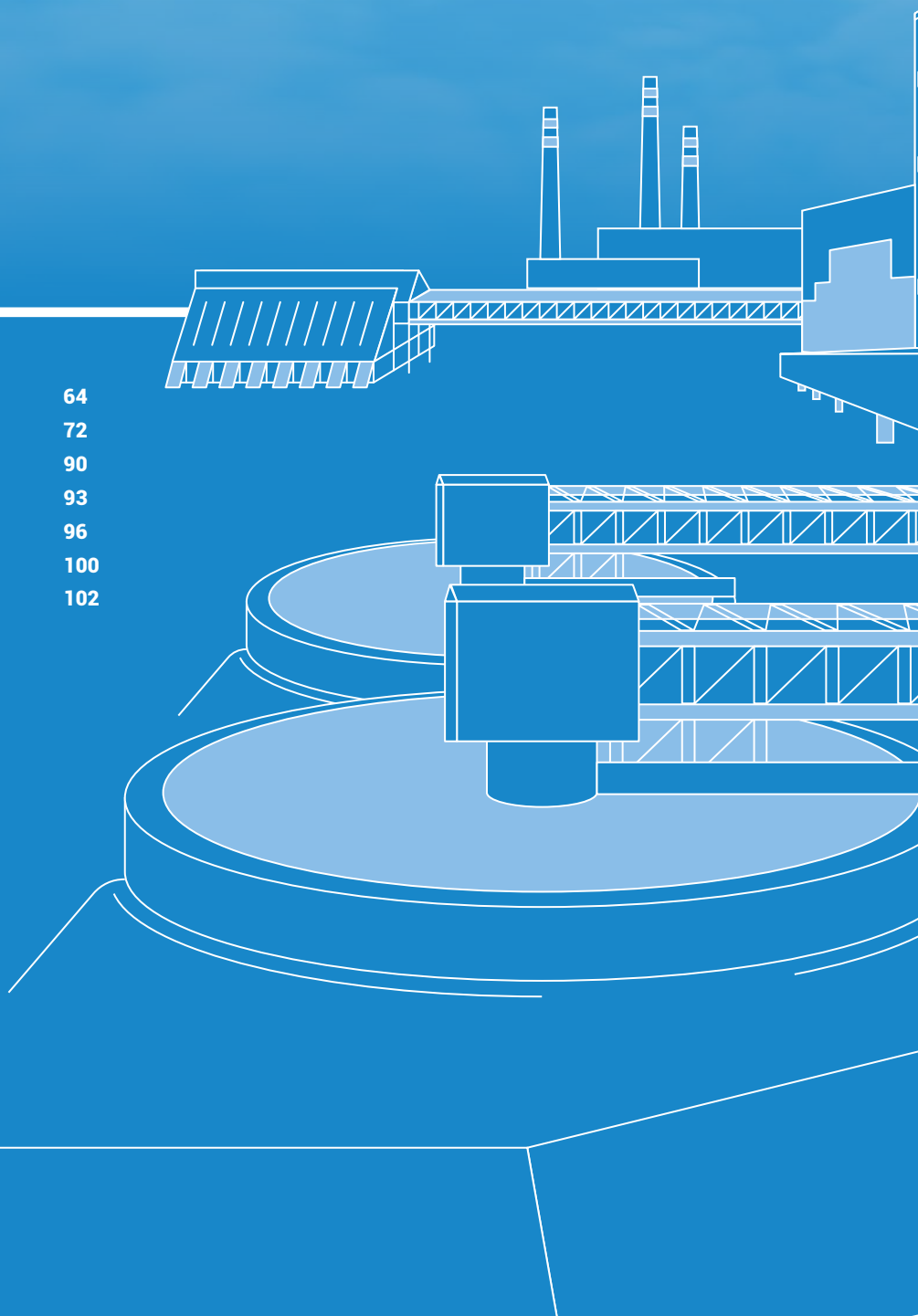
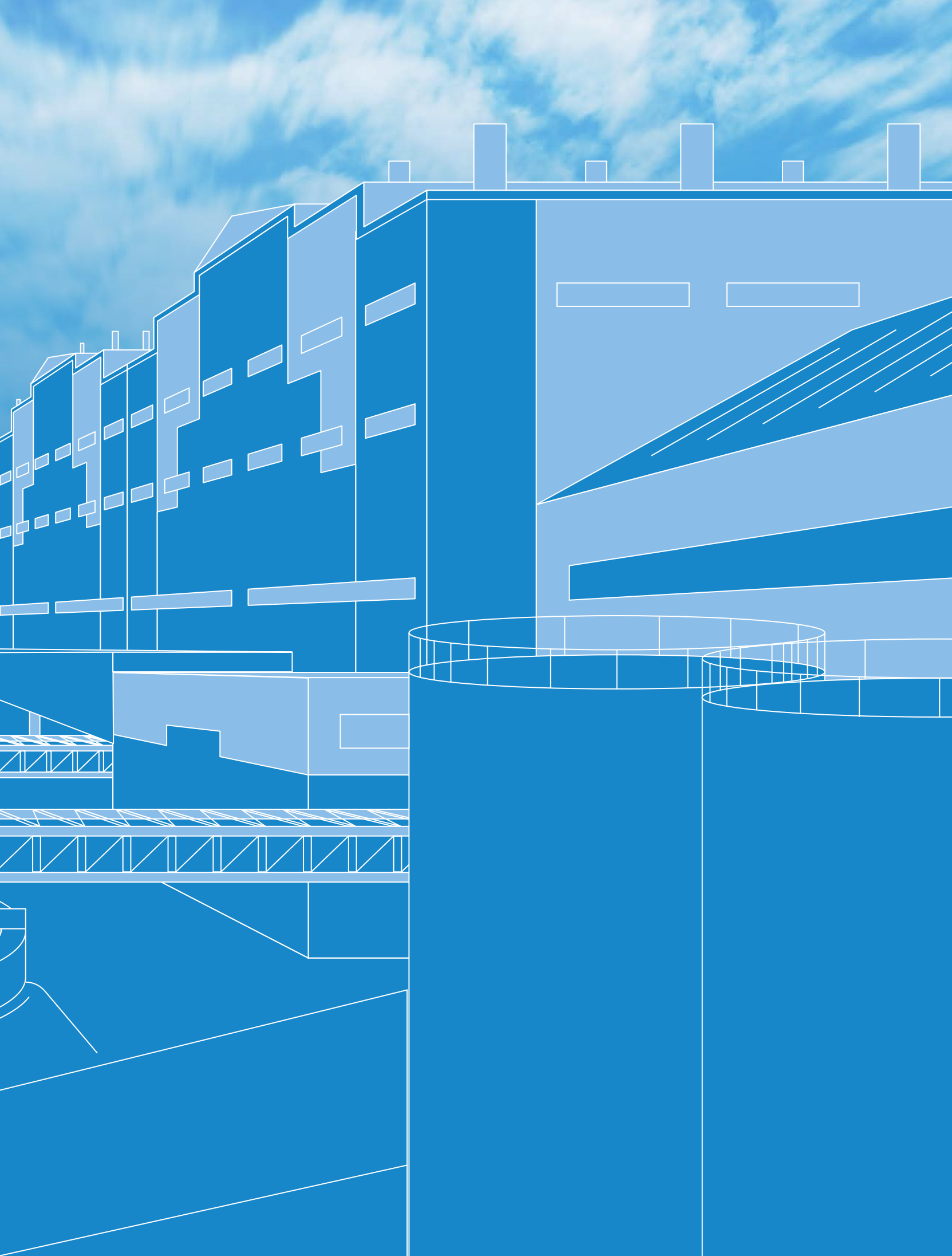
4

Business overview





MINERAL BASE

RESERVES AND RESOURCES[1]

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

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

Ni	Cu	PGM
15.3 mt	23.5 mt	8.2 kt (263 moz)

Ni	Cu	PGM
6.9 mt	12.1 mt	3.8 kt (123 moz)

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

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

Geography of metals mining by Nornickel

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

EXISTING OPERATIONS

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

>80 years

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

Talnakh Ore Cluster

Geography and profile

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

Geological exploration

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

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

Depletion of balance metal reserves in 2018

13.2 mt of ore

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

Additional balance reserves in 2018

3.6 mt of ore

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

Average metal content:
Ni — 1.4%
Cu — 1.9%
PGM — 8.8 g/t

Balance reserves

2,001.4 mt of ore

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

Proven and probable reserves

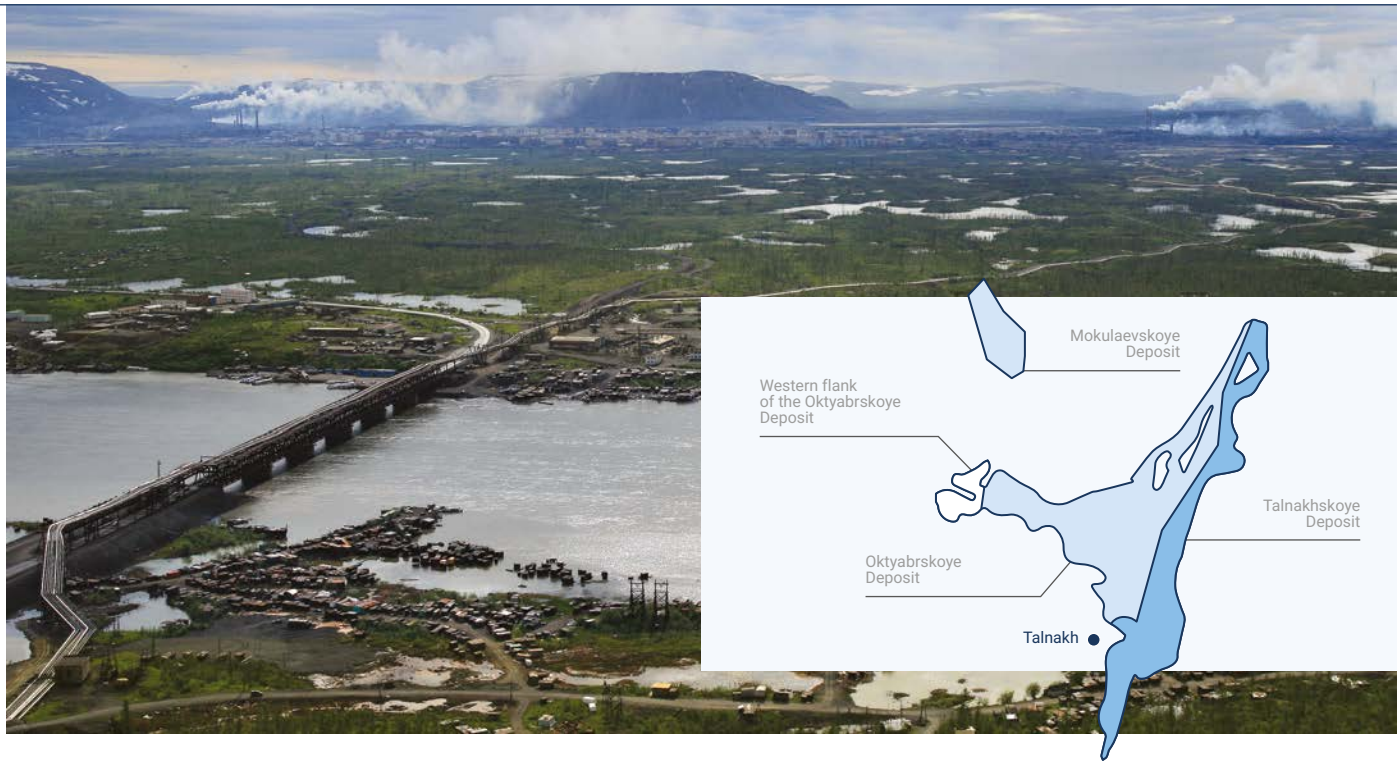
640.2 mt of ore

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

Measured and indicated resources

1,561.6 mt of ore

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



Norilsk Ore Cluster

Geography and profile

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

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

Depletion of balance metal reserves in 2018

1.6 mt of ore

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

Additional balance reserves in 2018

0.7 mt of ore

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

Average metal content:

Ni — 0.4%
Cu — 0.6%
PGM — 5.5 g/t

Balance reserves

148.1 mt of ore

Ni — 0.4 mt
Cu — 0.6 mt
PGM — 0.8 kt

Proven and probable reserves

43.4 mt of ore

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

Measured and indicated resources

147.0 mt of ore

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

Kola MMC Deposit

Geography and profile

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

Depletion of balance metal reserves in 2018

7.2 mt of ore

Ni – 46.9 kt
Cu – 20.7 kt

Additional balance reserves in 2018[1]

8.3 mt of ore

Ni – 44.6 kt
Cu – 20.1 kt

Average metal content.[2]
Ni – 0.5%
Cu – 0.2%

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

Balance reserves

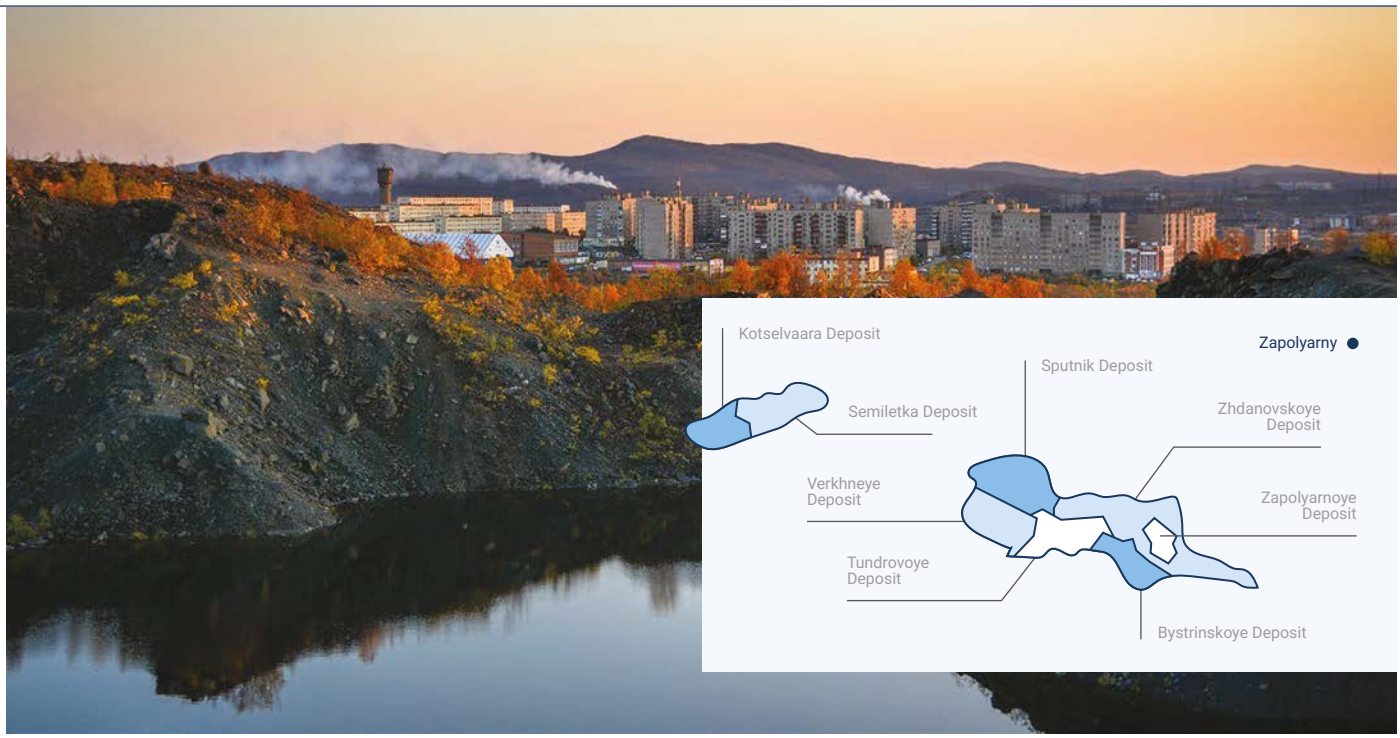
471.5 mt of ore
Ni – 3.2 mt
Cu – 1.5 mt

Proven and probable reserves

100.9 mt of ore
Ni – 0.6 mt
Cu – 0.3 mt

Measured and indicated resources

327.3 mt of ore
Ni – 2.3 mt
Cu – 1.1 mt



Bystrinskoye Deposit

Geography and profile

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

Geological exploration

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

Balance reserves

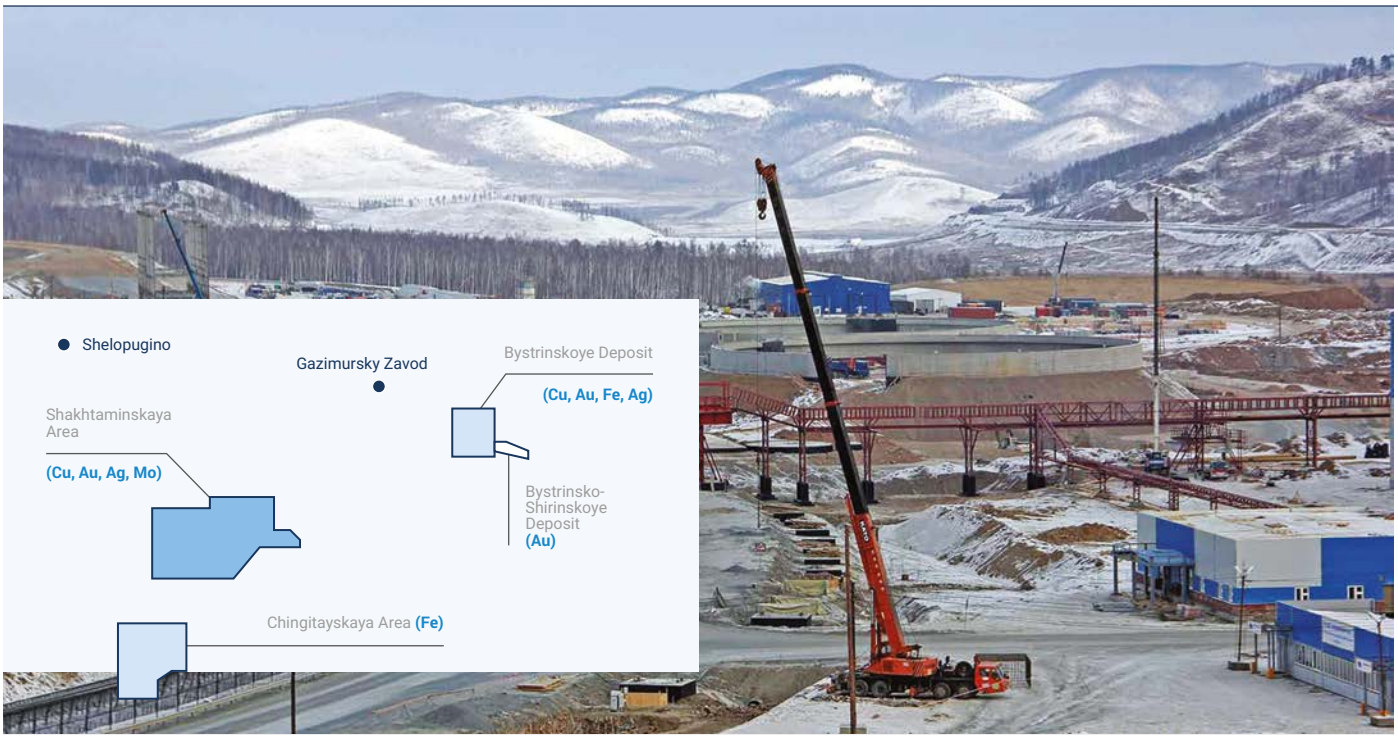
325.9 mt of ore

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

Depletion of balance reserves in 2018

7.1 mt of ore

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



Nkomati

Geography and profile

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

Proven and probable reserves

84.45 mt of ore

Ni — 261.0 kt
Cu — 100.9 kt
Co — 16.8 kt
PGM — 75.0 t (2.4 moz)

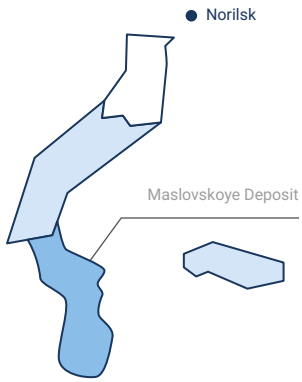
Measured and indicated resources

172.2 mt of ore

Ni — 602.7 kt
Cu — 241.1 kt
Co — 34.4 kt
PGM — 165.3 t (5.3 moz)

Development projects

MASLOVSKOYE FIELD



Geography and profile

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

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

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

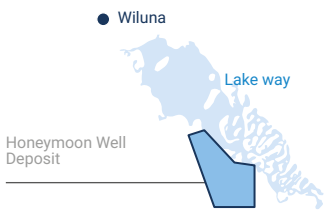
Balance reserves

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

B + C_1 + C_2 mineral reserves

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

HONEYMOON WELL DEVELOPMENT PROJECT



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

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

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

OPERATING PERFORMANCE

Production assets overview

SMELTING		REFINING	PRODUCT OFFERINGS
Copper smelting Copper Plant	Blister copper Slime from Copper Tankhouse	Copper Plant	• **Copper:** cathodes • **Sulphur:** commercial • **Acid:** sulphuric (for Company use)
Nickel smelting Nadezhda Metallurgical Plant	Converter matte	PGM Concentrator (part of Copper Plant)	• **Precious metal concentrates** • **Selenium:** technical
Smelting Shop in Nickel	Converter matte	PGM Concentrator Refining Shop	• **Nickel:** cathodes, carbonyl, concentrate for sale • **Copper:** cathodes, concentrate for sale • **Cobalt:** electrolytic, concentrate for sale • **Precious metal concentrates** • **Acid:** sulphuric
			• **Copper, iron:** saleable concentrates • **Gold:** concentrate to be processed at Polar Division's facilities (Copper Plant)
			• **Saleable concentrate**

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

NN Harjavalta			
	Ni matte from Kola MMC Crushed converter matte from Kola MMC Third-party feedstock	Nickel refinery in Finland	• **Nickel:** cathodes, briquettes, salts, powders, solutions • **Cobalt:** sulphates, solutions • **Copper:** saleable cake and cake for Kola MMC

OPERATING PERFORMANCE FOR 2018

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

First Vice President – Chief Operating Officer
SERGEY DYACHENKO

Ore output *(mt)*

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

Average metal content in ore mined

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

Metals recovery in concentration *(%)*

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

Metals recovery in downstream *(%)*

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

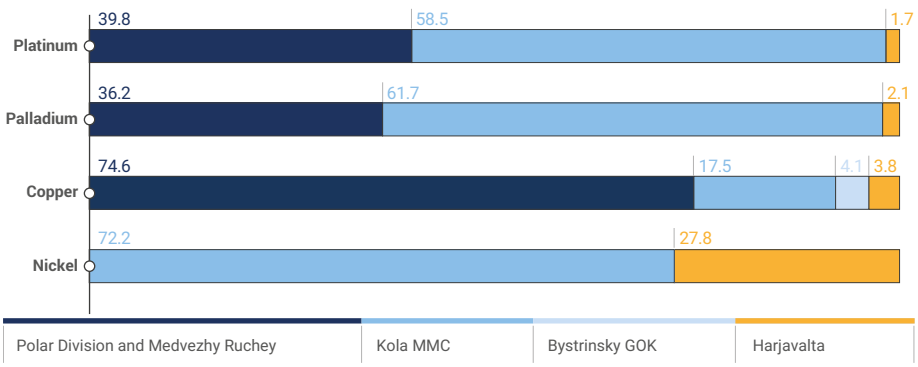
1. *Volumes based on the 50% ownership.*
2. *The five following metals are included: palladium, platinum, rhodium, ruthenium and iridium.*
3. *Feedstock to end products.*
4. *Feedstock to converter matte.*
5. *In refining, converter matter to end products.*

Saleable metals production across the Group

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

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

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



TAIMYR PENINSULA
(Polar Division and Medvezhy Ruchey)

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

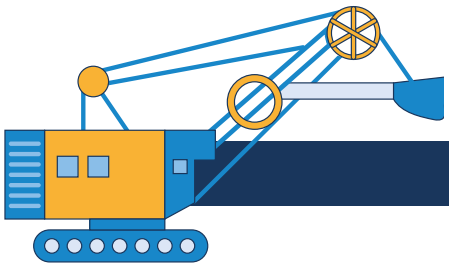
Polar Division and Medvezhy Ruchey are located beyond the Arctic Circle on the Taimyr Peninsula in the north of the Krasnoyarsk Territory, Russia. The sites are linked to other regions by the Yenisey River, the Northern Sea Route and by air.

2018 milestone

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

17.3 mln t

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



MINING (Polar Division and Medvezhy Ruchey)

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

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

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

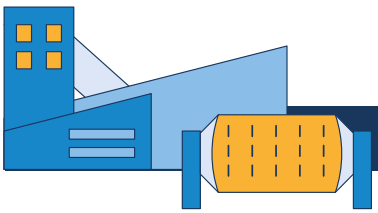
The Norilsk-1 Deposit is developed by Polar Division's Zapolyarny Mine through open-pit and underground mining. Underground mining is carried out through sublevel (level) caving using front ore passes and self-propelled vehicles.

2018 milestones

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

Ore output *(mt)*

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



CONCENTRATION (Polar Division and Medvezhy Ruchey)

Concentration facilities

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

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

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

Sulphide ore processed *(mt)*

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

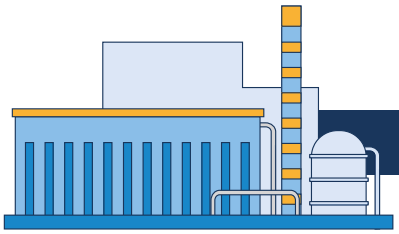
Nickel recovery *(%)*

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

2018 milestones

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

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



SMELTING (Polar Division and Medvezhy Ruchey)

2018 milestones

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

Product offering:

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

Smelting facilities

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

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

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

Production chain

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

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

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

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

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

Metals output

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

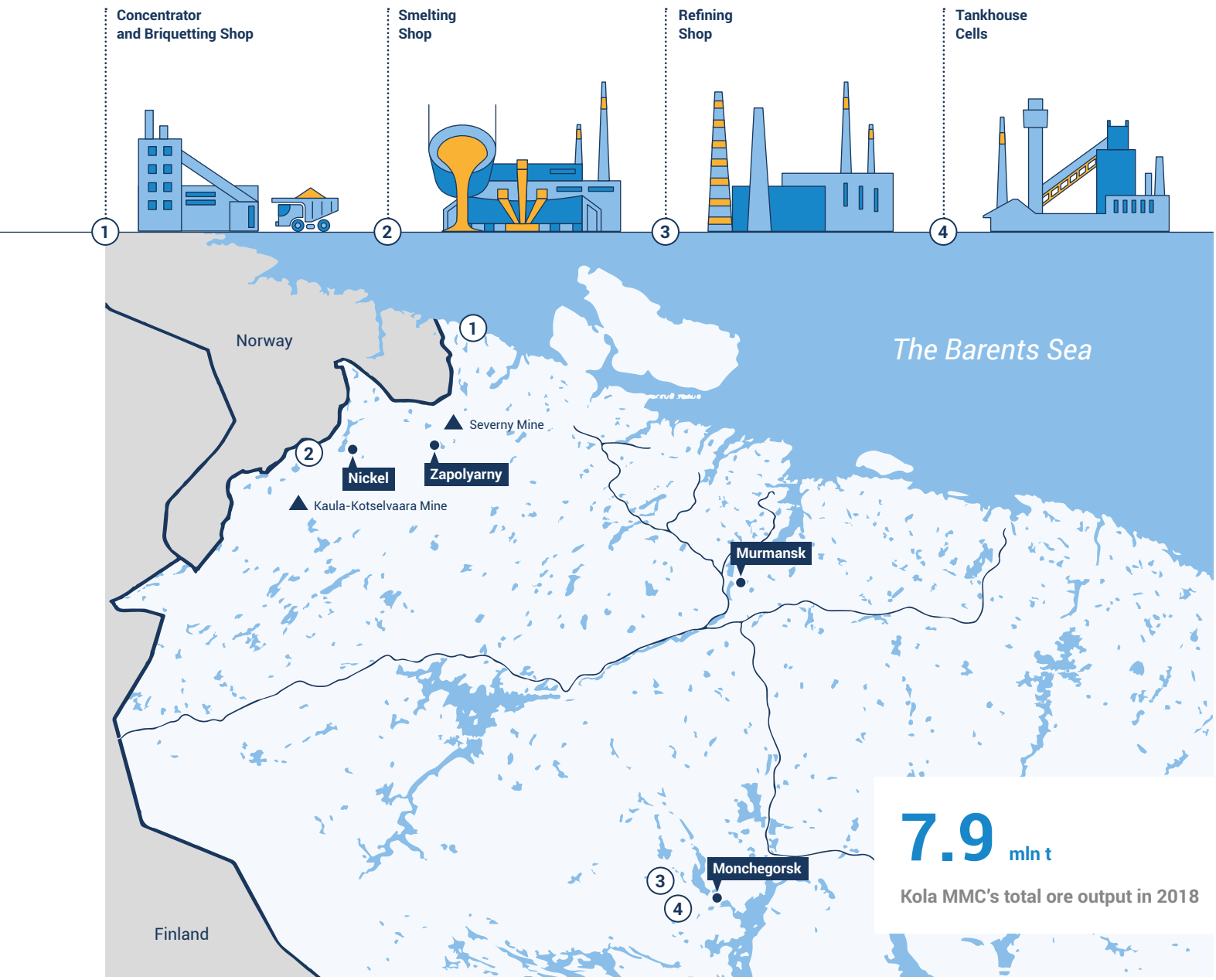
KOLA PENINSULA
(Kola MMC)

2018 milestone

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

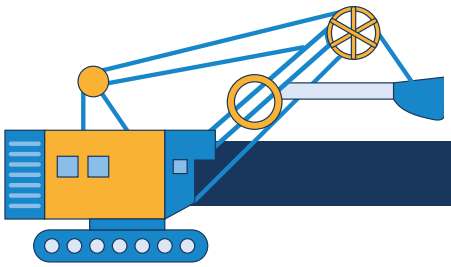
Kola Mining and Metallurgical Company (Kola MMC) is Norilsk Nickel's 100% subsidiary and an important production asset.

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



7.9 mln t

Kola MMC's total ore output in 2018



MINING (Kola MMC)

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

It leverages various ore mining methods:

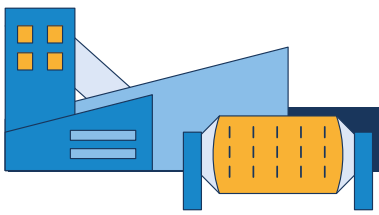
- the Zhdanovskoye Deposit uses sublevel longwall caving with front ore passes, block caving (limited scope of application), and open-pit mining (at Yuzhny open pit);
- the Kotselvaara and Semiletka Deposits primarily use stoping from sublevel drifts and sublevel caving, as well as room-and-pillar short-hole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

2018 milestones

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

Ore output *(mt)*

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



CONCENTRATION (Kola MMC)

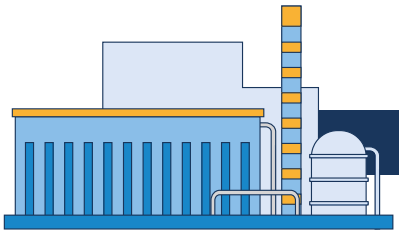
Concentration facilities

- Zapolyarny Concentrator.

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

2018 milestones

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



SMELTING (Kola MMC)

2018 milestones

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

Smelting facilities

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

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

Metals output

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

Product offering:

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

ZABAYKALSKY KRAY (GRK Bystrinskoye)

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

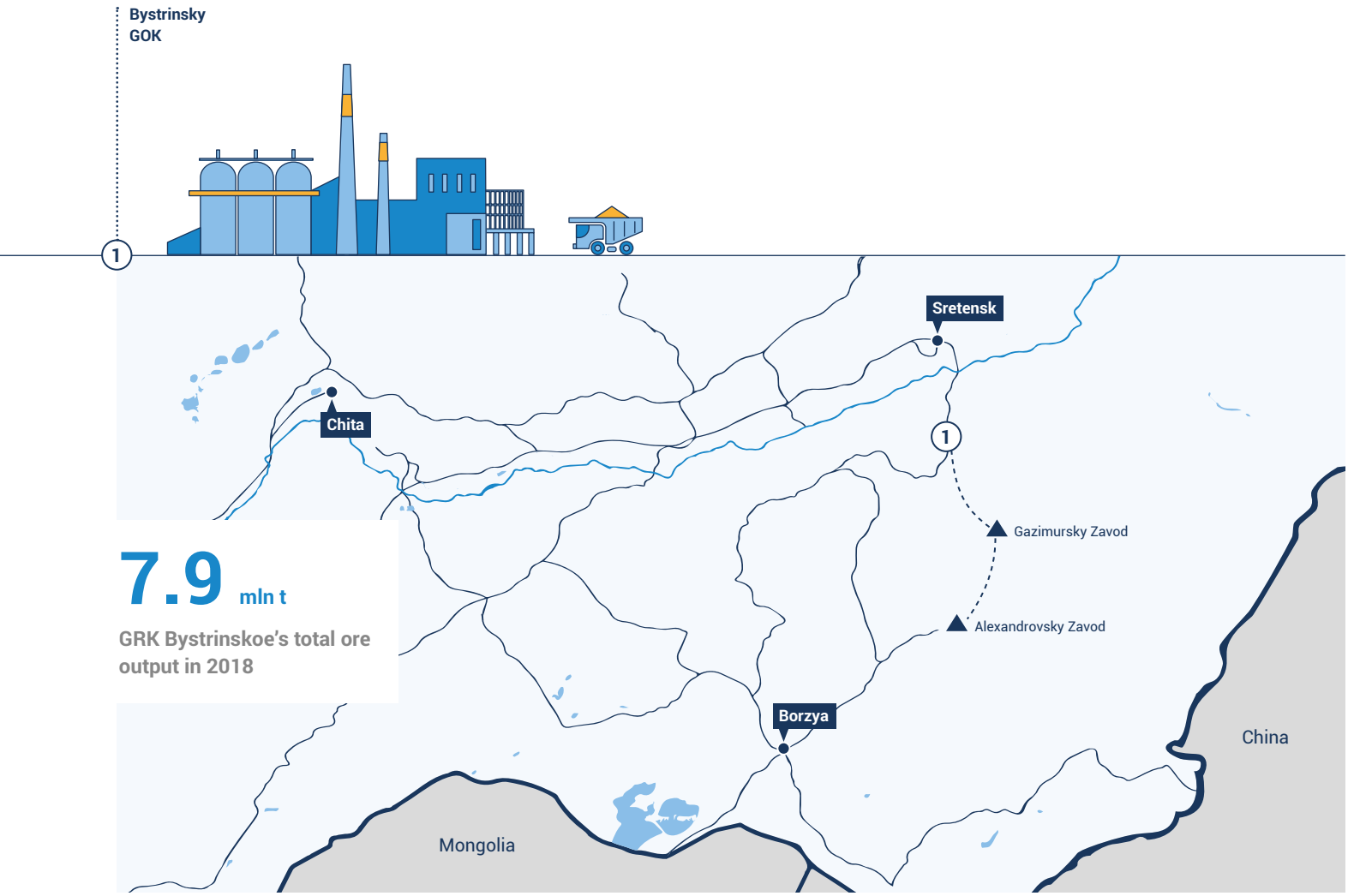
This new Nornickel asset is the largest greenfield project in the Russian metals industry, covering ore mining, concentration and shipment of end products to customers. The volume of ore mined and processed at Bystrinsky GOK is approximately 10 mtpa.

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

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

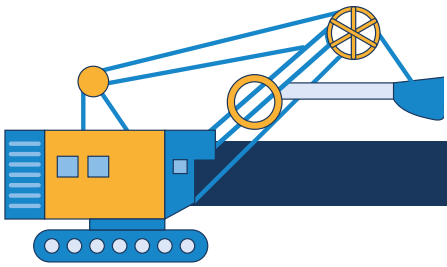
2018 milestone

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



7.9 mln t

GRK Bystrinskoe's total ore output in 2018

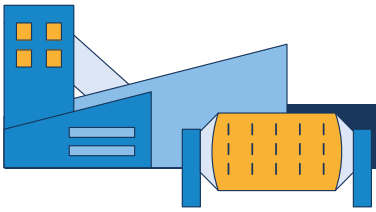


MINING (GRK Bystrinskoye)

Bystrinsky GOK mines gold-iron-copper ores.

Ore output *(mt)*

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



CONCENTRATION (GRK Bystrinskoye)

Concentration facilities

- Concentrator.

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

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

Product offering:

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

Concentration

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

FINLAND
(NN Harjavalta)

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

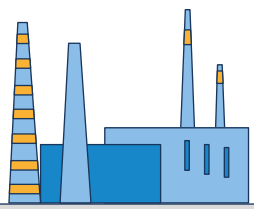
Founded in 1960, Norilsk Nickel Harjavalta is the only nickel refinery in Finland and one of the largest such facilities in Europe. It has a total capacity to produce 66 ktpa of nickel products.

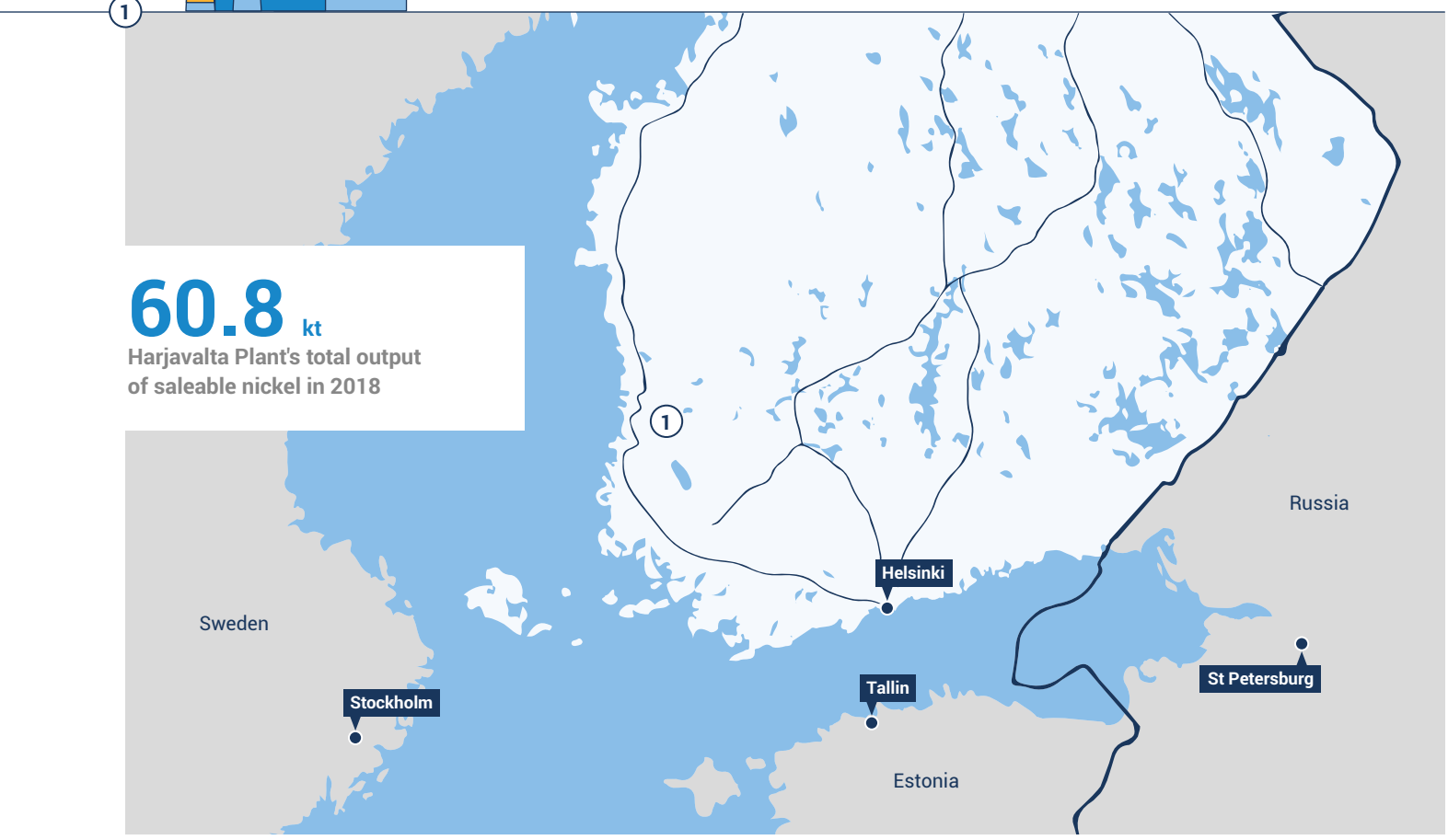
The facility uses sulphuric acid leaching, the best-in-industry global solution with the metal recovery rates of above 98%.

2018 milestone

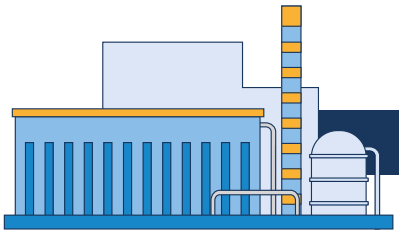
In 2018, Norilsk Nickel Harjavalta accounted for 28%, 4% and 2% of the Group's total nickel, copper and PGM end products, respectively.

Norilsk Nickel Harjavalta Plant

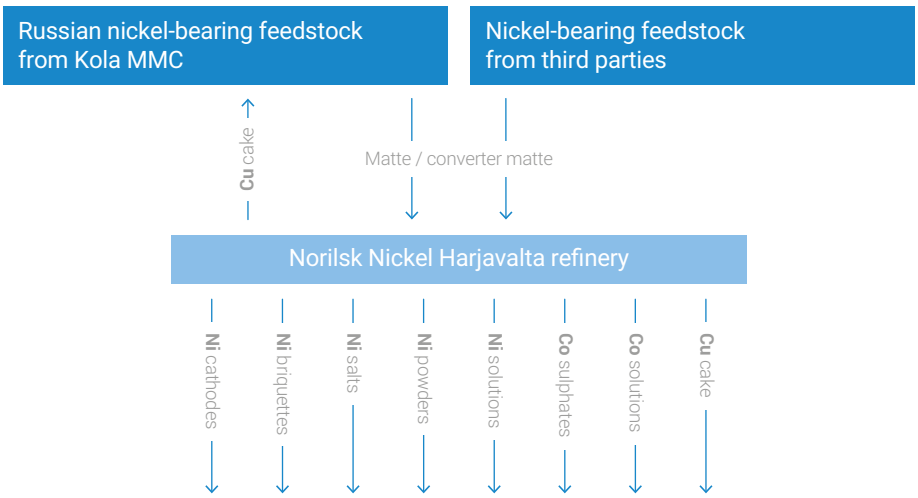




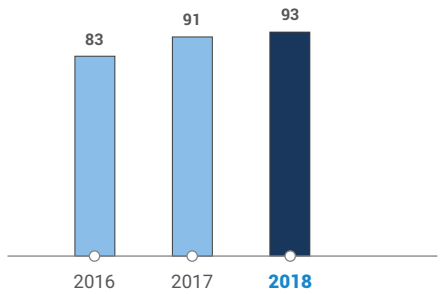
60.8 kt
Harjavalta Plant's total output of saleable nickel in 2018



SMELTING (NN Harjavalta)



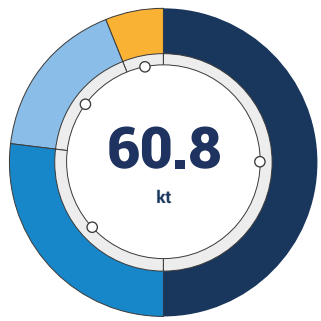
Refining capacity utilisation *(%)*



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

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

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



Briquettes	50
Cathodes	27
Chemicals and solutions	17
Powders	6

Metals output

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

Product offering:

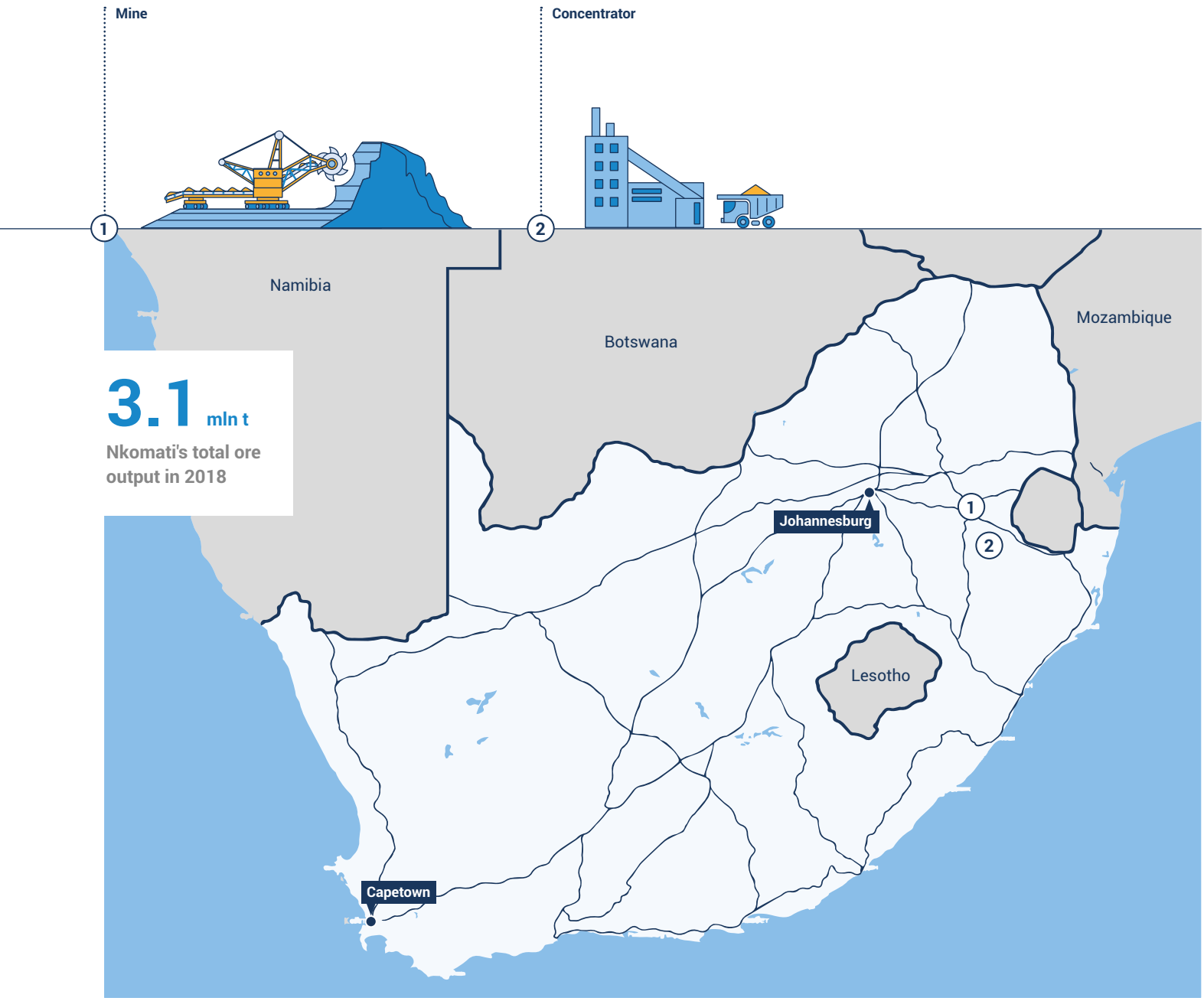
- nickel cathodes and briquettes;
- nickel salts, powdersand solutions
- cobalt sulphate;
- cobalt solutions;
- PGM-bearing copper cake.

SOUTH AFRICA
(Nkomati)

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

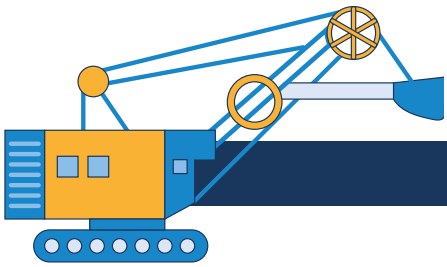
Nkomati is located in Mpumalanga Province, South Africa, 300 km east of Johannesburg.

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



3.1 mln t

Nkomati's total ore output in 2018

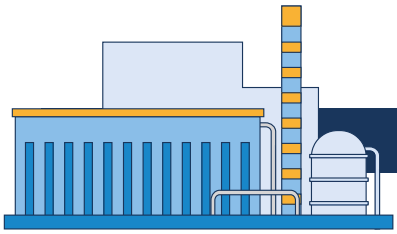


MINING (Nkomati)

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

2018 milestone

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



CONCENTRATION AND SMELTING (Nkomati)

2018 milestones

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

Concentration facilities

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

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

Metals output[1]

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

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

PRODUCTS AND DISTRIBUTION

PRODUCT RANGE

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

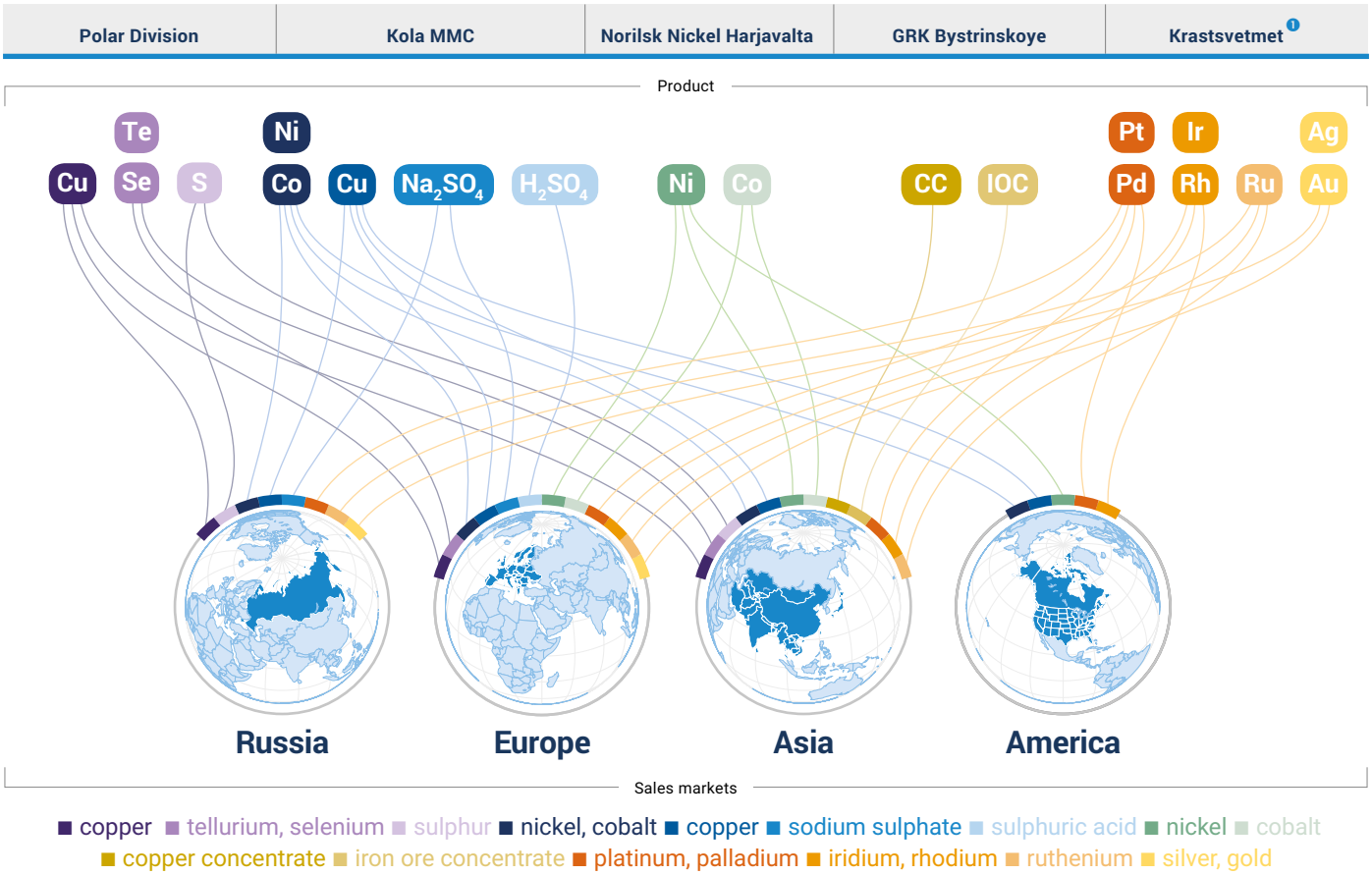
One of the Company's objectives is to make sure its product range is in line with the current and prospective global metals demand.

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

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

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

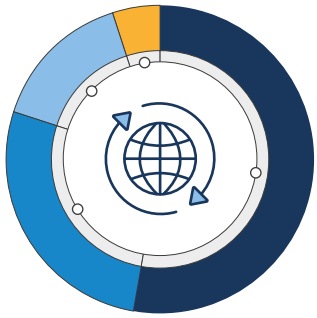
End product production



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

SALES STRATEGY

Sales by region *(%)*



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

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

120 kt

The Company supplies its products to

34 countries

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

1 moz of palladium

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

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

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

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

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

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

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

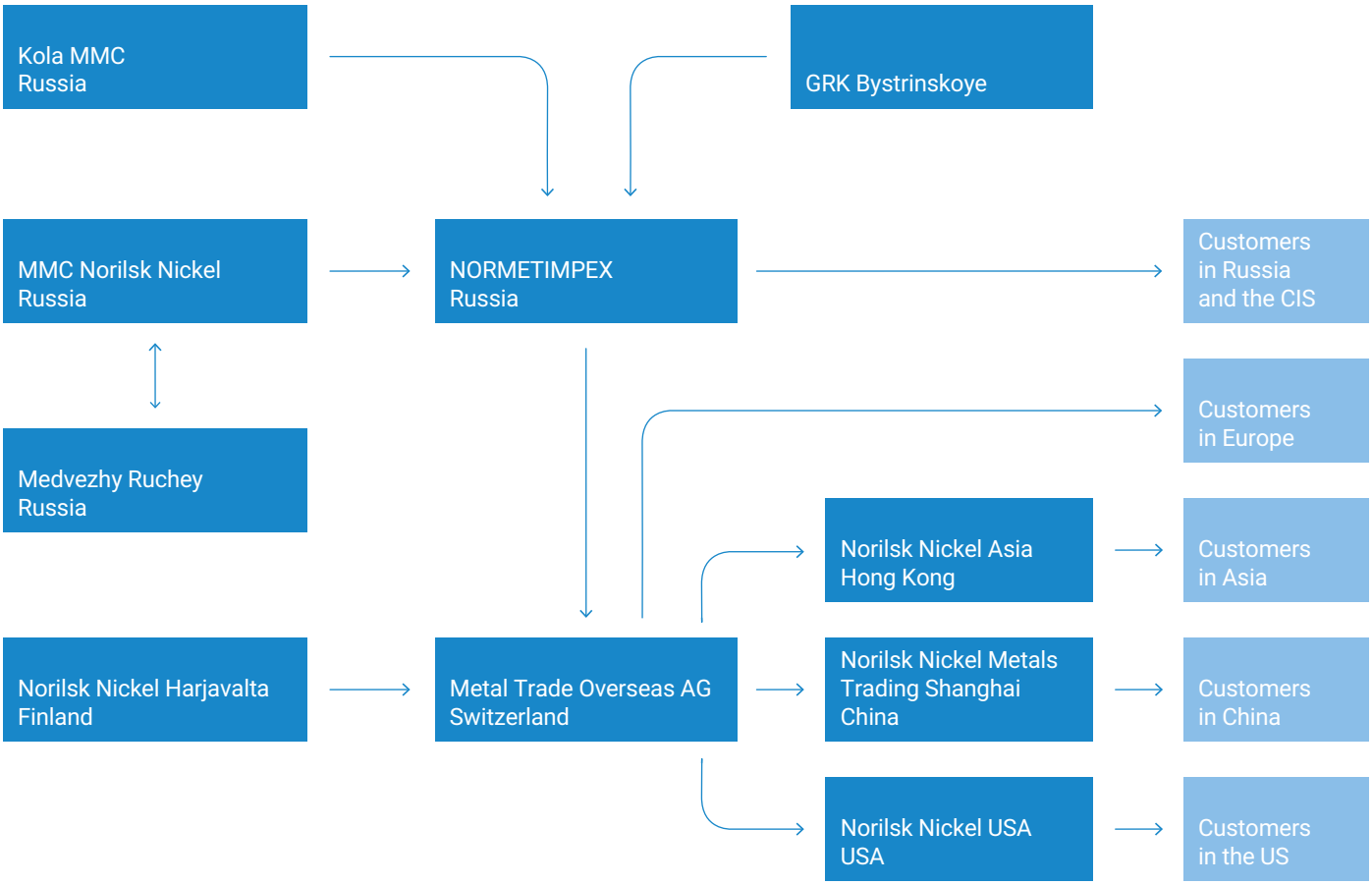
As the world's largest producer of palladium, the Company continues to implement the strategy of entering into direct long-term contracts with end consumers to ensure sustainable and strong demand for platinum group metals.

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

The Company supplies its products to 34 countries.

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

Company sales



PARTNERSHIP WITH BASF

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

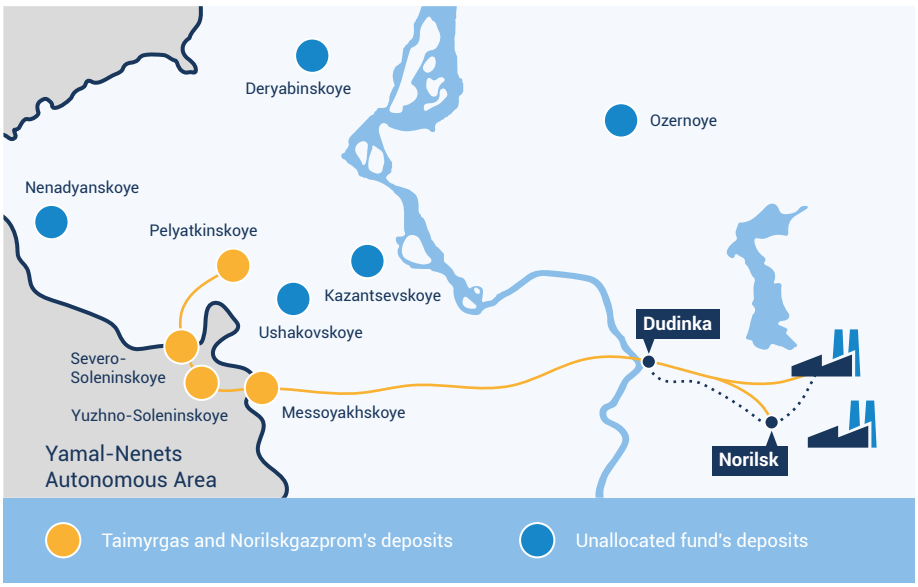
Under the agreement, Nornickel's nickel refining plant in Harjavalta will supply nickel and cobalt feedstock to a BASF cathode materials facility to be built adjacent to Nornickel's site. The facility is expected to come on stream by the end 2020 with the capacity to produce battery components for some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

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

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

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

ENERGY ASSETS



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

4 hydrocarbon deposits

2,896 mcm
natural gas production

90 kt
gas condensate production[1]

43.6%
electricity generated from renewable sources

Taimyrgaz *(100% stake)*

Upstream

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

Norilskgazprom *(100% stake)*

Upstream

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

Production

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

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

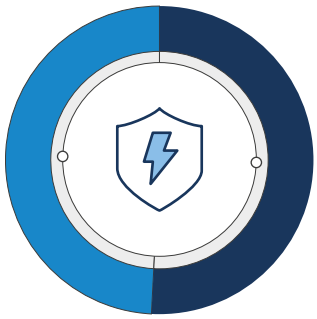
Norilsktransgaz *(100% stake)*
transports natural gas and condensate to consumers in the Norilsk Industrial District.

Transportation

Gas and gas condensate pipelines from Pelyatkinskoye to Severo-Soleninskoye deposits
- Commissioned: 2003
- Length: 170.7 km

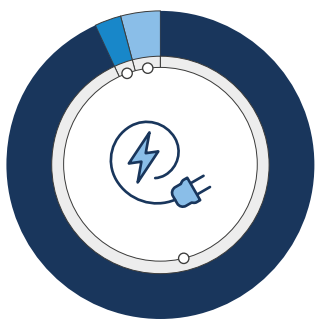
Gas and gas condensate pipelines from Severo-Soleninskoye Deposit to Norilsk/Dudinka
- Commissioned in: 1971
- Length: 1,418.1 km

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



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

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



Kola MMC	95
Monchegorsk residents	2
Other	3

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

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

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

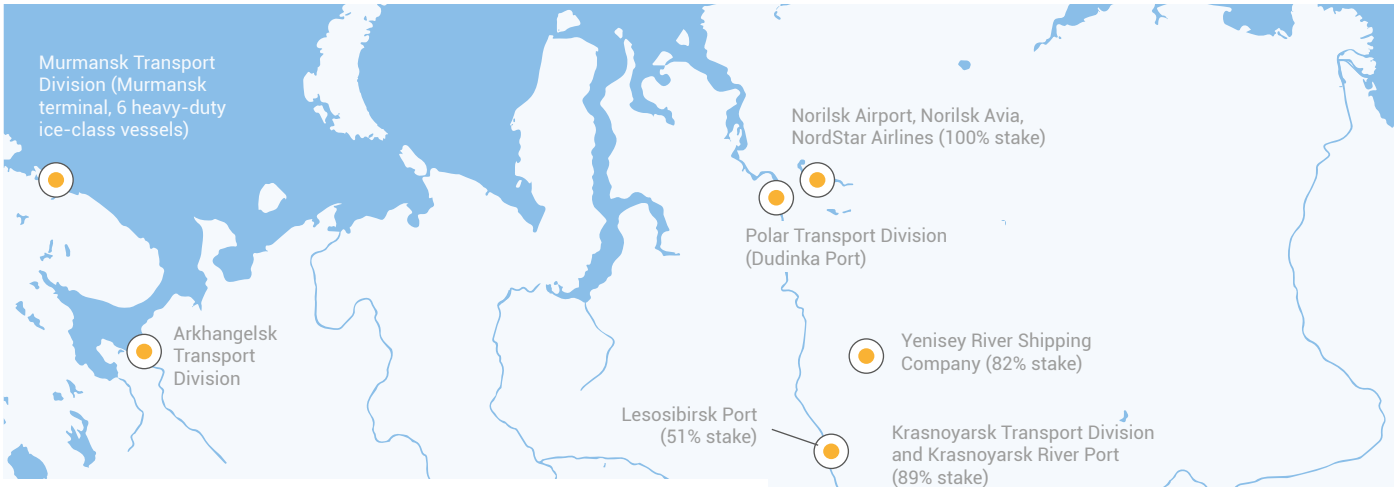
In 2018, renewables accounted for 43.6% of total power consumed by the Group and 51.4% of power consumption in the Norilsk Industrial District.

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

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

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

TRANSPORTATION ASSETS



Norilsk Nickel's transportation and logistics assets include:

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

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

Freight shipping services

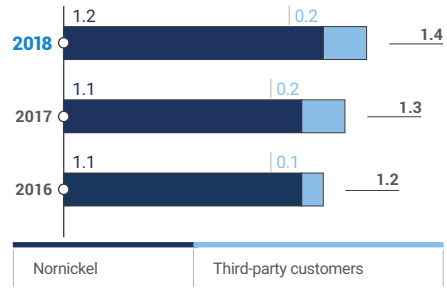
Nornickel has a unique Arctic fleet comprising five dry cargo vessels and one Yenisey heavy-duty ice-class tanker (ARC 7 under the classification of the Russian Maritime Register of Shipping). The vessels are capable of breaking through Arctic ice up to 1.5 m thick without icebreaker support. The Yenisey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

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

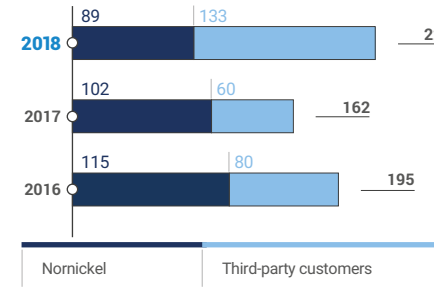
2018 milestones

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

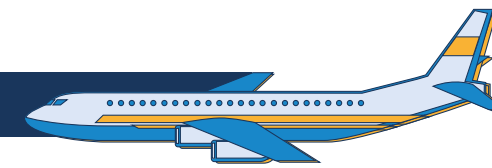
Dry cargo transportation by the Company's fleet *(mt)*



Transportation by Yenisey tanker *(kt)*



Air transportation services



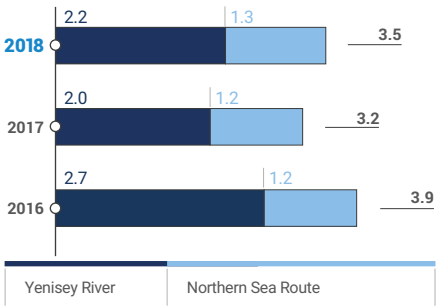
Norilsk Avia serves the transportation needs of local communities in the Norilsk and Taimyrsky Dolgano-Nenetsky districts of the Krasnoyarsk Territory. The company provides air services related to the operations of the Norilsk Nickel Group, emergency air medical assistance, search-and-rescue operations,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

NordStar Airlines is a rapidly developing aviation project launched in 2008. Its fleet comprises 15 aircraft. In 2018, for the second year running, NordStar Airlines successfully passed the IATA Operational Safety Audit and was added to the IOSA Registry.
With passenger traffic in excess of 1 million people per year, NordStar Airlines annually reaffirms its status of a major air carrier in the Siberian Federal District and nationwide. The air company's current route network covers over 30 cities in Russia and the CIS. In the reporting year, it carried over 110,000 residents of the Norilsk Industrial District during the third stage of the Norilsk Airport reconstruction.

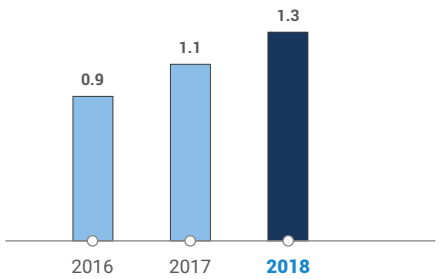
Located 36 km away from Norilsk, **Airport** plays an essential role in ensuring the region's transport accessibility as it connects the north of the Krasnoyarsk Territory with other Russian regions.
The airport kept servicing passengers throughout the entire period of the runway reconstruction completed in 2018.
The project was implemented as part of a public-private partnership formalised by an agreement signed between the Federal Air Transport Agency and Nornickel. This was the first of its kind initiative both in Russia and internationally, with the project delivered on schedule and to the highest quality requirements.
The new 2,821 ×45 m runway is fully compliant with all the certification standards. The project also saw the upgrade of two taxiways and partial repairs of the concrete pavement in the apron for civil aircraft.

Transport divisions and ports

Waterway cargo traffic at Dudinka port *(mt)*



Waterway cargo traffic at Murmansk terminal *(mt)*



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

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

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

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

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

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

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

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

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

Krasnoyarsk Transport Division

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

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

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

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

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

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

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

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

Investments in transportation and logistics assets

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

INNOVATIONS

2018 milestones

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

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

RESEARCH AND DEVELOPMENT

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

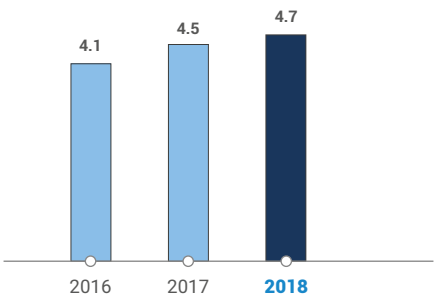
DIGITALISATION

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

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

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

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



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

2018 milestones

In 2018, Nornickel and Skolkovo Foundation signed a partnership agreement to set up Nornickel's digital lab within the Skolkovo Innovation Centre. The lab will track and analyse innovations and digital initiatives. In 2018–2021, the Company plans to invest some USD 80 mln in going digital.

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

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Artificial intelligence and computer vision

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

Industrial exoskeleton trials

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

Mine automation system

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

FINANCIAL OVERVIEW (MD&A)

2018 HIGHLIGHTS

2018

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

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

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

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

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

Free cash flow increased to USD 4.9 billion.

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

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

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

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

Recent developments

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

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

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

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

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

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

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

USD 9,742 mln

revenue of the GMK Group segment

USD 911 mln

revenue of the KGMK Group segment

USD 1,026 mln

revenue of Norilsk Nickel Harjavalta

USD 8 mln

revenue of the GRK Bystrinskoye segment

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

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

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

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

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

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

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

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

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

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

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

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

USD 6,602 mln

EBITDA of the GMK Group segment

USD 190 mln

EBITDA of the KGMK Group segment

USD 71 mln

EBITDA of Norilsk Nickel Harjavalta

USD 96 mln

EBITDA of the GRK Bystrinskoye segment

Sales volume and revenue

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

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

REVENUE

Nickel

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

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

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

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

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

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

Copper

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

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

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

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

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

Palladium

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

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

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

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

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

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

Platinum

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

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

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

Other metals

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

OTHER SALES

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

Other sales *(USD million)*

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

COST OF METAL SALES

Cost of metal sales

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

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

Cash operating costs

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

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

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

Cash operating costs *(USD million)*

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

Labour
In 2018, labour costs decreased by 6% (or -USD 81 million) to **USD 1,311 million** amounting to 35% of the Group's total cash operating costs driven by the following:
- -USD 89 million – cost decrease owing to the Russian rouble depreciation against US Dollar;
- -USD 58 million – cost decrease following the headcount reduction as part of 2018-2020 efficiency and cost optimization programme;
- +USD 66 million – increase in real terms primarily driven by the indexation of RUB-denominated salaries and wages in line with collective bargaining agreement.

Purchases of raw materials and semi-products
In 2018, purchases of raw materials and semi-products increased 47% (or USD 139 million) to **USD 436 million** driven by the following:
- +USD 193 million – cost increase owing to the processing of copper concentrate purchased from Rostec;
- -USD 24 million – cost decrease owing to lower volumes of semi-products purchased from Nkomati;
- -USD 23 million – cost reduction owing to lower volumes of purchased semi-products from third parties for processing at NN Harjavalta.

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

Materials and supplies
In 2018, materials and supplies expenses decreased by 1% (or USD 5 million) to **USD 727 million** driven by the following factors:
- -USD 48 million – positive effect of the Russian rouble depreciation;
- +USD 32 million – inflationary growth in materials and supplies expenses;
- +USD 14 million – increase in consumption of process materials that was partly offset by a reduction in repairs.

Third-party services
In 2018, cost of third party services decreased by 17% (or USD 42 million) to **USD 200 million** mainly driven by:
- -USD 15 million – positive effect of the Russian rouble depreciation;
- -USD 27 million – costs decrease primarily due to lower repairs and outsourced concentrates recovery.

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

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

Fuel
In 2018, fuel expenses increased by 7% (or +USD 6 million) to **USD 87 million** driven by the following:
- -USD 5 million – positive effect of the Russian rouble depreciation;
- +USD 11 million – higher oil prices.

Transportation expenses
In 2018, transportation expenses increased by 8% (or +USD 5 million) to **USD 70 million** driven by the following:
- -USD 4 million – positive effect of the Russian rouble depreciation;
- +USD 7 million – costs increase driven by outsourcing of Kola MMC transportation activities and increase in metal production volumes.

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

Depreciation and amortisation
In 2018, depreciation and amortisation expenses increased by 4% (or +USD 23 million) to **USD 653 million** driven by the following:
- Positive effect of Russian rouble depreciation amounted to -USD 37 million.
- Depreciation charges increased by +USD 60 million mainly due to transfers from construction in progress to production assets at the Company's operating subsidiaries in Russia and completion of downstream reconfiguration in 2H2017.

Decrease/(increase) in metal inventories
In 2018, comparative effect of change in metal inventory amounted to **USD 626 million** resulting in an increase of cost of metal sales, driven by the following:
- +USD 510 million – comparative effect of change in finished goods inventories owing primarily to the sale of palladium stock accumulated in 2017;
- +USD 116 million – comparative effect of slower growth of work-in-progress inventory relative to the prior year that resulted in cost increase.

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

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

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

Selling and distribution expenses *(USD million)*

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

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

General and administrative expenses *(USD million)*

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

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

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

Other operating income and expenses *(USD million)*

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

USD 95 mln

other operating expenses in 2018

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

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

Finance costs *(USD million)*

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

USD 580 mln

finance costs in 2018

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

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

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

Income tax expense

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

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

Income tax expense *(USD million)*

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

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

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

EBITDA *(USD million)*

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

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

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

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

Statement of cash flows *(USD million)*

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

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

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

Capital investments breakdown by project *(USD million)*

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

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

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

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

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

Debt and liquidity management *(USD million)*

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

2018 milestones

January 29, 2018

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

November 30, 2018

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

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

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

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