





pendix

TRANSPORT

Polar Transport Division

Murmansk
Transport DivisionArkhangelsk
Transport DivisionKrasnoyarsk
Transport DivisionBystrinsky
Transport DivisionYenisey River Shipping
Company (81.99% stake)Krasnoyarsk River Port
(89.3% stake)

Lesosibirsk Port (51% stake)

Norilsk Airport
(100% stake)NordStar Airlines
(100% stake)

Norilsk Avia (100% stake)

Nor Nickel- Yenisey River
Shipping Company (100%)**MINING
AND METALLURGICAL**

Polar Division

Medvezhy Ruchey
(100% stake)

Kola MMC (100% stake)

GRK Bystrinskoye
(50.01% stake)Norilsk Nickel Harjavalta OY
(Finland, 100% stake)Nkomati Nickel Mine (South
Africa, 50% stake)**ENERGY**

Norilskenergo Division

NTEK (100% stake)

Norilskgazprom
(100% stake)

TTK (100% stake)

Norilsktransgaz
(100% stake)

Arctic-Energo (100% stake)

RESEARCHGipronickel Institute
(100% stake)

GEOLOGICAL EXPLORATION

Norilskgeologiya (100% stake)

Vostokgeologiya (100% stake)

SUPPORTING BUSINESS

Norilsk Support Complex (100% stake)

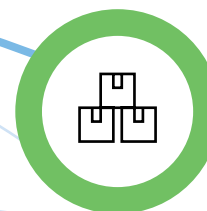
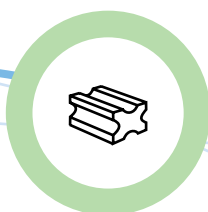
Polar Construction Company
(100% stake)

Norilsknickelremont (100% stake)

Pechengastroy (100% stake)

Nornickel – Shared Services Centre
(100% stake)**SALES AND DISTRIBUTION**

NORMETIMPEX (100% stake)

Metal Trade Overseas SA
(Switzerland, 100% stake)Norilsk Nickel (Asia) Limited
(Hong Kong, 100% stake)Norilsk Nickel USA Inc.
(USA, 100% stake)Norilsk Nickel Metals Trading
(Shanghai) Co., Ltd. (China, 100%
stake)

THE GROUP STRUCTURE: MAIN ASSETS¹

¹/Ownership Group in subsidiaries is indicated
from the authorised capital (direct) as of December 31, 2019.
(GRK Bystrinskoye is shown effective share).

OPERATING PERFORMANCE FOR THE PAST 10 YEARS

Norilsk Nickel group saleable metals production ¹	2010	2011	2012
Total nickel, t	295,840	295,098	300,340
including from own Russian feed	235,518	234,906	223,153
including from 3d parties feed	60,322	60,192	77,187
Total copper, t	388,027	377,944	363,764
including from own Russian feed	365,698	362,854	344,226
including from 3d parties feed	22,329	15,090	19,538
Total palladium, koz	2,855	2,806	2,732
including from own Russian feed	2,723	2,704	2,624
including from 3d parties feed	132	102	108
Total palladium, koz	692	696	683
including from own Russian feed	663	672	658
including from 3d parties feed	29	24	25
Polar division and kola mmc (russia)			
Nickel, t	235,518	237,227	233,632
Polar division	124,200	124,000	124,000
Kola MMC	111,318	113,227	109,632
including from own Russian feed	111,318	110,906	99,153
Copper, t	365,698	363,460	352,466
Polar division	309,320	303,940	295,610
Kola MMC	56,378	59,520	56,856
including from own Russian feed	56,378	58,914	48,616
Palladium, koz	2,723	2,704	2,628
Polar division	2,053	2,038	1,989
Kola MMC	670	666	639
including from own Russian feed	670	666	635
Platinum, koz	663	672	660
Polar division	529	536	529
Kola MMC	134	136	131
including from own Russian feed	134	136	129

^{1/} Total amounts may vary from the sum of numbers due to arithmetical rounding. The production results of Nkomati are not included in the total amounts of the Group.

2013	2014	2015	2016	2017	2018	2019
285,292	274,248	266,406	235,749	217,112	218,770	228,687
219,273	223,224	220,675	196,809	210,131	216,856	225,204
66,019	51,024	45,731	38,940	6,981	1,914	3,482
371,063	368,008	369,426	360,217	401,081	473,654	499,119
345,737	345,897	352,766	344,482	397,774	473,515	498,838
25,326	22,111	16,660	15,735	3,307	139	281
2,662	2,752	2,689	2,618	2,780	2,729	2,922
2,529	2,582	2,575	2,526	2,728	2,729	2,919
133	170	114	92	52	0	3
650	662	656	644	670	653	702
604	595	610	610	650	653	700
46	67	46	34	20	0	2
231,798	228,438	222,016	182,095	157,396	158,005	166,265
122,700	122,390	96,916	50,860	0	0	0
109,098	106,048	125,100	131,235	157,396	158,005	166,265
96,573	100,834	123,335	126,937	155,110	157,519	166,265
359,102	354,943	355,707	350,619	387,640	436,201	442,682
296,760	297,552	292,632	280,347	306,859	353,131	355,706
62,342	57,391	63,075	70,272	80,781	83,070	86,976
48,977	48,345	60,134	63,542	78,587	82,987	86,976
2,580	2,660	2,606	2,554	2,738	2,671	2,868
2,006	2,065	1,935	1,703	956	987	1,042
574	595	671	851	1,782	1,684	1,826
523	517	640	815	1,737	1,684	1,826
627	627	622	622	660	642	690
504	500	488	449	259	260	251
123	127	134	173	401	381	439
100	95	122	159	385	381	439

Norilsk Nickel group saleable metals production ¹	2010	2011	2012
Grk Bystrinskoye (Russia, Zabaykalsky krai)²			
Copper (in concentrate) t,	0	0	0
Gold (in concentrate), koz	0	0	0
Iron ore concentrate t	0	0	0
Norilsk Nickel Harjavalta (Finland)			
Nickel, t	49,159	48,525	45,518
including from own Russian feed	0	0	0
Copper, t	11,279	5,681	1,006
including from own Russian feed	0	0	0
Palladium, koz	48	34	21
including from own Russian feed	0	0	0
Platinum, koz	15	12	9
including from own Russian feed	0	0	0
Nkomati (South Africa)³			
Nickel, t	5,525	5,815	9,624
Copper, t	3,082	2,927	4,594
Palladium, koz	23	24	32
Platinum, koz	7	9	12
Norilsk Nickel Tati (Botswana)⁴			
Nickel, t	17,401	11,163	9,346
Copper, t	11,050	8,803	10,292
Palladium, koz	84	68	83
Platinum, koz	14	12	14
Lake Johnston (Australia)			
Nickel, t	0	0	8,975

1/ Norilsk Nickel Group owns 50.01% of Bystrinsky GOK (Chita Copper Project). Production results are shown metal in concentrate for sale on 100% basis and fully consolidated in total operational results. The concentrator at the Bystrinsky project was launched in 2018 as part of the hot commissioning stage and was fully commissioned in 2019.

2/ Production results report metal contained in saleable concentrate on a 50% basis and are not consolidated in the Group's total operating results. In 2019, the Group and its operating partner, African Rainbow Minerals, reached an agreement to scale down production at Nkomati Nickel Mine during 2020. As part of this process, the partners will elaborate in due course a plan contemplating the cessation of the mining operations and the placing of the mine in care and maintenance.

3/ The sale of the asset was closed in 2015.

4/ XX

	2013	2014	2015	2016	2017	2018	2019
	0	0	0	0	0	19,417	43,489
	0	0	0	0	0	89	177
	0	0	0	0	0	346	1,311
	44,252	42,603	43,479	53,654	59,716	60,765	62,422
	0	0	424	19,012	55,021	59,337	58,939
	6,549	10,629	13,048	9,598	13,441	18,036	12,948
	0	0	0	593	12,328	17,980	12,667
	39	74	78	64	42	58	54
	0	0	0	8	35	58	51
	16	31	33	22	10	11	12
	0	0	0	2	6	11	9
	11,920	11,359	11,350	8,486	8,006	6,597	6,485
	5,034	4,938	5,301	4,007	4,504	3,055	3,419
	46	48	53	40	46	33	33
	20	19	20	15	20	13	14
	12,215	6,416	3,207	911	0	0	0
	5,412	2,436	671	0	0	0	0
	43	18	5	0	0	0	0
	7	4	1	0	0	0	0
	2,826	0	0	0	0	0	0

MINERAL RESOURCES AND ORE RESERVES

Measured and indicated resources / proven and probable reserves as of December 31, 2019 ¹	Ore kt	Metal grade			
		Ni%	Cu%	Pd g/t	Pt g/t
Taimyr Peninsula					
Proven and probable reserves	672,815	0.92	1.72	4.19	1.11
Proven reserves					
Talnakh ore field, including	321,482	0.79	1.53	3.78	1.02
rich	50,946	2.52	3.12	6.25	1.29
cuprous	17,118	0.96	3.88	9.48	2.29
disseminated	253,418	0.43	1.05	2.90	0.88
Norilsk-1 deposit (disseminated ore)	20,156	0.35	0.50	3.88	1.57
Probable reserves					
Talnakh ore field, including	309,474	1.13	2.10	4.63	1.13
rich	78,140	2.91	3.96	7.15	1.40
cuprous	61,096	0.75	3.15	7.06	1.84
disseminated	170,238	0.46	0.88	2.60	0.75
Norilsk-1 deposit (disseminated ore)	21,703	0.28	0.36	4.29	1.73
Measured and indicated resources	1,698,853	0.69	1.30	3.53	1.00
Talnakh ore field, including	1,553,511	0.73	1.39	3.52	0.96
rich	111,927	3.24	4.26	7.98	1.60
cuprous	66,249	0.97	4.03	9.23	2.36
disseminated	1,375,335	0.52	1.03	2.88	0.84
Norilsk-1 deposit (disseminated ore)	145,342	0.30	0.38	3.66	1.43
Inferred resources	438,473	0.85	1.73	4.21	1.09
Talnakh ore field	437,405	0.85	1.73	4.22	1.09
Norilsk-1 deposit (disseminated ore)	1,068	0.28	0.28	3.69	1.46
Kola Peninsula (disseminated ore)					
Proven and probable reserves	84,682	0.62	0.30	0.03	0.02
Proven ore reserves	43,231	0.58	0.25	0.03	0.02
Probable reserves	41,451	0.66	0.36	0.03	0.02
Measured and indicated resources	320,943	0.69	0.33	0.05	0.03
Inferred resources	143,625	0.63	0.31	0.04	0.03

		Contained metal					
Au g/t	6 PGM g/t	Ni kt	Cu kt	Pd koz	Pt koz	Au koz	6 PGM koz
0.24	5.55	6,176	11,598	90,585	23,967	5,200	119,987
0.23	5.00	2,539	4,906	39,038	10,508	2,330	51,705
0.25	7.92	1,285	1,589	10,235	2,114	409	12,965
0.63	11.91	164	665	5,216	1,261	348	6,553
0.19	3.95	1,090	2,652	23,587	7,133	1,573	32,187
0.17	5.73	71	101	2,513	1,019	111	3,710
0.26	6.05	3,505	6,512	46,041	11,232	2,625	60,149
0.25	9.06	2,271	3,094	17,951	3,525	625	22,757
0.51	9.12	456	1,923	13,858	3,618	1,008	17,914
0.18	3.56	778	1,495	14,232	4,089	992	19,478
0.19	6.34	61	79	2,993	1,208	134	4,423
0.21	4.74	11,778	22,167	193,056	54,456	11,428	259,157
0.21	4.68	11,349	21,618	175,939	47,775	10,715	233,986
0.29	10.12	3,624	4,772	28,722	5,746	1,054	36,401
0.66	11.85	640	2,669	19,666	5,030	1,397	25,229
0.19	3.90	7,085	14,177	127,551	36,999	8,264	172,356
0.15	5.39	429	549	17,117	6,681	713	25,171
0.25	5.53	3,707	7,585	59,401	15,375	3,526	77,899
0.25	5.52	3,704	7,582	59,274	15,325	3,522	77,632
0.13	7.78	3	3	127	50	4	267
0.01	0.05	524	256	78	51	24	130
0.01	0.05	250	107	40	29	12	70
0.01	0.05	274	149	38	22	12	60
0.02	0.08	2,204	1,070	480	307	174	846
0.01	0.07	905	446	184	121	60	320

Measured and indicated resources / proven and probable reserves as of December 31, 2019 ¹	Ore kt	Metal grade			
		Ni%	Cu%	Pd g/t	Pt g/t
Australia (Honeymoon Well)					
Measured and indicated resources (nickel sulfide ores)	173,300	0.68	0	0	0
Inferred resources (nickel sulfide ores)	11,900	0.68	0	0	0
Inferred resources (nickel laterite ores)	339,000	0.81	0	0	0
TOTAL RUSSIAN ASSETS					
Total proven and probable reserves	757,497	0.88	1.56	3.72	0.99
Total measured and indicated resources	2,019,796	0.69	1.15	2.98	0.84
Total inferred resources	582,098	0.79	1.38	3.18	0.83
TOTAL RUSSIAN AND INTERNATIONAL ASSETS					
Total proven and probable reserves	757,497	0.88	1.56	3.72	0.99
Total measured and indicated resources	2,193,096	0.69	1.06	2.74	0.78
Total inferred resources	932,998	0.80	0.86	1.99	0.52

MINERAL RESERVES AND RESOURCES as of June 30, 2019 ²	Ore kt	Metal grade			
		Ni%	Cu%	Co%	4PGM g/t
South Africa (Nkomati)					
Proven and probable reserves	7,580	0.29	0.11	0.02	0.90
Measured and indicated resources	172,670	0.35	0.14	0.02	0.94
Inferred resources	46,350	0.40	0.13	0.02	0.97

Notes:

- 1/ Data regarding the mineral resources and ore reserves of the deposits of the Taimyr and Kola peninsulas were classified according to the Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC code), created by the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists, and the Minerals Council of Australia, subject to the terminology recommended by the Russian Code for Public Reporting of Exploration Results, Mineral Resources, Mineral Reserves (NAEN Code).
Proven and probable ore reserves are included in mineral resources.
Data regarding the reserves and resources is based on the balance-sheet reserves of A, B, C1 and C2, categories (according to the terminology of the State Committee for Mineral Reserves) as of the end of the given calendar year.
The six platinum group metals (PGMs) are platinum, palladium, rhodium, ruthenium, osmium, and iridium. The four elements are platinum, palladium, rhodium and gold.
Ore losses applied ranged from 1.6 % to 26% and dilution from 6% to 31.9%.
Excluding deposits in Zabaykalsky Region.
Figures given as "Total" may differ from the sum of individual numbers due to rounding. Certain values may in some instances vary slightly from previously published values.
- 2/ The Company owns 50% of Nkomati. Nkomati's mineral reserves and resources are not included Group's total amounts.

		Contained metal					
Au g/t	6 PGM g/t	Ni kt	Cu kt	Pd koz	Pt koz	Au koz	6 PGM koz
0	0	1,180	0	0	0	0	0
0	0	81	0	0	0	0	0
0	0	2,746	0	0	0	0	0
0.21	4.93	6,700	11,854	90,663	24,018	5,224	120,117
0.18	4.00	13,982	23,237	193,536	54,763	11,602	260,003
0.19	4.18	4,612	8,031	59,585	15,496	3,586	78,219
0.21	4.93	6,700	11,854	90,663	24,018	5,224	120,117
0.16	3.69	15,162	23,237	193,536	54,763	11,602	260,003
0.12	2.61	7,439	8,031	59,585	15,496	3,586	78,219

Contained metal			
Ni kt	Cu kt	Co kt	4 elements koz
22	8	1	219
602	236	32	5,214
188	62	8	1,438

MEASUREMENT UNITS AND CURRENCY EXCHANGE RATES

Measurement units

	Length		Area		Weight
1 km	0.6214 mi	1 sq m	10.7639 sq ft	1 kg	2.2046 lb
1 m	3.2808 ft	1 sq km	0.3861 sq mi	1 metric tonne	1,000 kg
1 cm	0.3937 in	1 ha	2.4710 acres	1 short tonne	907.18 kg
1 mi	1.609344 km	1 sq ft	0.09290304 sq m	1 troy ounce	31.1035 g
1 foot	0.3048 m	1 sq m	2.589988 sq km	1 lb	0.4535924 kg
1 in	2.54 cm	1 acre	0.4046873 ha	1 g	0.03215075 oz t

Currency exchange rates in 2015–2019

Exchange rates used to translate the costs denominated in rouble

Index	2015	2016	2017	2018	2019
Average rate Russian Rouble / US Dollar for the year ended 31 December	60.96	67.03	58.35	62.71	64.74

GLOSSARY

Anode. Crude metal (nickel or copper) obtained from anode smelting and fed for electrolytic refining (electrolysis) whereby it is dissolved.

Refinement. The process of extracting high purity precious metals through their separation and removal of impurities.

Rich ores. Ores with high sulphide content (over 70%) and the following metal grades: 2–5% for nickel, 2–25% for copper, and 5–100 g/t for platinum group metals.

Probable ore reserves. Estimated based on the economically mineable part of indicated and, in some circumstances, measured mineral resources, including possible dilution and losses during mining operations.

Disseminated ores. Ores containing 5% to 30% sulphides, with the following metal grades: 0.2–1.5% for nickel, 0.3–2% for copper, and 2–10 g/t for platinum group metals.

Leaching. Selective dissolution of one or several components of the processed solid material in organic solvents or water solutions of inorganic substances. Kinds of leaching: acid leaching (leaching with acids as reagents), chlorine leaching.

Proven ore reserves. Estimated based on the economically mineable part of measured mineral resources, including possible dilution and losses during mining operations.

Metal extraction. The ratio between the quantity of a component extracted from the source material and its quantity in the source material (as a percentage or a fraction).

Cathode. Pure metal (nickel or copper) obtained as a result of electrolytic refining of anodes.

Cake. Solid residue from filtering pulp during leaching of ores, concentrates or metallurgical intermediates, and purification of processing solutions.

Conversion. Oxidation process to turn matte into converter matte (in smelting copper-nickel concentrates) or blister copper (in smelting copper concentrates) and remove slag (carbon, sulphur, iron and other impurities).

Concentrate. A product of ore concentration with a high grade of the extracted mineral, which gives its name to the concentrate (copper, nickel, etc.).

Cuprous ores. Ores containing 20% to 70% sulphides, with the following metal grades: 0.2–2.5% for nickel, 1.0–15.0% for copper, 5–50 g/t for platinum group metals.

Roasting. Heating ore to high temperatures to trigger chemical changes that enable subsequent metal recovery processes.

Concentration. Artificial improvement of metallurgical feedstock mineral grades by removal of a major portion of waste rock not containing any valuable minerals.

Oxide. A compound of a chemical element with oxygen.

Tailings pit. A complex of hydraulic structures used to receive and store mineral waste / tailings.

Vanyukov furnace. An autogenous smelter for processing concentrates, where smelting is performed in a bath of slag and matte, with intensive injection of air-oxygen mixture. The heat from oxidation reactions is actively used in the process.

Flash smelter. An autogenous smelter for processing dry concentrates, where the smelted substance is finely ground feedstock mixed with a gaseous oxidiser (air, oxygen), which holds melted metal particles suspended. The heat from oxidation reactions is actively used in the process.

Fluidised bed furnace. A furnace where solid particles are intensively mixed under a fluidising impact of heated gas (air, oxygen or flue gases) flowing through the bed of grainy material (powder, granules).

Pyrrhotite concentrate. By-product of copper-nickel ore concentration.

Sublevel caving. An underground mining method in which ore blocks are developed from top to bottom via sublevels, and ore is extracted by blasting or causing sublevels to cave in. The voids formed after extraction get filled with fractured rock.

Pulp. A mixture of finely ground rock with water or a water solution.

Ore. Natural minerals containing metals or their compounds in economically valuable amounts and forms.

Mine. A mining location for extraction of ores.

Thickening. Separation of liquid (water) and solid particles in dispersion systems (pulp, suspension, colloid) based on natural gravity settling of solid particles in settlers and thickeners, or centrifugal settling of solid particles in hydrocyclones.

Metal grade. The ratio between the weight of metal in the dry material and the total dry weight of the material expressed as a percentage or grammes per tonne (g/t).

Sulphides. Compounds of metals and sulphur.

Drying. Removal of moisture from concentrates performed in designated drying furnaces (to a moisture level below 9%).

Tolling agreement. An agreement to process foreign feedstock with subsequent shipping of finished product. The feedstock and end product are exempt from customs duties.

Converter matte. A metallurgical intermediate produced as a result of matte conversion. Depending on the chemical composition, the following types of converter matte are distinguished: copper, nickel and copper-nickel.

Filtration. The process of reducing the moisture level of the pulp by forcing it through a porous medium.

Flotation. A concentration process where specific mineral particles suspended within the pulp attach to air bubbles. Poorly wettable mineral particles attach to the air bubbles and rise through the suspension to the top of the pulp, producing foam, while well wettable mineral particles do not attach to the bubbles and remain in the pulp. This is how the minerals are separated.

Tailings. Waste materials left over after concentration processes and containing mostly waste rock with a minor amount of valuable minerals.

Ore mixture. A mixture of materials in certain proportions needed to achieve the required chemical composition of the end product.

Slag. Melted or solid substance with a varying composition that covers the surface of a liquid product during metallurgical processes (resulting from ore mixture melting, melted intermediate processing and metal refining) and includes waste rock, fluxes, fuel ash, metal sulphides and oxides, and products of interaction between the processed materials and lining of melting units.

Sludge. Powder product containing precious metals settling during electrolysis of copper and other metals.

Matte. Intermediate product in the form of an alloy of sulphides of iron and non-ferrous metals with a varying chemical composition. Matte is the main product accumulating precious metals and metal impurities the feedstock contains.

Electrolysis. A series of electrochemical reduction-oxidation reactions at electrodes immersed in an electrolyte as a result of passing of an electric current from an external source.

Electrowinning. Electrodeposition of metal from ores that have been put in solution. Ore or concentrate is leached with agents that dissolve metal-containing minerals or the entire material, so that the metal is deposited on the cathode. The electrolyte is typically reused in the process. The end product is high-purity metal cathode.

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