

## Processing projects

### BYSTRINSKY GOK

Nornickel owns 50.01% in Bystrinsky GOK, with CIS Natural Resources Fund holding 39.32% and the remaining 10.67% belonging to Highland Fund.

### LOCATION

Gazimuro-Zavodsky District,  
Zabaykalsky Region

GRK Bystrinskoye (Bystrinsky GOK) is Nornickel's greenfield project, which includes an open-pit mine at the Bystrinskoye deposit; a mining and processing plant (MPP) with all associated infrastructure, including a power line and the 227 km Borzya–Gazimursky Zavod railway line (Nornickel owns 25%, the government -75%), as well as a rotation camp.

### Project overview

Bystrinsky GOK came online in 2019, ramping up to design capacity in 2020. Its EBITDA in 2020 was USD 717 million (up 100% vs 2019).

Balance (economic) ore reserves at year-end – 301 mln t, average metal content: Cu – 0.7%, Fe in magnetite concentrate – 22.4%, Au – 0.84 g/t<sup>1</sup>. Reserves life: 31 years.

#### 2020

##### Mining

**9.8** mln t of ore<sup>2</sup>

(Cu in concentrate – 63 kt, Au in concentrate – 241 koz, Fe in concentrate – 2.0 mln t)

##### Investments

**RUB 7.2** bn

(USD 98 mln)

#### 2021

##### Mining

**10** mln t of ore<sup>2</sup>

(Cu in concentrate – 65–70 kt, Au in concentrate – 230–240 koz, iron ore concentrate –1.8–2.0 mln t)

##### Investments

**RUB 9.3** bn

(USD 150 mln)

#### 2022

##### Mining

**10** mln t of ore<sup>2</sup>

(Cu in concentrate – 68–73 kt, Au in concentrate – 234.5–255 koz, Fe in concentrate – 2.0–2.3 mln t)

<sup>1</sup> According to the Russian classification (A + B + C1 + C2).

<sup>2</sup> Throughput

## TALNAKH CONCENTRATOR

The Talnakh Concentrator (Polar Division) processes rich, cuprous and disseminated ores from the Oktyabrskoye and Talnakhskoye deposits to produce nickel-pyrrhotite and copper concentrates. In 2020, the plant processed 10.9 mln t of ore, with nickel recovery in bulk flotation concentrate reaching 87.9% (+ 2.0% y-o-y).

### LOCATION

**Norilsk Industrial District,  
Krasnoyarsk Region**

### Project overview

The upgrade has been rolled out in three phases. Phase 1 was completed in 2015 and included the retrofit of existing flotation capacity and the replacement of flotation cells that were beyond their useful lives, in order to maintain the concentration capacity at 7.5 Mtpa. Phase 2 was completed in 2018 and involved the expansion of the main building, revamping of the reagent preparation building and construction of new ball mills and vertical mills, as well as the 1st Stage of the tailing dump, all of which helped to boost capacity to 10 Mtpa.

Plans for the 3rd Phase of the Talnakh Concentrator Upgrade include a capacity ramp-up to 18 Mtpa and construction of the tailing dump's 2nd Stage. The new concentration technology will increase recovery by 4–7% for all key metals. The project's completion is slated for 2023, reaching design capacity by 2024. In 2020, the project's CAPEX totalled RUB 2.8 billion (USD 38 million).

## NICKEL TANKHOUSE UPGRADE

### Project overview

Tankhouse 2 is part of Kola MMC, which produces nickel cathodes using the technology of nickel electrowinning from chlorine dissolved tube furnace nickel powder. The upgrade project provided for harnessing a more effective and cleaner nickel refining technology to increase its output of nickel cathodes to 145 ktpa. In Q1 2020, Nornickel commissioned all series of electrowinning cells. In Q2, Kola MMC's Chemical-and-Metallurgical Shop launched an alternative technology to process chlorine-leaching residues at the tankhouse, increasing the throughput and reducing work-in-progress in producing

precious metals from chlorine-leaching residues at Kola MMC and the Polar Division. The new technology will also help achieve the highest purity of metal and reduce air emissions. In 2020, the upgrade was completed, with investments for the period totalling RUB 1.4 billion (USD 18.6 million).

### LOCATION

**Monchegorsk, Murmansk Region**