taxes; and
- contingencies.

**Useful economic lives of property, plant and equipment**

Carring value of the Group’s mining assets, classified within property, plant and equipment, is amortised 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 amortisation 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 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**

The Group creates provision for doubtful debts to account for estimated losses resulting from the inability of customers to make the required payments. When evaluating the adequacy of a provision for doubtful debts, management bases its estimate on current overall economic conditions, ageing of the accounts receivable balances, historical write-off experience, customer creditworthiness and changes in payment terms. Changes in the economy, industry or specific customer conditions may cause the provisions to be different that actual results.

**Information for shareholders**
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 licence agreements and internally generated engineering estimates. Provision is made, based on net present values, for decommissioning and land restoration costs as soon as the obligation arises. 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 of each jurisdiction.

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. Segmental information

Operating segments are identified on the basis of internal reports on components of the Group that are regularly reviewed by the Management Board.

Management has determined the following operating segments:
- “GMK Group” segment, which includes mining and metallurgy operations, transport services, energy, repair and maintenance services located at Taimyr Peninsula;
- “KGMK Group” segment, which includes mining and metallurgy operations, energy, exploration activities located at Kola Peninsula;
- “NN Harjavitaa” segment, which includes refinery operations located in Finland;
- “Other metallurgical” segment, which includes operations of Bydgoszcz project, other metallurgy operations and exploration activities located in Russia and abroad;
- “Other non-metallurgical” segment, which includes metal and other trading, supply chain management, transport services, energy and utility, research and other activities located in Russia and abroad.

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 related accounts;
- intercompany investments;
- accrual of intercompany dividends;
- intercompany refined metal sales.

Amounts are measured on the same basis as those in the consolidated financial statements. Information for the year ended 31 December 2016 has been presented to conform with the current period presentation.

The following tables present revenue, measure of segment profit or loss (EBITDA) and other segmental information from continuing operations regarding the Group’s reportable segments for the year ended 31 December 2017 and 31 December 2016, respectively.

<table>
<thead>
<tr>
<th>Segment</th>
<th>GMK Group</th>
<th>KGMK Group</th>
<th>NN Harjavitaa</th>
<th>Other metallurgical</th>
<th>Other non-metallurgical</th>
<th>Eliminations</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue from external customers</td>
<td>7,084</td>
<td>3,537</td>
<td>840</td>
<td>34</td>
<td>831</td>
<td>–</td>
<td>9,180</td>
</tr>
<tr>
<td>Inter-segment revenue</td>
<td>607</td>
<td>531</td>
<td>–</td>
<td>107</td>
<td>415</td>
<td>(1,660)</td>
<td>–</td>
</tr>
<tr>
<td>Total revenue</td>
<td>7,691</td>
<td>4,068</td>
<td>947</td>
<td>141</td>
<td>1,246</td>
<td>(1,660)</td>
<td>9,146</td>
</tr>
<tr>
<td>Segment EBITDA</td>
<td>4,701</td>
<td>193</td>
<td>84</td>
<td>(11)</td>
<td>119</td>
<td>112</td>
<td>4,265</td>
</tr>
<tr>
<td>Unallocated</td>
<td>(643)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Consolidated EBITDA 3,955
Depreciation and amortisation (645)
Impairment of non-financial assets (227)
Finance costs (155)
Foreign exchange gain, net 97
Other income and expenses, net (97)
Profit before tax 2,864

Other segmental information
Purchase of property, plant and equipment and intangible assets 1,225 228 16 469 64 – 2,002
Depreciation and amortisation 508 63 25 73 23 (47) 645
Impairment of non-financial assets 101 3 – 122 1 – 227

Consolidated EBITDA 3,955
Depreciation and amortisation (645)
Impairment of non-financial assets (227)
Finance costs (155)
Foreign exchange gain, net 97
Other income and expenses, net (97)
Profit before tax 2,864

Other segmental information
Purchase of property, plant and equipment and intangible assets 1,284 93 16 288 33 – 1,794
Depreciation and amortisation 435 41 28 – 23 30 557
Impairment of non-financial assets 50 2 – – 9 – 61

Appendixes
The following tables present assets and liabilities of the Group’s reportable segments at 31 December 2017 and 31 December 2016, respectively.

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>GMK Group</th>
<th>KGMK Group</th>
<th>NN Harjavalta</th>
<th>Other metallurgical</th>
<th>Other non-metallurgical</th>
<th>Eliminations</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-segment assets</td>
<td>346</td>
<td>207</td>
<td>172</td>
<td>11</td>
<td>54</td>
<td>(700)</td>
<td>15,430</td>
</tr>
<tr>
<td>Segment assets</td>
<td>11,424</td>
<td>963</td>
<td>384</td>
<td>1,500</td>
<td>1,584</td>
<td>(425)</td>
<td>15,430</td>
</tr>
<tr>
<td>Total segment assets</td>
<td>11,770</td>
<td>1,170</td>
<td>556</td>
<td>1,511</td>
<td>1,638</td>
<td>(1,218)</td>
<td>15,430</td>
</tr>
<tr>
<td>Unallocated</td>
<td>2,317</td>
<td>292</td>
<td>197</td>
<td>164</td>
<td>570</td>
<td>(790)</td>
<td>2,350</td>
</tr>
<tr>
<td>Total assets</td>
<td>16,635</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>At 31 December 2016</th>
<th>GMK Group</th>
<th>KGMK Group</th>
<th>NN Harjavalta</th>
<th>Other metallurgical</th>
<th>Other non-metallurgical</th>
<th>Eliminations</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-segment assets</td>
<td>296</td>
<td>79</td>
<td>164</td>
<td>35</td>
<td>49</td>
<td>(611)</td>
<td>12,623</td>
</tr>
<tr>
<td>Segment assets</td>
<td>9,922</td>
<td>768</td>
<td>383</td>
<td>868</td>
<td>753</td>
<td>(111)</td>
<td>12,623</td>
</tr>
<tr>
<td>Total segment assets</td>
<td>10,218</td>
<td>847</td>
<td>543</td>
<td>903</td>
<td>842</td>
<td>(730)</td>
<td>12,623</td>
</tr>
<tr>
<td>Unallocated</td>
<td>3,900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total assets</td>
<td>16,523</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Group’s non-current assets are primarily located in the Russian Federation and Finland.

### 6. Metal sales

The Group’s metal sales to external customers are detailed below (based on external customers’ locations):

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>Nickel</th>
<th>Copper</th>
<th>Platinum</th>
<th>Semi-products</th>
<th>Other metals</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>4,753</td>
<td>1,067</td>
<td>2,098</td>
<td>236</td>
<td>85</td>
<td>3,294</td>
</tr>
<tr>
<td>Asia</td>
<td>1,939</td>
<td>709</td>
<td>6</td>
<td>762</td>
<td>97</td>
<td>331</td>
</tr>
<tr>
<td>North and South America</td>
<td>1,166</td>
<td>313</td>
<td>–</td>
<td>817</td>
<td>–</td>
<td>69</td>
</tr>
<tr>
<td>Russian Federation and CIS</td>
<td>557</td>
<td>215</td>
<td>177</td>
<td>41</td>
<td>85</td>
<td>81</td>
</tr>
<tr>
<td>Total</td>
<td>8,419</td>
<td>2,304</td>
<td>2,281</td>
<td>2,346</td>
<td>623</td>
<td>424</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For the year ended 31 December 2016</th>
<th>Nickel</th>
<th>Copper</th>
<th>Platinum</th>
<th>Semi-products</th>
<th>Other metals</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>4,194</td>
<td>1,143</td>
<td>1,544</td>
<td>821</td>
<td>209</td>
<td>3,403</td>
</tr>
<tr>
<td>Asia</td>
<td>1,723</td>
<td>1,104</td>
<td>1</td>
<td>478</td>
<td>26</td>
<td>512</td>
</tr>
<tr>
<td>North and South America</td>
<td>717</td>
<td>22</td>
<td>–</td>
<td>488</td>
<td>–</td>
<td>26</td>
</tr>
<tr>
<td>Russian Federation and CIS</td>
<td>792</td>
<td>156</td>
<td>294</td>
<td>101</td>
<td>208</td>
<td>325</td>
</tr>
<tr>
<td>Total</td>
<td>7,445</td>
<td>2,622</td>
<td>1,839</td>
<td>1,888</td>
<td>654</td>
<td>216</td>
</tr>
</tbody>
</table>

### 7. Cost of metal sales

#### Cash operating costs

- Labour: 1,377, 1,145
- Materials and supplies: 703, 520
- Purchases of metals for resale: 530, 184
- Purchases of raw materials and semi-products: 297, 292
- Mineral extraction tax and other levies: 221, 122
- Third party services: 204, 70
- Electricity and heat energy: 132, 101
- Production costs related to the joint operation: 93, 79
- Fuel: 81, 60
- Transportation expenses: 64, 71
- Sundry costs: 150, 143

Total cash operating costs: 3,852, 2,887

Depreciation and amortisation: 630, 456

Total: 3,988, 3,633

### 8. General and administrative expenses

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>Staff costs</th>
<th>Taxes other than mineral extraction tax and income tax</th>
<th>Third party services</th>
<th>Depreciation and amortisation</th>
<th>Rent expenses</th>
<th>Transportation expenses</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>759</td>
<td>581</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9. Selling and distribution expenses

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>Transportation expenses</th>
<th>Marketing expenses</th>
<th>Staff costs</th>
<th>Export duties</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>111</td>
<td>61</td>
<td>9</td>
<td>7</td>
<td></td>
<td>191</td>
</tr>
</tbody>
</table>
10. Other net operating expenses

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social expenses</td>
<td>303</td>
</tr>
<tr>
<td>Change in allowance for doubtful debts</td>
<td>19</td>
</tr>
<tr>
<td>Change in allowance for obsolete and slow-moving inventory</td>
<td>11 (2)</td>
</tr>
<tr>
<td>Change in provision for reconfiguration of production facilities</td>
<td>(4) (23)</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>362</td>
</tr>
</tbody>
</table>

11. Finance costs

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest expense on borrowings net of amounts capitalised</td>
<td>386</td>
</tr>
<tr>
<td>Unwinding of discount on provisions and payables</td>
<td>133</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>535</td>
</tr>
</tbody>
</table>

12. Income from investments, net

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest income on bank deposits</td>
<td>33</td>
</tr>
<tr>
<td>Realised gain on disposal of investments</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
</tr>
</tbody>
</table>

13. Income tax expense

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current income tax expense</td>
<td>686</td>
</tr>
<tr>
<td>Deferred tax expense</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>721</td>
</tr>
</tbody>
</table>

A reconciliation of the statutory 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:

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit before tax</td>
<td>2,844</td>
</tr>
<tr>
<td>Income tax at statutory rate of 20%</td>
<td>569</td>
</tr>
<tr>
<td>Allowance for deferred tax assets</td>
<td>38</td>
</tr>
<tr>
<td>Non-deductible impairment of financial and non-financial assets</td>
<td>7</td>
</tr>
<tr>
<td>Non-deductible social expenses</td>
<td>72</td>
</tr>
<tr>
<td>Effect of different tax rates of subsidiaries operating in other jurisdictions</td>
<td>8</td>
</tr>
<tr>
<td>Tax effect of other permanent differences</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>721</td>
</tr>
</tbody>
</table>

Deferred tax balances

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>Recognised in income statement</th>
<th>Disposed or disposed of subsidiary</th>
<th>Effect of translation to presentation currency</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property, plant and equipment</td>
<td>550</td>
<td>2</td>
<td>(4)</td>
<td>20</td>
</tr>
<tr>
<td>Inventories</td>
<td>102</td>
<td>16</td>
<td>6</td>
<td>124</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>(2)</td>
<td>9</td>
<td>–</td>
<td>(3)</td>
</tr>
<tr>
<td>Decommissioning obligations</td>
<td>(79)</td>
<td>16</td>
<td>(6)</td>
<td>(69)</td>
</tr>
<tr>
<td>Loans and borrowings, trade and other payables</td>
<td>(33)</td>
<td>(35)</td>
<td>–</td>
<td>(59)</td>
</tr>
<tr>
<td>Other assets</td>
<td>(78)</td>
<td>57</td>
<td>–</td>
<td>(46)</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>6</td>
<td>2</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Tax loss carried forward</td>
<td>(4)</td>
<td>(32)</td>
<td>–</td>
<td>(2)</td>
</tr>
<tr>
<td>Net deferred tax liabilities</td>
<td>283</td>
<td>35</td>
<td>(4)</td>
<td>16</td>
</tr>
</tbody>
</table>

Deferred tax liabilities

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>Recognised in income statement</th>
<th>Disposed or disposed of subsidiary</th>
<th>Effect of translation to presentation currency</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property, plant and equipment</td>
<td>251</td>
<td>58</td>
<td>–</td>
<td>41</td>
</tr>
<tr>
<td>Inventories</td>
<td>91</td>
<td>(6)</td>
<td>–</td>
<td>17</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>(6)</td>
<td>(3)</td>
<td>–</td>
<td>(4)</td>
</tr>
<tr>
<td>Decommissioning obligations</td>
<td>(82)</td>
<td>(4)</td>
<td>–</td>
<td>(13)</td>
</tr>
<tr>
<td>Loans and borrowings, trade and other payables</td>
<td>(16)</td>
<td>(9)</td>
<td>–</td>
<td>(8)</td>
</tr>
<tr>
<td>Other assets</td>
<td>(15)</td>
<td>(2)</td>
<td>–</td>
<td>(2)</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>4</td>
<td>–</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Tax loss carried forward</td>
<td>(53)</td>
<td>24</td>
<td>–</td>
<td>(12)</td>
</tr>
<tr>
<td>Net deferred tax liabilities</td>
<td>199</td>
<td>59</td>
<td>–</td>
<td>25</td>
</tr>
</tbody>
</table>

Deferred tax liabilities

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>Recognised in income statement</th>
<th>Disposed or disposed of subsidiary</th>
<th>Effect of translation to presentation currency</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred tax liability</td>
<td>407</td>
<td></td>
<td></td>
<td>355</td>
</tr>
<tr>
<td>Deferred tax asset</td>
<td>(77)</td>
<td></td>
<td></td>
<td>(72)</td>
</tr>
<tr>
<td>Net deferred tax liabilities</td>
<td>330</td>
<td></td>
<td></td>
<td>283</td>
</tr>
</tbody>
</table>

Unrecognised deferred tax assets

Deferred tax assets have not been recognised as follows:

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deductible temporary differences</td>
<td>104</td>
</tr>
<tr>
<td>Tax loss carry forwards</td>
<td>219</td>
</tr>
<tr>
<td>Total</td>
<td>323</td>
</tr>
</tbody>
</table>

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 therefore.
At 31 December 2017 deferred tax asset in amount of USD 175 million related to tax loss arising on disposal of OJSC “Third Generation Company of the Wholesale Electricity Market” (“SO4-3 at 31 December 2016: USD 168 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 only if the Company exits the tax consolidation group without incurring any expenses.

Unrecognised deferred tax assets in the amount of USD 44 million related to other tax losses will not expire and can be utilised according to specific rules stated by art. 283 of the Tax Code of the Russian Federation (31 December 2016: USD 48 million).

At 31 December 2017, the Group did not recognise a deferred tax liability in respect of taxable temporary differences of USD 1,459 million (31 December 2016: USD 1,504 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

<table>
<thead>
<tr>
<th>Mining assets and mine development cost</th>
<th>Buildings, structures and utilities</th>
<th>Machinery, equipment and transport</th>
<th>Other</th>
<th>Total</th>
<th>Non-mining assets</th>
<th>Capital construction-in-progress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at 1 January 2016</td>
<td>5,101</td>
<td>2,002</td>
<td>2,319</td>
<td>106</td>
<td>1,508</td>
<td>10,836</td>
</tr>
<tr>
<td>Additions</td>
<td>1,232</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1,506</td>
</tr>
<tr>
<td>Transfers</td>
<td>–</td>
<td>450</td>
<td>363</td>
<td>59</td>
<td>(872)</td>
<td>–</td>
</tr>
<tr>
<td>Change in decommissioning provision</td>
<td>(18)</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>(13)</td>
<td>(30)</td>
</tr>
<tr>
<td>Disposals</td>
<td>(58)</td>
<td>(9)</td>
<td>(101)</td>
<td>(1)</td>
<td>(31)</td>
<td>(208)</td>
</tr>
<tr>
<td>Other</td>
<td>(49)</td>
<td>7</td>
<td>(37)</td>
<td>26</td>
<td>53</td>
<td>–</td>
</tr>
<tr>
<td>Effect of translation to presentation currency</td>
<td>1,107</td>
<td>402</td>
<td>431</td>
<td>31</td>
<td>255</td>
<td>2,226</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2016</strong></td>
<td>7,314</td>
<td>2,455</td>
<td>2,976</td>
<td>215</td>
<td>1,387</td>
<td>16,474</td>
</tr>
<tr>
<td>Additions</td>
<td>1,429</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1,506</td>
</tr>
<tr>
<td>Transfers</td>
<td>–</td>
<td>247</td>
<td>477</td>
<td>84</td>
<td>(808)</td>
<td>–</td>
</tr>
<tr>
<td>Change in decommissioning provision</td>
<td>(18)</td>
<td>(9)</td>
<td>(101)</td>
<td>(1)</td>
<td>(31)</td>
<td>(208)</td>
</tr>
<tr>
<td>Disposals</td>
<td>(524)</td>
<td>(501)</td>
<td>(8)</td>
<td>(23)</td>
<td>(12)</td>
<td>(599)</td>
</tr>
<tr>
<td>Other</td>
<td>(40)</td>
<td>42</td>
<td>(8)</td>
<td>2</td>
<td>2</td>
<td>–</td>
</tr>
<tr>
<td>Effect of translation to presentation currency</td>
<td>422</td>
<td>153</td>
<td>150</td>
<td>11</td>
<td>75</td>
<td>811</td>
</tr>
<tr>
<td><strong>Balance at 31 December 2017</strong></td>
<td>8,994</td>
<td>3,134</td>
<td>3,507</td>
<td>289</td>
<td>1,404</td>
<td>17,408</td>
</tr>
<tr>
<td><strong>Accumulated depreciation and impairment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at 1 January 2016</td>
<td>(1,588)</td>
<td>(1,046)</td>
<td>(1,277)</td>
<td>(46)</td>
<td>(244)</td>
<td>(4,195)</td>
</tr>
<tr>
<td>Charge for the year</td>
<td>(270)</td>
<td>(97)</td>
<td>(209)</td>
<td>(14)</td>
<td>–</td>
<td>(525)</td>
</tr>
<tr>
<td>Disposals</td>
<td>47</td>
<td>7</td>
<td>90</td>
<td>3</td>
<td>19</td>
<td>166</td>
</tr>
<tr>
<td>Impairment loss</td>
<td>(7)</td>
<td>(70)</td>
<td>(2)</td>
<td>–</td>
<td>(11)</td>
<td>(61)</td>
</tr>
<tr>
<td>Other</td>
<td>(11)</td>
<td>2</td>
<td>14</td>
<td>(9)</td>
<td>–</td>
<td>(62)</td>
</tr>
<tr>
<td>Effect of translation to presentation currency</td>
<td>(218)</td>
<td>(216)</td>
<td>(242)</td>
<td>(10)</td>
<td>(4)</td>
<td>(582)</td>
</tr>
</tbody>
</table>

At 31 December 2017 capital construction-in-progress included USD 225 million of irrevocable letters of credit opened for fixed assets purchases (31 December 2016: USD 87 million), representing security deposits placed in banks. For the year ended 31 December 2017 purchases of property, plant and equipment in the consolidated statement of cash flows include USD 210 million related to these irrevocable letters of credit (for the year ended 31 December 2016: USD 78 million).

Capitalised borrowing costs for the year ended 31 December 2017 amounted to USD 263 million (for the year ended 31 December 2016: USD 202 million). Capitalisation rate used to determine the amount of borrowing costs equals to 6.28% per annum (31 December 2016: 6.59%). At 31 December 2017 mining assets and mine development cost included USD 3,728 million of mining assets under development (31 December 2016: USD 2,994 million).

At 31 December 2017 non-mining assets included USD 55 million of investment property (31 December 2016: USD 136 million).

### Impairment

At 31 December 2017 the Group reclassified Nkomati Nickel Mine from assets classified as held for sale and tested the assets for impairment. The value in use of USD 1,459 million was determined by a discounted cash flow model approach. The most significant estimates and assumptions used in determination of value in use 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 2027. Measurements were performed based on discounted cash flows expected to be generated by production assets.
- **Management estimates**: metal concentrates market prices 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. Inflation used was projected within 2–5%. Forecast for exchange rates was made based on expected ZAR and USD inflation indices.
- **A pre-tax nominal ZAR discount rate of 21.6% was estimated by the reference to the weighted average cost of capital for the Group using a discounted cash flow model approach.**
- **Production forecasts for the year ended 31 December 2016 were adjusted based on actual results for the previous years.**

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.

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 were assessed as a separate cash-generating unit. The Group recognised impairment loss related to the gas extraction assets in the amount of USD 50 million in impairment of non-financial assets in the consolidated income statement for the year ended 31 December 2016.

### Mining assets and mine development cost

#### Buildings, structures and utilities

<table>
<thead>
<tr>
<th>Building and equipment cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>(1,412)</td>
</tr>
<tr>
<td>2016</td>
<td>(1,614)</td>
</tr>
<tr>
<td>2016</td>
<td>(72)</td>
</tr>
<tr>
<td>2016</td>
<td>(248)</td>
</tr>
<tr>
<td>2016</td>
<td>(5,444)</td>
</tr>
</tbody>
</table>

#### Machinery, equipment and transport

<table>
<thead>
<tr>
<th>Machinery and equipment cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>(1,181)</td>
</tr>
<tr>
<td>2016</td>
<td>(72)</td>
</tr>
<tr>
<td>2016</td>
<td>–</td>
</tr>
<tr>
<td>2016</td>
<td>–</td>
</tr>
</tbody>
</table>

#### Other

<table>
<thead>
<tr>
<th>Other cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>(5,444)</td>
</tr>
</tbody>
</table>
At 31 December 2017 indicators of additional impairment of gas production assets have been identified. The most significant estimates and assumptions used in determination of value in use 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 production assets.
- Management estimates prices for natural gas and gas concentrate based on commodities price forecasts. 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.
- Inflation indices and foreign currency rate forecasts were sourced from Economist Intelligence Unit report. Inflation used was projected within 4-7%. Forecast for exchange rates was made based on expected RUR and USD inflation indices.
- A pre-tax nominal RUR discount rate of 15.8% was estimated by the reference to the weighted average cost of capital for the Group and reflects management’s estimates of the risks specific to production units.

As a result, gas extraction assets were fully impaired. Impairment loss in the amount of USD 43 million was recognised in impairment of non-financial assets in the consolidated income statement for the year ended 31 December 2017.

During the year ended 31 December 2017 additional impairment losses in the amount of USD 55 million were recognised in respect of specific individual assets, primarily mining assets (for the year ended 31 December 2016: USD 11 million in respect of specific individual assets, primarily non-mining assets).

### 15. Other financial assets

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans issued and other receivables</td>
<td>190</td>
<td>176</td>
</tr>
<tr>
<td>Bank deposits</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Available-for-sale investments</td>
<td>–</td>
<td>4</td>
</tr>
<tr>
<td>Total non-current</td>
<td>192</td>
<td>190</td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans issued and other receivables</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Bank deposits</td>
<td>94</td>
<td>–</td>
</tr>
<tr>
<td>Derivative financial instruments</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total current</td>
<td>99</td>
<td>8</td>
</tr>
</tbody>
</table>

Available-for-sale investments in securities

During the year ended 31 December 2016, the Group fully impaired an interest in a related party which owns various real estate properties. Impairment loss was recognised in the consolidated income statement for the year ended 31 December 2016.

Bank deposits

Interest rate on long-term RUB-denominated deposits held in banks was 5.12% (31 December 2016: 5.10%) per annum.

Interest rate on long-term EUR-denominated deposits held in banks was 0.30% (31 December 2016: no EUR-denominated deposits held in banks) per annum.

Interest rate on current ZAR-denominated deposits held in banks was in the range from 6.68% to 7.42% (31 December 2016: from 6.80% to 7.45%) per annum.

### 16. Other taxes

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxes receivable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value added tax receivable</td>
<td>258</td>
<td>244</td>
</tr>
<tr>
<td>Other taxes</td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>298</td>
<td>279</td>
</tr>
<tr>
<td>Less: Allowance for value added tax receivable</td>
<td>(1)</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>279</td>
</tr>
<tr>
<td>Less: Non-current portion of other taxes receivable</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Other taxes receivable</td>
<td>296</td>
<td>277</td>
</tr>
<tr>
<td>Taxes payable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value added tax</td>
<td>66</td>
<td>70</td>
</tr>
<tr>
<td>Social security</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>Property tax</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Mineral extraction tax</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Other taxes payable</td>
<td>147</td>
<td>139</td>
</tr>
</tbody>
</table>

### 17. Inventories

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refined metals</td>
<td>655</td>
<td>370</td>
</tr>
<tr>
<td>Work-in-process and semi-products</td>
<td>1,332</td>
<td>901</td>
</tr>
<tr>
<td>Less: Allowance for work-in-process</td>
<td>(4)</td>
<td>–</td>
</tr>
<tr>
<td>Total metal inventories</td>
<td>1,994</td>
<td>1,215</td>
</tr>
<tr>
<td>Materials and supplies</td>
<td>739</td>
<td>728</td>
</tr>
<tr>
<td>Less: Allowance for obsolete and slow-moving items</td>
<td>(34)</td>
<td>(25)</td>
</tr>
<tr>
<td>Materials and supplies, net</td>
<td>705</td>
<td>701</td>
</tr>
<tr>
<td>Inventories</td>
<td>2,699</td>
<td>1,912</td>
</tr>
</tbody>
</table>

At 31 December 2017 part of metal semi-products stock in the amount of USD 453 million (31 December 2016: USD 830 million) was presented in other non-current assets according to Group’s production plans.

### 18. Trade and other receivables

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade receivables from metal sales</td>
<td>251</td>
<td>95</td>
</tr>
<tr>
<td>Other receivables</td>
<td>168</td>
<td>159</td>
</tr>
<tr>
<td>Total</td>
<td>419</td>
<td>254</td>
</tr>
<tr>
<td>Less: Allowance for doubtful debts</td>
<td>(52)</td>
<td>(18)</td>
</tr>
<tr>
<td>Trade and other receivables, net</td>
<td>327</td>
<td>173</td>
</tr>
</tbody>
</table>

In 2017 and 2016, the average credit period on metal sales varied from 0 to 30 days. Trade receivables are generally non-interest bearing.

At 31 December 2017 and 2016, 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 2017 was 33 days (2016: 32 days). No interest was charged on these receivables.

Included in the Group’s other receivables at 31 December 2017 were debtors with a carrying value of USD 34 million (31 December 2016: USD 45 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.

Aging of other receivables past due but not impaired was as follows:

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 180 days</td>
<td>25</td>
<td>41</td>
</tr>
<tr>
<td>180–365 days</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>45</td>
</tr>
</tbody>
</table>

Movement in the allowance for doubtful debts was as follows:

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance at beginning of the year</td>
<td>81</td>
<td>54</td>
</tr>
<tr>
<td>Change in allowance</td>
<td>16</td>
<td>34</td>
</tr>
<tr>
<td>Accounts receivable written-off</td>
<td>(0)</td>
<td>(2)</td>
</tr>
<tr>
<td>Effect of translation to presentation currency</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Balance at end of the year</td>
<td>92</td>
<td>81</td>
</tr>
</tbody>
</table>

19. Cash and cash equivalents

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current accounts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- foreign currencies</td>
<td>358</td>
<td>389</td>
</tr>
<tr>
<td>- RUB</td>
<td>76</td>
<td>58</td>
</tr>
<tr>
<td>Bank deposits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- foreign currencies</td>
<td>412</td>
<td>1,739</td>
</tr>
<tr>
<td>- RUB</td>
<td>–</td>
<td>1,159</td>
</tr>
<tr>
<td>Restricted cash and cash equivalents</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other cash and cash equivalents</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>852</td>
<td>3,326</td>
</tr>
</tbody>
</table>

20. Assets classified as held for sale and disposal of subsidiaries

On 17 October 2014, the Group entered into binding agreements to sell its assets in South Africa, comprising its 50% participation interest in Nkomati Nickel Mine (“Nkomati”) and its 85% stake in Tati Nickel Mining Company (together “African assets”) to BCL Investments (“BCL”). The total consideration for the assets amounted to USD 337 million subject to certain adjustments under agreement. Under the terms of the agreements, the buyer assumed all attributable decommissioning rehabilitation obligations related to the assets. On 2 April 2015, the Group sold its 85% stake in Tati Nickel Mining Company.

Finalisation of sale of Nkomati was subject to completion of conditions precedent, which was achieved in September 2016. However, BCL failed to meet its obligations according to the agreement and was put into a voluntary liquidation. The Group has filed legal claims against BCL in Botswana and LCIA to enforce sale of Nkomati.

Management believes that the criteria for held for sale are no longer met for Nkomati as at 31 December 2017. At 31 December 2017 Nkomati is presented as a joint operation and the Group recognises its share in assets, liabilities, income and expenses of Nkomati. Financial statements for the periods since classification of Nkomati as held for sale have been amended accordingly. After reclassification Nkomati assets were tested for impairment (refer to note 14).

Information for the year ended 31 December 2016 has been reclassified to conform with the current period presentation:

<table>
<thead>
<tr>
<th></th>
<th>As previously reported</th>
<th>Reclassification</th>
<th>Reclassified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property, plant and equipment</td>
<td>9,099</td>
<td>207</td>
<td>9,306</td>
</tr>
<tr>
<td>Other non-current financial assets</td>
<td>187</td>
<td>3</td>
<td>190</td>
</tr>
<tr>
<td>Deferred tax assets</td>
<td>56</td>
<td>16</td>
<td>72</td>
</tr>
<tr>
<td>Inventories</td>
<td>1,895</td>
<td>17</td>
<td>1,912</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>170</td>
<td>3</td>
<td>173</td>
</tr>
<tr>
<td>Advances paid and prepaid expenses</td>
<td>65</td>
<td>1</td>
<td>66</td>
</tr>
<tr>
<td>Other taxes receivable</td>
<td>276</td>
<td></td>
<td>277</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>3,301</td>
<td>24</td>
<td>3,325</td>
</tr>
<tr>
<td>Assets classified as held for sale</td>
<td>206</td>
<td>(206)</td>
<td>–</td>
</tr>
<tr>
<td>Non-current loans and borrowings</td>
<td>7,274</td>
<td>2</td>
<td>7,276</td>
</tr>
<tr>
<td>Non-current provisions</td>
<td>415</td>
<td>6</td>
<td>421</td>
</tr>
<tr>
<td>Deferred tax liabilities</td>
<td>303</td>
<td>52</td>
<td>355</td>
</tr>
<tr>
<td>Current loans and borrowings</td>
<td>578</td>
<td>1</td>
<td>579</td>
</tr>
<tr>
<td>Trade and other payables</td>
<td>1,603</td>
<td>4</td>
<td>1,613</td>
</tr>
<tr>
<td>Employee benefit obligations</td>
<td>293</td>
<td>3</td>
<td>305</td>
</tr>
<tr>
<td>Other taxes payable</td>
<td>138</td>
<td>1</td>
<td>139</td>
</tr>
<tr>
<td>Liabilities associated with assets classified as held for sale</td>
<td>2</td>
<td>(2)</td>
<td>–</td>
</tr>
</tbody>
</table>

19. Cash and cash equivalents

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current accounts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- foreign currencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- RUB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank deposits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- foreign currencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- RUB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted cash and cash equivalents</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other cash and cash equivalents</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20. Assets classified as held for sale and disposal of subsidiaries

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustments to the consolidated income statement</td>
<td>485</td>
</tr>
<tr>
<td>Foreign exchange gain, net</td>
<td>485</td>
</tr>
<tr>
<td>Share of profits of associates</td>
<td>6</td>
</tr>
</tbody>
</table>

OPERATING ACTIVITIES

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustments to profit before tax for:</td>
<td>485</td>
</tr>
<tr>
<td>Foreign exchange gain, net</td>
<td>485</td>
</tr>
<tr>
<td>Share of profits of associates</td>
<td>6</td>
</tr>
</tbody>
</table>

INVESTING ACTIVITIES

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of property, plant and equipment</td>
<td>1,698</td>
</tr>
<tr>
<td>–</td>
<td>10</td>
</tr>
</tbody>
</table>
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.

On 29 November 2016, the Group sold its 74.8% share in OJSC “Arkhangelsk Sea Commercial Port”, a subsidiary of the Group located in the Russian Federation, for a consideration of USD 7 million. The carrying value of net assets at the date of disposal amounted to USD 8 million. Loss on disposal in the amount of USD 1 million was recognised in the consolidated income statement.

On 15 April 2016, the Group sold its air company assets comprising 96.8% share in CJSC “Nordavia – Regional Airlines” (“Nordavia”), a subsidiary of the Group located in the Russian Federation and related to Nordavia aircrafts and infrastructure, for a consideration of USD 10 million. The carrying value of net assets at the date of disposal amounted to USD 4 million. Loss on disposal in the amount of USD 4 million was recognised in the consolidated income statement.

### 21. Share capital

#### Authorised and issued ordinary shares

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>At 1 January</td>
<td>158,245,476</td>
<td>156,995,401</td>
</tr>
<tr>
<td>Sale of own shares from treasury stock</td>
<td>–</td>
<td>1,250,075</td>
</tr>
<tr>
<td>At 31 December</td>
<td>158,245,476</td>
<td>158,245,476</td>
</tr>
</tbody>
</table>

During the year ended 31 December 2016, the Group sold 1,250,075 treasury shares for a cash consideration in the amount of USD 158 million.

#### Earnings per share

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic earnings per share (US Dollars per share)</td>
<td>13.5</td>
<td>16.1</td>
</tr>
</tbody>
</table>

The earnings and weighted average number of shares used in the calculation of earnings per share are as follows:

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit for the year attributable to shareholders of the parent company</td>
<td>2,229</td>
<td>2,358</td>
</tr>
<tr>
<td>Weighted average number of shares on issue</td>
<td>158,245,476</td>
<td>158,245,476</td>
</tr>
<tr>
<td>Effect of sale of own shares from treasury stock</td>
<td>–</td>
<td>54,648</td>
</tr>
<tr>
<td>Weighted average number of issued common shares outstanding</td>
<td>158,245,476</td>
<td>157,050,049</td>
</tr>
</tbody>
</table>

As at 31 December 2017 and 31 December 2016, the Group had no securities, which would have a dilutive effect on earnings per share of ordinary stock.

### 22. Non-controlling interest

In July 2016 the Group sold a 10.67% share in Bystrinskoye project for USD 80 million to a Chinese investor Highland Fund. 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 2017 and 31 December 2016 aggregate financial information relating to the subsidiary that has material non-controlling interest, before any intra-group eliminations, is presented below:

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-current assets</td>
<td>1,281</td>
<td>741</td>
</tr>
<tr>
<td>Current assets</td>
<td>134</td>
<td>151</td>
</tr>
<tr>
<td>Non-current liabilities</td>
<td>(558)</td>
<td>(514)</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>(156)</td>
<td>(185)</td>
</tr>
<tr>
<td>Net assets</td>
<td>649</td>
<td>576</td>
</tr>
<tr>
<td>Net assets attributable to non-controlling interest</td>
<td>325</td>
<td>61</td>
</tr>
</tbody>
</table>

Loss for the year

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other comprehensive income/(loss) for the year</td>
<td>31</td>
<td>82</td>
</tr>
<tr>
<td>Total comprehensive loss for the year</td>
<td>(3)</td>
<td>(77)</td>
</tr>
<tr>
<td>Loss attributable to non-controlling interest</td>
<td>(9)</td>
<td>(9)</td>
</tr>
<tr>
<td>Other comprehensive income attributable to non-controlling interest</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

Cash flows used in operating activities

<table>
<thead>
<tr>
<th></th>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flows used in investing activities</td>
<td>(42)</td>
<td>(63)</td>
</tr>
<tr>
<td>Cash flows from financing activities</td>
<td>459</td>
<td>239</td>
</tr>
<tr>
<td>Net (decrease)/increase in cash and cash equivalents</td>
<td>(7)</td>
<td>13</td>
</tr>
</tbody>
</table>

### 23. Loans and borrowings

<table>
<thead>
<tr>
<th></th>
<th>USD floating</th>
<th>RUB fixed</th>
<th>EUR floating</th>
<th>USD floating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average nominal rate during the year ended 31 December 2017, %</td>
<td>3.38%</td>
<td>11.50%</td>
<td>0.85%</td>
<td>6.72%</td>
</tr>
<tr>
<td>Loan balances</td>
<td>2,859</td>
<td>1,042</td>
<td>582</td>
<td>542</td>
</tr>
<tr>
<td>Total loans</td>
<td>4,560</td>
<td>2,962</td>
<td>1,690</td>
<td>105</td>
</tr>
<tr>
<td>Unsecured loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USD floating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RUB fixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUR floating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USD floating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RUB fixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secured loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RUB fixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total loans</td>
<td>4,560</td>
<td>2,962</td>
<td>1,690</td>
<td>105</td>
</tr>
<tr>
<td>Loans and borrowings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USD floating</td>
<td>5.05%</td>
<td>2018–2023</td>
<td>4,206</td>
<td>2,794</td>
</tr>
<tr>
<td>RUB fixed</td>
<td>11.60%</td>
<td>2026</td>
<td>259</td>
<td>247</td>
</tr>
<tr>
<td>Total loans</td>
<td>4,465</td>
<td>2,962</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate bonds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUR fixed</td>
<td>7.10%</td>
<td>2018</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>USD fixed</td>
<td>4.20%</td>
<td>2019</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Finance leasing</td>
<td>ZAR floating</td>
<td>2017–2019</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5,053</td>
<td>7,805</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss: current portion due within twelve months and presented as short-term loans and borrowings</td>
<td>(817)</td>
<td>(579)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term loans and borrowings</td>
<td>8,236</td>
<td>7,279</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 2017 consist of 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 (for the year ended 31 December 2016: changes from financing cash flows in the amount of USD (1,401) million, effect of changes in foreign exchange rates of USD 346 million and other non-cash changes of USD 697 million).

At 31 December 2017 loans were secured by property, plant and equipment with a carrying amount of USD 15 million (31 December 2016: USD 752 million). At 31 December 2017 and 31 December 2016 100% shares of the Group’s subsidiary LLC “GRK “Bystrinskoye” were under pledge.

24. Employee benefit obligations

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accrual for annual leave</td>
<td>203</td>
</tr>
<tr>
<td>Wages and salaries</td>
<td>168</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
</tr>
<tr>
<td>Total obligations</td>
<td>393</td>
</tr>
<tr>
<td>Less: non-current obligations</td>
<td>(16)</td>
</tr>
<tr>
<td>Current obligations</td>
<td>377</td>
</tr>
</tbody>
</table>

Defined contribution plans

Amounts recognised within continuing operations in the consolidated income statement in respect of defined contribution plans were as follows:

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension Fund of the Russian Federation</td>
<td>311</td>
</tr>
<tr>
<td>Mutual accumulated pension plan</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>324</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax provisions</td>
<td>134</td>
</tr>
<tr>
<td>Provision for social commitments</td>
<td>28</td>
</tr>
<tr>
<td>Decommissioning obligations</td>
<td>26</td>
</tr>
<tr>
<td>Other provisions</td>
<td>1</td>
</tr>
<tr>
<td>Total current provisions</td>
<td>189</td>
</tr>
</tbody>
</table>
| Non-current provisions
  | Decommissioning obligations | 396 | 397 |
  | Provision for social commitments | 68 | 43 |
  | Other long-term provisions | – | 1 |
  | Total non-current provisions | 464 | 441 |
| Total | 653 | 624 |

Decommissioning obligations

Key assumptions used in estimation of decommissioning obligations were as follows:

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount rates Russian entities</td>
<td>6.9%</td>
</tr>
<tr>
<td>Discount rates non-Russian entities</td>
<td>3%</td>
</tr>
<tr>
<td>Expected closure date of mines up to 2071</td>
<td>up to 2059</td>
</tr>
<tr>
<td>Expected inflation over the period from 2018 to 2037</td>
<td>3.0%</td>
</tr>
<tr>
<td>Expected inflation over the period from 2038 onwards</td>
<td>2.9%</td>
</tr>
<tr>
<td>Present value of expected cost to be incurred for settlement of decommissioning obligations was as follows:</td>
<td></td>
</tr>
<tr>
<td>Due from second to fifth year</td>
<td>2012</td>
</tr>
<tr>
<td>Due from sixth to tenth year</td>
<td>23</td>
</tr>
<tr>
<td>Due from eleventh to fifteenth year</td>
<td>39</td>
</tr>
<tr>
<td>Due from sixteenth to twentieth year</td>
<td>77</td>
</tr>
<tr>
<td>Due thereafter</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>398</td>
</tr>
</tbody>
</table>

In 2015 the Group approved a programme for reconfiguration of production facilities located in the Taimyr Peninsula. The programme started in 2016 and also included activities related to closure of the Nickel plant. In 2016 changes in the provision estimates for the reconfiguration of production facilities were recognised in Other net operating expenses in the consolidated income statement.

Social commitments

In 2010 the Group entered into several multilateral agreements with the Government of the Russian Federation, the Krasnoyarsk and the Trans-Baikal Regional Governments for construction of pre-schools and other items of social infrastructure in Norilsk, Dudinka and Chita, and resettlement of families currently residing in these cities to other Russian regions with more favourable living conditions during 2015–2020. The provision represents present value of the best estimate of the future outflow of economic benefits to settle these obligations.
26. Trade and other payables

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial liabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Trade payables</td>
<td>426</td>
</tr>
<tr>
<td>Payables for acquisition of property, plant and equipment</td>
<td>186</td>
</tr>
<tr>
<td>Other creditors</td>
<td>140</td>
</tr>
<tr>
<td><strong>Total financial liabilities</strong></td>
<td>752</td>
</tr>
<tr>
<td><strong>Non-financial liabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Advances received</td>
<td>31</td>
</tr>
<tr>
<td>Total non-financial liabilities</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>783</td>
</tr>
</tbody>
</table>

The maturity profile of the Group's financial liabilities was as follows:

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due within one month</td>
<td>194</td>
</tr>
<tr>
<td>Due from one to three months</td>
<td>244</td>
</tr>
<tr>
<td>Due from three to twelve months</td>
<td>314</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>752</td>
</tr>
</tbody>
</table>

27. Dividends

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 3.48) 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 statement of cash flows, 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 1,399 million. The dividends were paid to the shareholders in July 2017 in the amount of USD 1,401 million recognised in the consolidated statement of cash flows, using prevailing RUB/USD rates on the payment dates.

On 16 December 2016, the Extraordinary General shareholders’ meeting declared dividends in respect of the 9 months ended 30 September 2016 in the amount of RUB 444.25 (USD 7.26) 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 statement of cash flows, using prevailing RUB/USD rates on the payment dates.

On 10 June 2016, the Annual General shareholders’ meeting declared dividends for the year ended 31 December 2015 in the amount of RUB 230.14 (USD 3.69) per share with the total amount of USD 571 million (including USD 4 million in respect of Treasury shares). The dividends were paid to the shareholders in July 2016 in the amount of USD 567 million recognised in the consolidated statement of cash flows, using prevailing RUB/USD rates on the payment dates.

On 19 December 2015, the Extraordinary General shareholders’ meeting declared dividends in respect of the 9 months ended 30 September 2015 in the amount of RUB 321.95 (USD 4.38) per share with the total amount of USD 744 million (including USD 6 million in respect of Treasury shares). The dividends were paid to the shareholders in January 2016 in the amount of USD 665 million recognised in the consolidated statement of cash flows, using prevailing RUB/USD rates on the payment dates.

28. Related parties transactions and outstanding balances

Related parties include major shareholders, associates and entities under common ownership and control of the Group's major shareholders 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 Group 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.

<table>
<thead>
<tr>
<th>Entities under ownership and control of the Group’s major shareholders</th>
<th>For the year ended</th>
<th>For the year ended</th>
<th>For the year ended</th>
<th>For the year ended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31 December 2017</td>
<td>31 December 2016</td>
<td>31 December 2017</td>
<td>31 December 2016</td>
</tr>
<tr>
<td>Joint operation of the Group</td>
<td>270</td>
<td>13</td>
<td>115</td>
<td>57</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>293</td>
<td>14</td>
<td>128</td>
<td>62</td>
</tr>
</tbody>
</table>

29. Commitments

Capital commitments

At 31 December 2017, contractual capital commitments amounted to USD 807 million (31 December 2016: USD 1,138 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 2066. According to the terms of lease agreements the rent rate is revised annually subject to the decision of the relevant local authorities. The Group entities have a renewal option at the end of the lease period and an option to buy land at any time, at a price established by the local authorities.

Future minimum lease payments due under non-cancellable operating lease agreements for land and buildings were as follows:

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due within one year</td>
<td>36</td>
</tr>
<tr>
<td>From one to five years</td>
<td>103</td>
</tr>
<tr>
<td>Thereafter</td>
<td>118</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>277</td>
</tr>
</tbody>
</table>

At 31 December 2017, ten aircraft lease agreements (31 December 2016: ten) were in effect. The lease agreements have an average lease term of seven (31 December 2016: five) years with a renewal option at the end of the term and 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:

<table>
<thead>
<tr>
<th>Due within one year</th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38</td>
<td>45</td>
</tr>
<tr>
<td>From one to five years</td>
<td>97</td>
<td>70</td>
</tr>
<tr>
<td>Thereafter</td>
<td>18</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153</strong></td>
<td><strong>113</strong></td>
</tr>
</tbody>
</table>

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 2017 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 2017, total claims under unresolved litigation amounted to approximately USD 25 million (31 December 2016: 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 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 2015, 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.

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 proportion 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 raised the Company’s rating from Ba3 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.

Risk management is carried out by financial risk management. 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 Group’s sensitivity to a 2 percentage points increase in those borrowings subject to a floating rate. The sensitivity analysis is prepared assuming that the amount of liabilities at floating rates outstanding at the reporting date was outstanding for the whole year.

<table>
<thead>
<tr>
<th>2% LIBOR INCREASE impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the year ended 31 December 2017</td>
</tr>
<tr>
<td>Loss</td>
</tr>
</tbody>
</table>

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 2017 and 31 December 2016 were as follows:

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKD</td>
<td>USD</td>
<td>USD</td>
</tr>
<tr>
<td>Other currencies</td>
<td>USD</td>
<td>USD</td>
</tr>
<tr>
<td>Turnover USD million</td>
<td>At 31 December 2016</td>
<td>For the year ended 31 December 2016</td>
</tr>
<tr>
<td>HKD</td>
<td>263</td>
<td>61</td>
</tr>
</tbody>
</table>

Appendixes

Consolidated financial statements

Trade receivables

Largest customer

Company A 66
Company B 41
Company C 23
Company D 18
Company E 15
Total 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:

<table>
<thead>
<tr>
<th>For the year ended 31 December 2017</th>
<th>For the year ended 31 December 2016</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Largest customer</td>
<td>1,378</td>
<td>14</td>
</tr>
<tr>
<td>Next 5 largest customers</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>4,255</td>
<td>43</td>
</tr>
<tr>
<td>Remaining customers</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>5,994</td>
<td>57</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>At 31 December 2017</th>
<th>At 31 December 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
<td>852 3,325</td>
</tr>
<tr>
<td>Loans, trade and other receivables</td>
<td>516 355</td>
</tr>
<tr>
<td>Irrevocable letters of credit</td>
<td>246 101</td>
</tr>
<tr>
<td>Bank deposits</td>
<td>56 10</td>
</tr>
</tbody>
</table>

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 and quarterly budgeting procedures.
The following table contains the maturity profile of the Group’s borrowings (maturity profiles for other liabilities are presented in note 26) based on contractual undiscounted payments, including interest:

<table>
<thead>
<tr>
<th></th>
<th>At 31 December 2017</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Due within one month</td>
<td>Due from one to three months</td>
<td>Due from three to twelve months</td>
<td>Due in the second year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due in the third year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due in the fourth year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due in the fifth year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due thereafter</td>
</tr>
<tr>
<td>Fixed rate bank loans and borrowings</td>
<td></td>
<td>5,588</td>
<td>1</td>
<td>1</td>
<td>766</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td>6</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>1,049</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,269</td>
</tr>
<tr>
<td>Interest</td>
<td>1,919</td>
<td>36</td>
<td>239</td>
<td>258</td>
<td>257</td>
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<tr>
<td></td>
<td>10,199</td>
<td>37</td>
<td>1,005</td>
<td>264</td>
<td>1,245</td>
</tr>
<tr>
<td></td>
<td>1,686</td>
<td>1,691</td>
<td>1,939</td>
<td>1,765</td>
<td>2,011</td>
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<tr>
<td>Floating rate bank loans and borrowings</td>
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<td>6,775</td>
<td>1</td>
<td>37</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed rate bank loans and borrowings</td>
<td></td>
<td>3,510</td>
<td>9</td>
<td>–</td>
<td>–</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>–</td>
</tr>
<tr>
<td>Interest</td>
<td>245</td>
<td>5</td>
<td>31</td>
<td>66</td>
<td>52</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>1,048</td>
</tr>
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<td></td>
<td></td>
<td>1,061</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>828</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>470</td>
</tr>
<tr>
<td>Total</td>
<td>10,531</td>
<td>15</td>
<td>45</td>
<td>1,065</td>
<td>1,064</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,293</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>2,298</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>2,440</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,789</td>
</tr>
<tr>
<td>Floating rate bank loans and borrowings</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fixed rate bank loans and borrowings</td>
<td></td>
<td>4,991</td>
<td>–</td>
<td>–</td>
<td>5</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>74</td>
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<tr>
<td>Interest</td>
<td>1,983</td>
<td>76</td>
<td>357</td>
<td>477</td>
<td>394</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>366</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>1,048</td>
</tr>
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<td></td>
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<td>1,061</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>470</td>
</tr>
<tr>
<td>Floating rate bank loans and borrowings</td>
<td></td>
<td>6,876</td>
<td>76</td>
<td>362</td>
<td>1,168</td>
</tr>
<tr>
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<td>1,062</td>
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<td>1,654</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>1,113</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>1,453</td>
</tr>
<tr>
<td>Total</td>
<td>10,867</td>
<td>15</td>
<td>45</td>
<td>1,065</td>
<td>1,064</td>
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<td>2,293</td>
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<td></td>
<td>2,298</td>
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<td>2,440</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,789</td>
</tr>
</tbody>
</table>

At 31 December 2017 the Group had available financing facilities for the management of its day to day liquidity requirements of USD 3,554 million (31 December 2016: USD 2,622 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), short-term accounts receivable and payable approximates to their fair value.

Certain financial instruments such as other financial assets and finance leases obligations, were excluded from fair value analysis either due to their insignificance or due to the fact that assets were acquired or liabilities were assumed close to the reporting dates and management believes that their carrying value either approximates to their fair value or may not significantly differ from each other.

Financial instruments that are measured subsequent to initial recognition at fair value, grouped into Levels 1 to 3 based on the degree to which the fair value is observable as follows:

- Level 1 fair value measurements are those derived from quoted prices (adjusted) 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 presented below is about loans and borrowings, trade and other long-term payables, whose carrying values differ from their fair values.

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 2017 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 2017 was calculated based on the present value of future cash flows, discounted at the best management estimation of market rates.

33. Investments in significant subsidiaries and associates

Subsidiaries by business segments | Country | Nature of business | Effective % held |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Group GMK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JSC “Norilsky Komzbim”</td>
<td>Russian Federation</td>
<td>Rental of equipment</td>
<td>100</td>
</tr>
<tr>
<td>JSC “Taimyrgez”</td>
<td>Russian Federation</td>
<td>Gas extraction</td>
<td>100</td>
</tr>
<tr>
<td>JSC “Norilskazprom”</td>
<td>Russian Federation</td>
<td>Gas extraction</td>
<td>100</td>
</tr>
<tr>
<td>JSC “Taimynergo”</td>
<td>Russian Federation</td>
<td>Rental of equipment</td>
<td>100</td>
</tr>
<tr>
<td>JSC “NTEK”</td>
<td>Russian Federation</td>
<td>Electricity production and distribution</td>
<td>100</td>
</tr>
<tr>
<td>LLC “25CL”</td>
<td>Russian Federation</td>
<td>Construction</td>
<td>100</td>
</tr>
<tr>
<td>LLC “Nordpolrechn”</td>
<td>Russian Federation</td>
<td>Repairs</td>
<td>100</td>
</tr>
<tr>
<td>LLC “Norkolgeologiya”</td>
<td>Russian Federation</td>
<td>Geological works</td>
<td>100</td>
</tr>
<tr>
<td>LLC “Norkolshergidroekologiya complex”</td>
<td>Russian Federation</td>
<td>Production of spare parts</td>
<td>100</td>
</tr>
<tr>
<td>Group KGMK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JSC “Khibiny GMK”</td>
<td>Russian Federation</td>
<td>Mining and Metallurgy</td>
<td>100</td>
</tr>
<tr>
<td>LLC “Pechengstroy”</td>
<td>Russian Federation</td>
<td>Repairs</td>
<td>100</td>
</tr>
<tr>
<td>Norilsk Nickel Harjavalta OY</td>
<td>Finland</td>
<td>Metallurgy</td>
<td>100</td>
</tr>
<tr>
<td>Other metallurgical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LLC “GRK “Bystrinskoye”</td>
<td>Russian Federation</td>
<td>Mining</td>
<td>50.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>89.33</td>
</tr>
</tbody>
</table>

The following table contains the maturity profile of the Group’s borrowings (maturity profiles for other liabilities are presented in note 26) based on contractual undiscounted payments, including interest:
Appendixes • Consolidated financial statements

Subsidiaries by business segments

<table>
<thead>
<tr>
<th>Country</th>
<th>Nature of business</th>
<th>Non-Met. % Held</th>
<th>Met. % Held</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other non-metallurgical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal Trade Overseas A.G.</td>
<td>Switzerland</td>
<td>Distribution</td>
<td>100</td>
</tr>
<tr>
<td>LLC “Institut Gypronickel”</td>
<td>Russian Federation</td>
<td>Research</td>
<td>100</td>
</tr>
<tr>
<td>JSC “TTK”</td>
<td>Russian Federation</td>
<td>Supplier of fuel</td>
<td>100</td>
</tr>
<tr>
<td>JSC “Enisey River Shipping Company”</td>
<td>Russian Federation</td>
<td>River shipping operations</td>
<td>100</td>
</tr>
<tr>
<td>LLC “Aeroport Norilsk”</td>
<td>Russian Federation</td>
<td>Airport</td>
<td>100</td>
</tr>
<tr>
<td>JSC “AK “NordStar””</td>
<td>Russian Federation</td>
<td>Aircompany</td>
<td>100</td>
</tr>
</tbody>
</table>

Other metallurgical

Joint operations by business segments

<table>
<thead>
<tr>
<th>Country</th>
<th>Nature of business</th>
<th>Non-Met. % Held</th>
<th>Met. % Held</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niornick Nickel Mine</td>
<td>Republic of South Africa</td>
<td>Mining</td>
<td>50</td>
</tr>
</tbody>
</table>

34. Events subsequent to the reporting date

In January 2018 the Company borrowed the second tranche in the amount of USD 1,100 million under the USD 2,500 million syndicated loan, signed in December 2017 with the syndicate of international financial institutions. The existing facility has been fully drawn down.

In January 2018 the Company made an early repayment of USD 120 million under the bilateral credit facility with JSC “Nordea Bank” with the total credit limit of USD 220 million.

In February 2018 the Group signed a metals sales agreement with Societe Generale under terms of USD 300 million prepayment.

During January and February 2018 the Company signed two confirmed credit lines with PJSC VTB Bank and JSC Gasprombank in the amount of RUB 30 billion and RUB 20 billion accordingly and an unconfirmed credit line facility with JSC Gasprombank in the amount of RUB 20 billion. At the publication date there was no draw-down under these facilities.

The Group Structure: main assets

The Group’s assets can be divided into the following categories:

- Mining and Metallurgical assets
- Geological exploration assets
- Energy assets
- Transport assets
- Research assets
- Supporting business
- Sales and distribution assets

Polar Division

Norilskgeologiya (100% stake) Norilskenergo Division PolarTransport Division Institute Gypronickel complex (100% stake) NORMETIMPEX (100% stake)

Metal Trade Overseas A. G. (Switzerland, 100% stake)

Nkomati Nickel Mine Republic of South Africa Mining 50 50

Kola MMC (100% stake) NTK (100% stake) Anhangbeks Transport Division Norilsk Nickel Europe Limited (UK, 100% stake)

GRK “Brotninkoya” (50.01% stake) Norilskgasprom (100% stake) Krasnyyey Port Transport Division Puchenggao (100% stake)

Norilsk Nickel Handover (Finland, 100% stake) Taimyrmed (100% stake) Bydneys Transport Division Norilsk Nickel – Shared Services Centre (100% stake)

Norilsk-Nickel Mine (5A, 50% stake) TTK (100% stake) Yenisey River Shipping Company (83.93% stake) Norilsk Nickel USA Inc. (USA, 100% stake)

Norilsk Nickel – Shared Services Centre (100% stake)

Nornickel – Shared Services Centre (100% stake)

Norilsk Nickel (Chine, 100% stake)

*Ownership in subsidiaries are indicated from the authorized capital*
## History of production indicators

The following table presents the saleable metals production data for Norilsk Nickel Group, including the details for each division and subsidiary:

<table>
<thead>
<tr>
<th>Year</th>
<th>Nickel, t</th>
<th>Copper, t</th>
<th>Palladium, koz</th>
<th>Platinum, koz</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>297,943</td>
<td>417,861</td>
<td>2,807</td>
<td>656</td>
</tr>
<tr>
<td>2009</td>
<td>279,889</td>
<td>400,778</td>
<td>2,794</td>
<td>67,393</td>
</tr>
<tr>
<td>2010</td>
<td>295,840</td>
<td>388,027</td>
<td>3,018</td>
<td>60,322</td>
</tr>
<tr>
<td>2011</td>
<td>295,098</td>
<td>377,944</td>
<td>2,742</td>
<td>60,922</td>
</tr>
<tr>
<td>2012</td>
<td>300,340</td>
<td>363,764</td>
<td>2,732</td>
<td>69,183</td>
</tr>
<tr>
<td>2013</td>
<td>285,292</td>
<td>371,063</td>
<td>2,662</td>
<td>65,008</td>
</tr>
<tr>
<td>2014</td>
<td>274,248</td>
<td>368,008</td>
<td>2,525</td>
<td>68,426</td>
</tr>
<tr>
<td>2015</td>
<td>266,406</td>
<td>360,207</td>
<td>2,525</td>
<td>369,428</td>
</tr>
<tr>
<td>2016</td>
<td>235,749</td>
<td>401,081</td>
<td>2,656</td>
<td>348,442</td>
</tr>
<tr>
<td>2017</td>
<td>217,112</td>
<td>397,774</td>
<td>2,660</td>
<td>397,774</td>
</tr>
</tbody>
</table>

### Norilsk Nickel Group saleable metals production

<table>
<thead>
<tr>
<th>Year</th>
<th>Nickel, t</th>
<th>Copper, t</th>
<th>Palladium, koz</th>
<th>Platinum, koz</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>122,000</td>
<td>338,511</td>
<td>2,054</td>
<td>509</td>
</tr>
<tr>
<td>2009</td>
<td>124,250</td>
<td>323,705</td>
<td>110,302</td>
<td>505</td>
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<tr>
<td>2010</td>
<td>124,200</td>
<td>309,320</td>
<td>110,318</td>
<td>529</td>
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<td>2011</td>
<td>124,000</td>
<td>303,940</td>
<td>113,227</td>
<td>536</td>
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<tr>
<td>2012</td>
<td>122,700</td>
<td>295,610</td>
<td>110,906</td>
<td>529</td>
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<td>2013</td>
<td>119,048</td>
<td>297,552</td>
<td>109,362</td>
<td>514</td>
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<td>2014</td>
<td>123,100</td>
<td>292,632</td>
<td>106,048</td>
<td>514</td>
</tr>
<tr>
<td>2015</td>
<td>121,315</td>
<td>280,347</td>
<td>104,048</td>
<td>509,385</td>
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<tr>
<td>2016</td>
<td>157,396</td>
<td>739,640</td>
<td>126,335</td>
<td>509,385</td>
</tr>
<tr>
<td>2017</td>
<td>397,774</td>
<td>739,640</td>
<td>126,335</td>
<td>509,385</td>
</tr>
</tbody>
</table>

1. The sale of the asset was closed on April 2, 2015.
2. The company is in the process of divestment.
3. Metal in concentrate for sale assuming 50% ownership. Nkomati’s performance is reflected in financial results using proportional consolidation according to our stake and not reflected in other totals.
### Minerals reserves and resources

<table>
<thead>
<tr>
<th>Region, deposit, ore type</th>
<th>Metal grade</th>
<th>Contained metal</th>
<th>Metal grade</th>
<th>Contained metal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ore kt</td>
<td>Co %</td>
<td>%</td>
<td>Cu %</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TAIMYR PENINSULA</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Proven reserves</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talnakh ore field, including:</td>
<td>331,796</td>
<td>0.78</td>
<td>1.56</td>
<td>3.91</td>
</tr>
<tr>
<td>Rich</td>
<td>84,821</td>
<td>0.8</td>
<td>2.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Cupro-argillite</td>
<td>268,975</td>
<td>0.36</td>
<td>0.96</td>
<td>2.8</td>
</tr>
<tr>
<td>Disseminated</td>
<td>270,975</td>
<td>0.4</td>
<td>1.8</td>
<td>4.7</td>
</tr>
<tr>
<td>Norilsk-1 deposit (disseminated ore)</td>
<td>22,353</td>
<td>0.35</td>
<td>0.51</td>
<td>1.97</td>
</tr>
<tr>
<td><strong>Probable reserves</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talnakh ore field</td>
<td>131,942</td>
<td>1.19</td>
<td>1.96</td>
<td>4.24</td>
</tr>
<tr>
<td>Rich</td>
<td>33,912</td>
<td>0.52</td>
<td>0.75</td>
<td>1.9</td>
</tr>
<tr>
<td>Cupro-argillite</td>
<td>98,030</td>
<td>0.38</td>
<td>1.2</td>
<td>3.5</td>
</tr>
<tr>
<td>Disseminated</td>
<td>170,933</td>
<td>0.46</td>
<td>0.88</td>
<td>2.6</td>
</tr>
<tr>
<td>Norilsk-1 deposit (disseminated ore)</td>
<td>21,688</td>
<td>0.28</td>
<td>0.37</td>
<td>4.3</td>
</tr>
<tr>
<td>Measured and indicated resources</td>
<td>1,744,381</td>
<td>0.70</td>
<td>1.32</td>
<td>3.57</td>
</tr>
<tr>
<td>Talnakh ore field</td>
<td>1,569,469</td>
<td>0.74</td>
<td>1.41</td>
<td>3.96</td>
</tr>
<tr>
<td>Rich</td>
<td>151,466</td>
<td>0.32</td>
<td>2.3</td>
<td>7.8</td>
</tr>
<tr>
<td>Cupro-argillite</td>
<td>68,345</td>
<td>1</td>
<td>1.3</td>
<td>4.2</td>
</tr>
<tr>
<td>Disseminated</td>
<td>1,382,658</td>
<td>0.52</td>
<td>1.03</td>
<td>2.89</td>
</tr>
<tr>
<td>Norilsk-1 deposit (disseminated ore)</td>
<td>147,912</td>
<td>0.3</td>
<td>0.38</td>
<td>3.7</td>
</tr>
<tr>
<td>Inferred resources</td>
<td>445,642</td>
<td>0.86</td>
<td>1.75</td>
<td>4.24</td>
</tr>
<tr>
<td>Talnakh ore field</td>
<td>444,574</td>
<td>0.87</td>
<td>1.75</td>
<td>4.24</td>
</tr>
<tr>
<td>Norilsk-1 deposit</td>
<td>1,068</td>
<td>0.28</td>
<td>0.32</td>
<td>3.6</td>
</tr>
</tbody>
</table>

**KOLA PENINSULA (DISSEMINATED OR)***

<table>
<thead>
<tr>
<th>Region, deposit, ore type</th>
<th>Metal grade</th>
<th>Contained metal</th>
<th>Metal grade</th>
<th>Contained metal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ore kt</td>
<td>Co %</td>
<td>%</td>
<td>Cu %</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proven and probable reserves</strong></td>
<td>125,353</td>
<td>0.58</td>
<td>0.29</td>
<td>0.02</td>
</tr>
<tr>
<td>Proven reserves</td>
<td>125,353</td>
<td>0.58</td>
<td>0.29</td>
<td>0.02</td>
</tr>
<tr>
<td>Measured and indicated resources</td>
<td>332,923</td>
<td>0.69</td>
<td>0.33</td>
<td>0.05</td>
</tr>
<tr>
<td>Inferred resources</td>
<td>137,502</td>
<td>0.63</td>
<td>0.31</td>
<td>0.03</td>
</tr>
</tbody>
</table>

**Appendixes**

- Data regarding the reserves and resources is based on the balance-sheet reserves of A, B, С1 and С2, categories (according to the terminology of the State Committee for Mineral Resources).
- 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).
- Proven and probable ore reserves are included in mineral resources.
- The six platinum group metals (PGMs) are platinum, palladium, rhodium, ruthenium, osmium, and iridium. The 4PGMs are rhodium, ruthenium, osmium, and iridium.
- Hereafter in the annual report, troy ounces are used as a weight measure for PGMS and gold.
Report on compliance with the principles and recommendations set forth in the corporate governance code

This report on compliance with the principles and recommendations set forth in the Corporate Governance Code was reviewed by the Board of Directors of MMC Norilsk Nickel at the meeting held on May 24, 2018 Minutes No. G.KW/18-p-19d.

The Board of Directors confirms that information in this report is a true and accurate reflection of the Company’s compliance with the principles and recommendations set forth in the Corporate Governance Code in 2017.

1.1.1 The company provides its shareholders with maximum opportunities to participate in the general meeting, make grounded decisions, coordinate activities, and express opinions regarding the agenda of the general meeting.

<table>
<thead>
<tr>
<th>№</th>
<th>Corporate governance principles</th>
<th>Compliance assessment criteria</th>
<th>Compliance status</th>
<th>Explanation of non-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Everyone has free access to an internal document that was approved by the general meeting of shareholders and sets out the procedure for holding such meetings.</td>
<td>1. Everyone has free access to an internal document that was approved by the general meeting of shareholders and sets out the procedure for holding such meetings.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The company provides its shareholders with multiple communication channels, including hotline, email and online forum, to express opinions and make questions about the agenda during the preparation for the general meeting. These channels were established in the lead-up to each general meeting held in the reporting period.</td>
<td>2. The company provides its shareholders with multiple communication channels, including hotline, email and online forum, to express opinions and make questions about the agenda during the preparation for the general meeting.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>1.1.2 The company developed and disclosed its dividend policy approved by the board of directors before and during the annual general meeting.</td>
<td>1. When general meetings of shareholders in the reporting period were held as physical meetings (requiring joint attendance of shareholders), sufficient time was provided to report on, and discuss, items on the agenda.</td>
<td>Partially compliant</td>
<td>The company is partly compliant with Criterion 2. In accordance with the Regulations on the General Meeting of Shareholders of MMC Norilsk Nickel approved by the General Meeting of Shareholders (Minutes No. 1-6 June 2016, nominees to the Board of Directors and the Audit Commission are invited to the meeting. Most nominees are present at the meeting. Questions are made in writing, and answers are sent to shareholders.</td>
<td></td>
</tr>
<tr>
<td>1.1.3 The company provided the entitled shareholders with access to the list of persons who have the right to participate in the general meeting, starting from the date when such list was received by the company, for each general meeting held in the reporting period.</td>
<td>3. The company provided the entitled shareholders with access to the list of persons who have the right to participate in the general meeting, starting from the date when such list was received by the company, for each general meeting held in the reporting period.</td>
<td>Compliant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.4 No unnecessary difficulties prevented shareholders from exercising their rights to convene a general meeting, nominate candidates to executive bodies and propose items for the agenda of the general meeting.</td>
<td>1. In the reporting period, shareholders had an opportunity to put questions to the company’s executive bodies and directors before and during the annual general meeting.</td>
<td>Compliant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.5 Each shareholder had an unrestricted opportunity to exercise their voting right in the simplified and most convenient manner.</td>
<td>2. The company provided the entitled shareholders with access to the list of persons who have the right to participate in the general meeting, starting from the date when such list was received by the company, for each general meeting held in the reporting period.</td>
<td>Compliant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.6 The procedure established by the company ensures the participants at the general meeting equal opportunities to express their opinions and ask questions.</td>
<td>1. An internal document (corporate policy) of the company contains provisions enabling each shareholder present at the general meeting to request, before the end of such meeting, a copy of their voting ballot certified by the counting board.</td>
<td>Compliant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2 Shareholders are given an equal and fair opportunity to have a share in the company’s profits by receiving dividends.</td>
<td>1. The company has developed and disclosed its dividend policy approved by the board of directors.</td>
<td>Compliant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendixes

#### Report on compliance with the principles and recommendations set forth in the corporate governance code

<table>
<thead>
<tr>
<th>Nº</th>
<th>Corporate governance principles</th>
<th>Compliance assessment criteria</th>
<th>Compliance status</th>
<th>Explanation of non-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.3</td>
<td>The company does not decide to pay dividends if meeting formal requirements set out in the applicable laws, such decision is not economically feasible and can be misleading about the company’s financial performance.</td>
<td>1. In the reporting period, the company made no steps that could result in any deterioration of the dividend rights of its existing shareholders.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>1.2.4</td>
<td>The company ensures no deterioration of the dividend rights of its existing shareholders.</td>
<td>In order to rule out the possibility of shareholders receiving any income (profit) from the company other than dividends and liquidation value, internal documents introduce controls enabling the company to timely identify and properly approve transactions with persons affiliated with the company’s key lines of business (related to) substantial shareholders (persons authorised to approve transactions with persons affiliated with the company’s key lines of business).</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>1.3.1</td>
<td>The company has arranged for the fair treatment of each shareholder both in the life of the company and its performance, and submit the results of the management and internal control framework to the shareholders.</td>
<td>In the reporting period, the company reviewed the risks related to implementing and updating the strategy, approving the financial plan (budget), and analyzing performance criteria and indicators (including interim indicators) for the strategy and business plans of the company.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>1.3.2</td>
<td>The company ensures no deterioration of the dividend rights of its existing shareholders.</td>
<td>In the reporting period, the company did not take part in voting procedures in the reporting period.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>1.3.3</td>
<td>Shareholders have reliable and effective ways to register their rights to shares to ensure that any shares can be freely and easily disposed of.</td>
<td>The company and its shareholders are satisfied with the efficiency and reliability of securities registration and transfer procedures.</td>
<td>Compliant</td>
<td></td>
</tr>
</tbody>
</table>

#### Corporate governance principles

**Compliance assessment criteria**

1. The dividend policy of the company sets out clear instructions as to financial/economic circumstances when dividends should not be paid.

2. The board of directors assessed the risk management and internal control framework in the company.

3. The company has included criteria for fair treatment of each shareholder both in the life of the company and its performance.

4. Shareholders have reliable and effective ways to register their rights to shares and an opportunity to dispose of such shares freely and easily.

**Compliance status**

1. The board of directors is responsible for strategic management, defines key principles of, and approaches to, risk management and internal controls, exercises control over the company’s executive bodies, and performs other key functions.

2. The board of directors considered a report (reports) by the company’s sole executive body and collegial executive body on progress in the company’s strategy.

3. The company is partly compliant with Criterion 1.

4. The company is partly compliant with Criterion 2.

5. The company is partly compliant with Criterion 3.

6. The company is partly compliant with Criterion 4.
Appendixes

2.1.5 The board of directors plays a key role in ensuring that the company’s bodies, internal conflicts among the company’s executive bodies, and internal conflicts among the company’s executive bodies are not influenced by the personal business and personal interests of shareholders or the government are not reflected in the company’s executive bodies.

2.1.6 The board of directors plays a key role in ensuring that the company’s executive bodies, internal conflicts among the company’s executive bodies, and internal conflicts among the company’s executive bodies are not influenced by the personal business and personal interests of shareholders or the government are not reflected in the company’s executive bodies.

2.1.7 The board of directors plays a key role in ensuring that the company’s executive bodies, internal conflicts among the company’s executive bodies, and internal conflicts among the company’s executive bodies are not influenced by the personal business and personal interests of shareholders or the government are not reflected in the company’s executive bodies.

2.2 The board of directors is accountable to the company’s shareholders.

2.2.1 Information about the activities of the board of directors is disclosed to shareholders.

2.2.2 The chairman of the board of directors is elected by the company’s shareholders.

1. The board of directors approved and put into action a policy (procedures) on remuneration and reimbursements (compensation) due to directors, executives, and other key managers of the company.

2. In the reporting period, the board of directors considered matters related to the above policy (procedures) in its meetings.

The company is partly compliant with Criterion 1.

The company is partly compliant with Criterion 2.

The company is partly compliant with Criterion 1.

The board of directors approved and put into action the Remuneration Policy for Members of Board of Directors of MMC Norilsk Nickel. Principles and mechanics of remunerations (reimbursements) due to executives are set out in the Charter, Regulations on the Management Board, and other internal documents of the Company.

The board of directors approved an information policy (policies) on remuneration and reimbursements (compensation) due to directors, executives, other key managers, and other key managers of the company. The company is partly compliant with Criterion 1.

The board of directors approved and put into action the Remuneration Policy for Members of Board of Directors of MMC Norilsk Nickel. Principles and mechanics of remunerations (reimbursements) due to executives are set out in the Charter, Regulations on the Management Board, and other internal documents of the Company.

The board of directors is an efficient and competent management body capable of making fair and independent judgements and decisions in line with the interests of the company and its shareholders.

2.3.1 The board of directors is an efficient and competent management body capable of making fair and independent judgements and decisions in line with the interests of the company and its shareholders.

2.3.2 Directors are elected in a transparent manner that provides shareholders with sufficient information on nominees to get a clear idea of their personal and professional skills.

2.3.3 Directors are elected in a transparent manner that provides shareholders with sufficient information on nominees to get a clear idea of their personal and professional skills.

2.3.4 The number of directors on the board of directors makes it possible to organize its activities in the most efficient manner and form committees, and enables substantial minority shareholders to elect a director for whom they vote.

2.3.5 The board of directors is well balanced in terms of qualifications, experience, knowledge and business skills of its members, and is trusted by the company’s shareholders.

1. The procedure used in the company to assess performance of the board of directors includes assessment of professional qualifications of individual directors.

2. In the reporting period, the board of directors (or its nomination committee) assessed the board of directors’ nominees for the necessary experience, knowledge, business reputation, potential conflicts of interests, etc.

2.3.6 The board of directors is well balanced in terms of qualifications, experience, knowledge and business skills of its members, and is trusted by the company’s shareholders.

1. As part of the performance assessment of the board of directors in the reporting period, the board of directors assessed its needs for professional and business skills and experience.

2. As part of the performance assessment of the board of directors in the reporting period, the board of directors assessed its needs for professional and business skills and experience.

2.4.1 An independent director is a person with professional expertise, experience and independence sufficient to have their own opinions and make fair and unbiased judgements that are not influenced by the company’s executive bodies, shareholder groups, or other stakeholders. Nominees (elected directors) related to the company, any of its substantial shareholders, competitors or competitors or the government are not normally considered an independent director.

1. The procedure used in the company to assess performance of the board of directors includes assessment of professional qualifications of individual directors.

2. In the reporting period, the board of directors (or its nomination committee) assessed the board of directors’ nominees for the necessary experience, knowledge, business reputation, potential conflicts of interests, etc.

2.4.2 The board of directors has a sufficient number of independent directors.

1. In the reporting period, all independent directors met all independence criteria specified in Recommendations 102–107 of the Code and were recognised as independent by the board of directors.

2. In the reporting period, all independent directors met all independence criteria specified in Recommendations 102–107 of the Code and were recognised as independent by the board of directors.
### Corporate Governance Principles

<table>
<thead>
<tr>
<th>№</th>
<th>Corporate Governance Principle</th>
<th>Compliance Assessment Criteria</th>
<th>Compliance Status</th>
<th>Explanation of Non-Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4.1</td>
<td>Names for the board of directors are assessed for compliance with independence criteria; compliance of the current independent directors is reviewed on a regular basis. Substance of such assessment should prevail over form.</td>
<td>1. In the reporting period, the board of directors (or its nomination committee) formalized an opinion about the independence of each nominee in the board of directors and presented it to the company's shareholders. 2. At least once in the reporting period, the board of directors (or its nomination committee) assessed independence of the current directors who were identified as independent in the annual report. 3. The company developed measures to be taken by directors who cease to be independent, including obligations to timely inform the board of directors of such change in their status.</td>
<td>Fully compliant</td>
<td>The Company is fully compliant with Criteria 2. In the lead-up to the Annual General Meeting of Shareholders in April 2017, 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 independence criteria. The current directors on the Board were elected during the Annual General Meeting on 9 June 2017. According to the Charter of the Company, “if the election of an Independent Director to the Board of Directors such director ceases to be an independent director due to any changes or new circumstances, such director shall promptly notify the Board of Directors thereof (through the Corporate Secretary) in writing and give a detailed account of all such changes and new circumstances”.</td>
</tr>
<tr>
<td>2.4.2</td>
<td>Independent directors make up at least one-third of the elected board members.</td>
<td>1. Independent directors make up at least one-third of the board members.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2.4.3</td>
<td>Independent directors play a key role in preventing internal conflicts and making material corporate actions by the company.</td>
<td>1. Independent directors (those who have no conflicts of interest) pre-estimate material corporate actions related to potential conflicts of interest, with the estimates then presented to the board of directors.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>The chairman of the board of directors arranges for its functions to be performed in the most efficient manner.</td>
<td>1. The chairman of the board of directors is an independent director, or independent directors have appointed a senior independent director who coordinates the work of independent directors and interacts with the chairman of the board of directors. 2. Functions, rights and responsibilities of the chairman of the board of directors (or the senior independent director, when applicable) are properly defined in internal documents of the company. 3. The chairman of the board of directors was performance assessed in the reporting period.</td>
<td>Compliant</td>
<td>The Chairman of the Board of Directors is an independent director. The Company believes that to fully meet best global practices. The Independent Chairman of the Board of Directors of the Company ensures the most efficient interaction between the Board of Directors, shareholders and other stakeholders.</td>
</tr>
<tr>
<td>2.5.1</td>
<td>The elected chairman of the board of directors is an independent director, or independent directors have appointed a senior independent director who coordinates the work of independent directors and interacts with the chairman of the board of directors.</td>
<td>1. Performance of the chairman of the board of directors was assessed as part of the board of directors’ performance assessment in the reporting period.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2.5.2</td>
<td>Independent directors play a key role in preventing internal conflicts and making material corporate actions by the company.</td>
<td>1. The responsibility of the chairman of the board of directors to timely provide other directors with information required to make decisions on the agenda.</td>
<td>Compliant</td>
<td></td>
</tr>
</tbody>
</table>

### Compliance Assessment Criteria

- **Compliance**: The criteria are fully met.
- **Non-Compliance**: The criteria are not met.
- **Explanation of Non-Compliance**: A detailed explanation of why the criteria were not met.

---

### Corporate Governance Assessment

#### 2.6 Directors are sufficiently informed and act reasonably and in good faith in the interests of the company and its shareholders, prudently and with due care.

<table>
<thead>
<tr>
<th>№</th>
<th>Corporate Governance Principle</th>
<th>Compliance Assessment Criteria</th>
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<th>Explanation of Non-Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6.1</td>
<td>Directors of the company make decisions on the basis of all available information, subject to no conflict of interest, equal treatment of shareholders and usual business risk.</td>
<td>1. Internal documents of the company require that any director Compliant informs the board of directors if a conflict of interest arises with regard to any item on the agenda of the board of directors or its committee before discussions of such item begins. 2. Internal documents of the company require that a director who has a conflict of interest refrain from voting on the respective item. 3. The company has an established procedure for the board of directors to seek professional advice on the matters within its remit at the company’s expense.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2.6.2</td>
<td>Rights and obligations of the directors are clearly set out in internal documents of the company.</td>
<td>1. The company approved and published an internal document Compliant clearly defining the directors’ rights and obligations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6.3</td>
<td>Directors are given sufficient time to perform their duties.</td>
<td>1. Individual attendance at the meeting of the board of directors and committees and time spent to prepare for such meetings were taken into account in the board of directors’ performance assessment during the reporting period. 2. In accordance with internal documents of the company, directors must inform the board of directors of their decision to be appointed to management bodies of other organizations (except for subsidiaries and affiliates of the company) and of such appointments.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2.6.4</td>
<td>All directors have equal access to the documents and data of the company. Newly-elected directors are provided with sufficient information about the company and activities of the board of directors within the shortest time possible.</td>
<td>1. In accordance with internal documents of the company, directors have the right to access documents and make request regarding the company and its subsidiaries, and executives bodies of the company must provide such information and documents. 2. The company has an established induction procedure for newly-elected directors.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>Preparations for, and attendance at, the meetings of the board of directors ensure efficient operations of the board of directors.</td>
<td>1. The board of directors held at least six meetings during the reporting period.</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>2.7.1</td>
<td>Meetings of the board of directors are held when necessary, subject to the scale of operations and goals of the company in a certain period of time.</td>
<td>1. The company holds at least six meetings during the reporting period.</td>
<td>Compliant</td>
<td></td>
</tr>
</tbody>
</table>
Appendices → Report on compliance with the principles and recommendations set forth in the corporate governance code

1. The company’s internal documents stipulate the procedure to prepare for and hold meetings of the board of directors so that directors have an opportunity to make proper preparations.

2. The charter or another internal document of the company requires the most important matters (listed in Recommendation 168 of the Code) to be discussed at meetings held in person.

3. The charter of the company requires that decisions on the most important matters listed in Recommendation 170 of the Code are made at a meeting of the board of directors by qualified majority (at least three fourths of votes) or by majority of all elected directors.

4. The charter of the company requires that the meetings of the board of directors be held at least once a year.

5. The charter of the company requires that the meetings of the board of directors be held in person.

6. The charter or another internal document of the company set out responsibilities described in Recommendation 168 of the Code.

7. The charter or another internal document of the company set out responsibilities described in Recommendation 170 of the Code.

8. The company’s internal documents set up the audit committee made up of independent directors only.

9. The charter of the company requires that decisions on the most important matters listed in Recommendation 170 of the Code are made at a meeting of the board of directors by qualified majority (at least three fourths of votes) or by majority of all elected directors.

10. The company’s internal documents set up the audit committee made up of independent directors only.

11. The charter or another internal document of the company set out responsibilities described in Recommendation 168 of the Code.

12. The charter of the company requires that decisions on the most important matters listed in Recommendation 170 of the Code are made at a meeting of the board of directors by qualified majority (at least three fourths of votes) or by majority of all elected directors.

13. The charter or another internal document of the company set out responsibilities described in Recommendation 168 of the Code.

14. The company’s internal documents set up the audit committee made up of independent directors only.

15. The charter or another internal document of the company set out responsibilities described in Recommendation 168 of the Code.

16. The charter or another internal document of the company set out responsibilities described in Recommendation 170 of the Code.
### Corporate Governance Principles

<table>
<thead>
<tr>
<th>No.</th>
<th>Compliance assessment criteria</th>
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<tbody>
<tr>
<td>2.8.3</td>
<td>A nomination (appointment, HR) committee whose members are mostly independent directors is set up for preliminary consideration of any matters related to HR planning (succession planning), expertise and performance of the board of directors.</td>
<td>Partially compliant</td>
<td>The company is partly compliant with Criterion 2. The Regulations on the Corporate Governance, Nomination and Remuneration Committee of the Board of Directors of MMC Norilsk Nickel define the same responsibilities as laid down in Recommendation 186 of the Code, except for Item 2, which states that shareholders should not be restricted to major shareholders only in nominating candidates to the Board of Directors; such contacts should be aimed at forming a board that will most fully meet the goals and objectives of the company. Additional committees were either formed or recognized as unnecessary (strategy committee, corporate governance committee, ethics committee, risk management committee, budget committee, HSE committee, etc.).</td>
</tr>
</tbody>
</table>

### Compliance Assessment Criteria

1. The board of directors set up a nomination committee for its responsibilities specified in Recommendation 186 of the Code and performed its functions, including the responsibilities described in Recommendation 186 of the Code.

2. The company defined the duties and responsibilities of the nomination committee (or another committee performing its functions), including the responsibilities described in Recommendation 186 of the Code.

### Results of the self-assessment and external assessment of the board of directors, committees and individual members

1. The board of directors collected information on the work of the board of directors, committees and individual members and considered it at the board meeting held in person.

2. The board of directors analyzed its work in the reporting period, self-assessment of the Board of Directors included information on the performance of committees, individual directors, the board of directors in general.

### Explanation of non-compliance

**Compliant** The company set up four committees of the Board of Directors:
- Audit and Sustainable Development Committee;
- Corporate Governance, Nomination and Remuneration Committee;
- Budget Committee;
- Strategy Committee.

**Partly compliant**

- The company is partly compliant with Criterion 1. The Board of Directors of the Company includes four independent directors. The company set up four committees of the Board of Directors, each made up of five persons. According to the regulations on the committees, each committee should include independent directors. If independent directors are elected Chairman of all the committees, their workload will be excessive. For this reason, the Budget Committee and the Strategy Committee are chaired by non-executive directors. The Committees are made up of two independent directors and three non-executive directors.

**Non-compliance**

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4.1.1 Remuneration paid by the company is sufficient to recruit, motivate and retain employees with required competencies and qualifications. Remuneration

3.1.2 The corporate secretary is

3.1 The corporate secretary is a corporate officer whose duties include managing shareholder relations, making necessary arrangements to protect their rank-and-file employees of such corporate officers and between remunerations of and unreasonable gaps necessary remunerations company avoids higher-than-

3.1.1 The corporate secretary

motivation for efficient managers provides sufficient executivess and other key managers of the company is paid in accordance with the remuneration policy adopted by the company.

1. The board of directors approves the appointment and dismissal of, and additional remuneration for, the corporate secretary

1. The company adopted and disclosed a corporate regulation on the corporate secretary

1. The company has skills, expertise and qualifications to perform their duties, has impeccable reputation, and is trusted by shareholders.

1. The corporate secretary is sufficiently independent of the company’s executive bodies and has powers and resources necessary to perform their duties.

1. Remuneration paid by the company is sufficient to recruit, motivate and retain employees with required competencies and qualifications. Remuneration to directors, executives and other key managers of the company is paid in accordance with the remuneration policy adopted by the company.

1. The company adopted an internal document (documents) – remuneration policy (policies) for directors, executives and other key managers – that clearly set out approaches to remuneration of such persons.

1. The company is partly compliant with Criterion 1. The Board of Directors approved and put into action the Remuneration Policy for Members of Board of Directors of MMC Norilsk Nickel.

Partly compliant

Partly compliant

Partly compliant

Partly compliant
4.2.1 The company pays a fixed annual remuneration to its directors. The company does not remunerate directors for attending certain meetings of the board of directors or its committees. The company does not employ any means of short-term remuneration or additional incentives to stimulate its directors.

4.2.2 Long-term ownership of the company’s shares is the best tool to align financial interests of directors with long-term interests of shareholders. At the same time, the right to sell shares is not conditional on achieving certain performance indicators, and directors do not participate in stock option plans.

4.2.3 The company offers no additional remunerations or reimbursements if directors’ powers are terminated early after the change of control over the company or for any other reason.

4.3.1 Remuneration paid to executives and other key managers of the company consists of two reasonably balanced parts: a fixed part and variable part, which depends on the company’s performance and the employee’s personal (individual) contribution thereto. The fixed annual remuneration was the only monetary remuneration paid to directors for sitting on the board in the reporting period.

4.3.2 The company adopted a long-term share-based incentive plan for its executives and other key managers (an option plan or another derivative plan with the company’s shares as an underlying asset). This privilege is explained by exceptional business expertise in the mining industry. The company considered the possibility of introducing an option plan as a long-term incentive for its executives. However, the possibility is restricted by the absence of specific provisions on corporate option plans and relevant matters in the Russian civil and corporate law.

4.3.3 Commissions (golden parachutes) paid by the company to its executives and other key managers in case of early termination of their powers at the company’s initiative (provided there was no fraud on their part) do not exceed two fixed parts of their annual remuneration. Remuneration policy (system) existing in the company does not provide for any additional remunerations or reimbursements in case directors’ powers are terminated early after the change of control over the company or for any other reason.

5.1 The company has an efficient risk management and internal control system in place to provide reasonable assurance that it will achieve the goals set by management.

5.1.1 The board of directors defines principles of, and approaches to, the risk management and internal control system in the company. The board of directors or its committees preliminarily analysed, reviewed and approved the Corporate Governance, Nomination and Remuneration Committee of the Board of Directors. The board of directors (or its committees) determines, on an annual basis, the performance indicators, the right to sell shares or other derivatives used in this plan arises not earlier than three years after such right is granted. The right to sell is also conditional on certain performance indicators.

5.1.2 The company established a procedure to claim bonuses wrongfully received by executives and other key managers of the company. The company adopted a legal mechanism effective enough and can be used regardless of whether it is initiated (by reference or otherwise) into internal documents of the Company.
5.1.3 The risk management and internal control system gives accurate, fast and clear representation of the company’s current affairs and prospects, ensures integrity and transparency of financial statements, as well as rationality and acceptability of the company’s risk appetite.

5.1.4 The board of directors

executes the company’s risk appetite.1

5.2.1 A separate division is functionally accountable to the board of directors or its audit committee, is established in the company to conduct a comprehensive assessment of reliability and efficiency of the risk management and internal control system and corporate management practices.

5.2.2 The internal audit division assesses the efficiency of the internal control, risk management and corporate governance systems. The company applies generally accepted internal audit standards.

1. The board of directors approved an information policy that ensures effective exchange of information between the company, its shareholders, investors, and other stakeholders.

2. The board of directors or any of its committees reviewed matters related to the company’s compliance with its information policy at least once in the reporting period.

5.1.2 Executive bodies of the company establish and maintain an efficient risk management and internal control system in the company.

5.2.2 The internal audit division was assessed in the reporting period as part of internal audit. The company uses generally accepted approaches to internal control and risk management.

6.1 The company and its operations are transparent for shareholders, investors, and other stakeholders.

6.1.2 The company discloses information on its executive bodies, including details on the principles and recommendations set out in the Code.

6.2 The company timely discloses full, accurate and up-to-date information on the company to enable shareholders and investors to make grounded decisions.

6.2.1 The company discloses information on its corporate governance and general principles of corporate governance, including by way of publications on the company’s website.

6.2.2 The company avoids a formal approach to disclosures and does not disclose information about its operations even if such information is not required to be disclosed by law.
### Appendixes

#### 6.2.3 As one of the most important

- The annual report contains information about key operations and financial performance of the company.
- The annual report contains information about environmental and social aspects of the company’s operations.

#### 6.3 Access to information and documents requested by shareholders

- The company provides information and documents requested by the shareholders in accordance with the principle of equal and unhindered accessibility.
- The information policy of the company defines an unhindered procedure of accessing information by shareholders, including information about the company’s subsidiaries at the request of shareholders.

#### 6.2.2 When providing shareholders with information, the company maintains a reasonable balance between the interests of individual shareholders and the interests of the company as the latter strives to keep confidential any sensitive commercial information that may have a material influence on the company’s competitive position.

<table>
<thead>
<tr>
<th>№</th>
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<th>Compliance status</th>
<th>Explanation of non-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.2</td>
<td>As one of the most important information channels for shareholders and other stakeholders, the annual report contains information enabling them to assess annual performance of the company.</td>
<td>The annual report contains information about key operations and financial performance of the company.</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>6.3 Access to information and documents requested by the shareholders</td>
<td>The company does not refuse to provide information request by shareholders in the reporting period, or such refusal were justified.</td>
<td>Completed</td>
<td></td>
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<td>In certain situation defined in the company’s information policy, shareholders are properly informed that information is confidential and undertake to keep it confidential.</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 7.1 Material corporate actions include reorganisation of the company, acquisition of at least 30% of the company’s voting shares (takeover), material transactions entered into by the company, increase or reduction of the company’s authorised capital, listing and delisting of the company’s shares, and other actions which may result in material changes in the rights of shareholders or be against their interests. The company’s charter includes the list of criteria for directors and other persons specified in the law to be recognised as interested in the company’s transactions.

#### 7.1.1 Material corporate actions

- The company’s charter includes the list of criteria for directors and other persons specified in the law to be recognised as interested in the company’s transactions.
- The decision-making procedure recommended in the Code (decision-making by the Board of Directors or the General Meeting of Shareholders, when required by the Charter or law) is followed in material corporate actions.
- Material corporate actions identified as such in the company’s charter include at least the following: reorganisation of the company, acquisition of at least 30% of the company’s voting shares (takeover), material transactions entered into by the company, increase or reduction of the company’s authorised capital, listing or delisting of the company’s shares.

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#### 7.1.2 Material corporate actions

- The company established a procedure for independent directors to express their opinion on material corporate actions prior to approval.
- All material corporate actions in the reporting period were approved before taken.

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#### 7.1.3 When taking material corporate actions affecting the rights and legal interests of shareholders, the company ensures equal conditions for all shareholders of the company and, when legal mechanisms protecting shareholders’ rights are insufficient, arranges for additional protection of rights and legal interests of shareholders. In doing so, the company is guided by both formal legal requirements and corporate governance principles specified in the Code.

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<td>7.1.3</td>
<td>The company’s charter includes the list of criteria for directors and other persons specified in the law to be recognised as interested in the company’s transactions.</td>
<td>Subject to specific operations of the company, its charter provides for more stringent criteria of identifying transactions as material corporate actions than required by law.</td>
<td>Completed</td>
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<td>7.1.3 Material corporate actions</td>
<td>All material corporate actions in the reporting period were approved before taken.</td>
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#### 7.21 Disclosed information about material corporate actions explains reasons, terms and conditions, and consequences of such actions.

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#### 7.1.4 The company hires an independent appraiser to estimate the value of property sold or acquired in a major transaction or related-party transaction.

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#### 7.2.2 Material corporate actions

- The company’s charter includes the list of criteria for directors and other persons specified in the law to be recognised as interested in the company’s transactions.
- The company establishes a procedure for independent directors to express their opinion on material corporate actions prior to approval.
- The company hires an independent appraiser to estimate the value of property sold or acquired in a major transaction or related-party transaction.
- The company provides for an extended list of criteria for directors and other persons specified in the law to be recognised as interested in the company’s transactions.

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Appendixes

Glossary

**Acid leaching.** Leaching with solutions of acids as reagents.

**Agglomerate.** Sintered ore produced as a result of the agglomeration process.

**Agglomeration.** A method for forming relatively large porous blocks (agglomerates) by sintering (roasting) fine or powder ore, where solid particles are joined together by solidifying fusible compounds.

**Anode.** Crude metal (nickel or copper) obtained from anode smelting and fed for electrolytic refining (electrolytrolisis) 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.** An autogenous pyrometallurgical process where ferrous and other detrimental impurities are oxidised and removed as slag to produce blister copper (in copper concentrate smelting) or converter matte (in copper-nickel concentrate smelting).

**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: 0.2–1.5% for nickel, 0.3–2% for copper, and 2–10 g/t for platinum group metals.

**Disseminated ores.** Ores containing 5% to 30% sulphides, with the following metal grades: 0.2–1.5% for copper, 5–50 g/t for platinum group metals and 2–25% for nickel and 5–100 g/t for platinum group metals.

**Drying.** Removal of moisture from concentrates performed in designated drying furnaces (at 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.

**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.

**Leaching.** Selective dissolution of one or several components of the processed solid material in organic solvents or water solutions of inorganic substances.

**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.

**Mineral deposit.** A mass of naturally occurring mineral material (near to the surface or deeper underground) which is economically valuable in terms of quantity, quality and conditions.

**Ore mixture.** A mixture of materials in certain proportions needed to achieve the required chemical composition of the end product. The ore mixture for metallurgical production may include ores, ore concentrates and agglomerates, return slag, dust from dust collectors, and metals (mostly in the form of scrap).

**Ore.** Natural minerals containing metals or their compounds in economically valuable amounts and forms.

**Oxide.** A compound of a chemical element with oxygen.

**Proven ore reserves.** Estimated based on the economically mineable part of measured mineral resources, including possible dilution and losses during mining operations.

**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.

**Pulp.** A mixture of finely ground rock with water or a water solution.

**Pyrometallurgical processes.** Metallurgical processes performed at high temperatures, including roasting, smelting and conversion, which are distinguished depending on their technological characteristics.

**Refinement.** The process of extracting high purity precious metals through their separation and removal of impurities.

**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.** The process of removing volatile components from and changing the chemical composition of materials (ores, concentrates, etc.) performed at elevated temperatures enabling various gas-solid reactions but insufficient to cause melting of the material's solid compounds.

**Shop area.** A part of a (metallurgical) shop.

**Smelting.** A pyrometallurgical process performed at high temperatures enabling the complete melting of the processed material.

**Sulphides.** Compounds of metals and sulphur.

**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.

**Underground (subsurface) mining.** A set of stripping, preparatory and stopping operations.

**Vanadium (surface) mining.** 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.
Metric conversion table and currency exchange rates

Metric conversion table

<table>
<thead>
<tr>
<th>Metric</th>
<th>Length</th>
<th>Area</th>
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<tbody>
<tr>
<td>1 km</td>
<td>0.6214 mi</td>
<td>1 sq km</td>
<td>10.5769 sq ft</td>
</tr>
<tr>
<td>1 m</td>
<td>3.2808 ft</td>
<td>1 sq km</td>
<td>10.7639 sq ft</td>
</tr>
<tr>
<td>1 cm</td>
<td>0.03937 m</td>
<td>1 ha</td>
<td>2.4710 acres</td>
</tr>
<tr>
<td>1 m</td>
<td>3.2808 ft</td>
<td>1 sq ft</td>
<td>1.093610 sq m</td>
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<td>1 mm</td>
<td>0.003281 ft</td>
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</tr>
<tr>
<td>1 m</td>
<td>3.2808 ft</td>
<td>1 lb</td>
<td>0.45359237 kg</td>
</tr>
<tr>
<td>1 mm</td>
<td>0.003281 ft</td>
<td>1 oz</td>
<td>0.03527396 kg</td>
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Currency exchange in 2013–2017

This appendix provides currency exchange rates used to convert expenses denominated in RUB to USD.

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<tr>
<td>Average rate for the year ended 31 December</td>
<td>35.85</td>
<td>38.42</td>
<td>60.96</td>
<td>67.03</td>
<td>58.35</td>
</tr>
</tbody>
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Contacts

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Fax: +7 (391) 216-57-27
Helpdesk operating hours:
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ADR depositary
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Tel.: +1 (212) 815-22-93
Fax: +1 (212) 571-30-50
Web-site: www.bnymellon.com

Auditor
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Tel.: +7 (495) 937-44-77
Fax: +7 (495) 937-44-99
E-mail: moscow@kpmg.ru
Web-site: www.kpmg.com

Registrar
JSC “Computershare Registrar”
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Fax: +7 (495) 989-76-82
E-mail: info@nrcreg.ru

Currency exchange in 2013–2017

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Disclaimer
This annual report (Annual Report) has been prepared based on the information available to MMC Norilsk Nickel and its subsidiaries as at the issue date. The Company believes that the information provided in this Annual Report is complete and accurate as at the Annual Report publication date. However, the Company does not assert that this information will not be updated or corrected in the future.

This Annual Report may include certain forward-looking statements with respect to the Group’s operations, economic indicators, financial position, results of operating and production activities, its plans, projects and expected results, as well as trends related to commodity prices, production and consumption volumes, costs, estimated expenses, development prospects, useful lives of assets, reserve estimates and other similar factors and economic projections with respect to the industry and markets, start and completion dates of certain geological exploration and production projects, and liquidation or disposal of certain entities.

The Company neither confirms nor guarantees that the results indicated in the forward-looking statements will be achieved.

The Company accepts no responsibility for any losses that may be incurred by any individual or legal entity acting in reliance on the forward-looking statements.