

NORILSK NICKEL HARJAVALTA, FINLAND

Norilsk Nickel Harjavalta is Nornickel's wholly owned subsidiary, acquired by the Group in 2007. The Harjavalta facility processes Nornickel's Russian feedstock and nickel-bearing raw materials sourced from third-party suppliers.

Founded in 1959, it is Finland's only nickel refinery and one of the largest nickel producers in Europe. Harjavalta's capacity is 66 ktpa of nickel products.

The facility uses sulphuric acid leaching with metal recovery rates above 98%, which is a best practice in the global mining and metals industry.

In 2019, Norilsk Nickel Harjavalta accounted for 27%, 3% and 2% of the Group's total nickel, copper and PGM finished products, respectively.

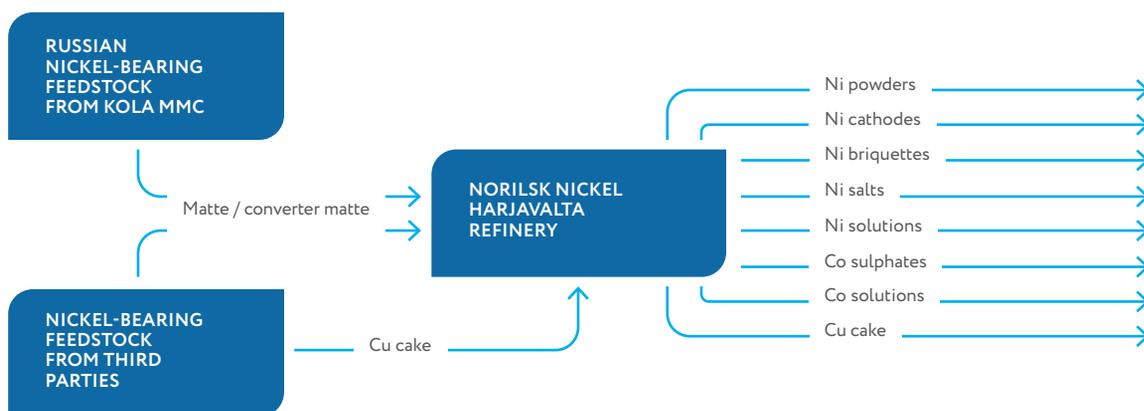
1 Norilsk Nickel Harjavalta Plant



SMELTING

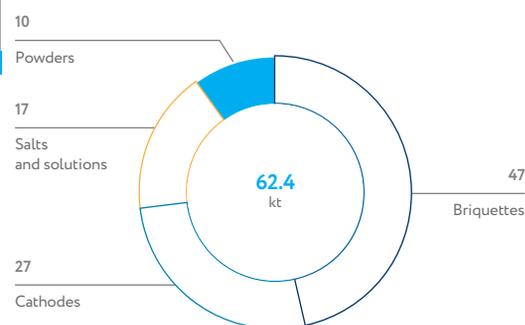
Facility's process chart

In 2019, the refining facilities of Kola MMC were gradually increasing their nickel feedstock supplies to Norilsk Nickel Harjavalta in line with the Group's downstream reconfiguration strategy. Third-party feedstock supplies, i.e., converter matte from Boliden and nickel salts from other suppliers, were regular and marginal in 2019. Metal recovery rates remained flat y-o-y.



In 2019, Norilsk Nickel Harjavalta produced 62 kt of saleable nickel (up 3% y-o-y), an all-time high for the refinery. 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 13 kt, down 28% y-o-y, while the output of saleable palladium in copper cake decreased by 8% y-o-y and platinum output increased by 5% y-o-y. The decrease in copper and palladium output was due to the start of copper cake shipments to the Polar Division for further processing.

Saleable nickel output by product in 2019 (%)



Products:

- Nickel cathodes and briquettes
- Nickel salts, powders, and solutions
- Cobalt sulphate and solutions
- PGM-bearing copper cake

Refining capacity utilisation (%)



Production volumes

Product	2017	2018	2019
Nickel, t	59,716	60,765	62,422
- from own Russian feedstock	55,021	59,337	58,939
Copper (in copper cake), t	13,441	18,036	12,948
- from own Russian feedstock	12,328	17,980	12,667
Palladium (in copper cake), koz	42	58	54
- from own Russian feedstock	35	58	51
Platinum (in copper cake), koz	10	11	12
- from own Russian feedstock	6	11	9