Research and Development

Company Development Strategy

In 2015, in line with the RTD & FS Programme (Programme for Research, Technological Development and Feasibility Studies), the Company focused on several areas as specified below.

- conducting a feasibility study to optimise technical solutions for the Company's Development Strategy until 2025
- carrying out a feasibility study to choose the optimal design for the Company's copper refining facilities
- ensuring efficient implementation of integrated mining projects at Norilsk Nickel's Polar Division
- performing a feasibility study to choose the optimal decommissioning scheme for facilities of the Nickel Plant in the Company's Polar Division
- developing recommendations on the optimal ore output to ensure further growth of Talnakh Concentrator in 2018–2038
- conducting a feasibility study on the use of recently released capacities of Norilsk Concentrator for processing technogenic raw materials and disseminated ore of Zapolyarny Mine, including the shaft pillar at Zapolyarny open pit of the Norilsk-1 Field (Stages 1 and 2)
- drafting operating procedures for the projected production framework; developing alternative methods for processing copper electrorefining sludge at Kola MMC

Mining

- conducting a feasibility study on mining balance reserves of all types of ore at Oktyabrsky Mine
- conducting a feasibility study on mining balance reserves of all types of ore at Komsomolskaya mine of Komsomolsky Mine
- conducting a feasibility study on mining balance reserves of all types of ore at Taimyrsky Mine
- conducting a feasibility study on mining balance reserves of all types of ore at Mayak Mine
- carrying out a feasibility study to determine the best possible development option for the north-eastern section of Mayak mine of Komsomolsky Mine based on the mine's ore production projected at 1.0 mtpa
- conducting a research on the effect of addition agents and production waste on strength and rheological properties of backfill concrete used at the Company's Polar Division mines
- performing a feasibility study aimed at reducing backfilling costs at the Company's Polar Division mines by chemical additives application and higher industrial waste utilisation
- carrying out a feasibility study on the commercial development of the Maslovskoye Field
- drafting operating procedures for stripping and mining at the Maslovskoye Field
- performing a feasibility study to choose the optimal stripping and transportation procedures for the southern section of Severny–Gluboky Mine
- optimising final pit boundaries for mining operations at the Bystrinskoye Field

Concentration

- drafting operating procedures for Talnakh and Norilsk concentrators
- carrying out a feasibility study to choose an acceptable option for setting up a third field of Lebyazhye tailings pit
- drafting operating procedures for simultaneous processing of ore mixture of Polar Division's disseminated ore and Komsomolsky Mine's cuprous ore at Stage 3 of Talnakh Concentrator
- developing technical solutions for designing a magnetite concentrate drying unit at Bystrinsky Mining and Processing Plant's concentrator
- adjusting the project plan and methods for grinding gold, copper and iron ores at Bystrinskoye Field

Smelting

- updating the operating procedures to reconstruct flash smelters operated by Nadezhda Metallurgical Plant taking into account new feedstock composition and a ramp-up in nickel feedstock processing capacities of Polar Division
- developing recommendations to eliminate skull formation in Nadezhda Metallurgical Plant's flash smelters No. 1 and 2 while processing feedstock mixture of the current and projected composition
- drafting start-up and operating procedures for electrolytic cobalt production at Kola MMC
- carrying out a feasibility study to choose the optimal method to produce selective concentrates of precious metals from intermediate products supplied by Kola MMC and Polar Division
- drafting operating procedures to replace Stage 1 of sulphatisation with autoclave leaching at Kola MMC
- drafting operating procedures to process magnetic fraction at Kola MMC

Environmental protection

- designing technical solutions to be used in reconstructing sulphur production capacities at Polar Division's Nadezhda Metallurgical Plant
- drafting maximum permissible atmospheric emission standards for Polar Division's key production facilities
- monitoring the implementation of the Programme for Reducing Pollutant Emissions Using Briquetting and Briquette Melting at Kola MMC