

# Transportation assets

## 2017 MILESTONES

Nornickel Group increased its stake in Krasnoyarsk River Port to 88.77% of the company's shares. The transactions were part of the strategy of Nornickel's transportation and logistics function, which focuses on boosting the efficiency and streamlining the management of the Group's transportation assets.

In March 2017, the second berth was put in operation at the transfer terminal in Murmansk, taking its container handling capacity to 1.5 mtpa. According to Marina Kovtun, Governor of the Murmansk Region, "one and a half million tonnes is a large transshipment volume that contributes to new jobs and the overall development of Murmansk Sea Port, helping to attract investors to the region and enhancing Murmansk's position as a key port in the Arctic Zone".

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. The new unit will be operating a 227 km private railway line, which was built under a public private partnership to connect Naryn (Borzya) and Gazimursky Zavod.

## Transportation and logistics assets



Given the exceptional location of our production facilities in relation to key supply bases and distribution markets, transport infrastructure and freight logistics are a primary focus for Nornickel.

Capitalising on their reliability and sophistication, the Company is well-positioned to address the most difficult tasks in freight deliveries and to ensure uninterrupted operations across its facilities.

Nornickel's transportation and logistics assets use various means of transportation and freight forwarding services, responding to freight logistics challenges faced by the Company and its customers.

The Company has a unique Arctic fleet comprising five Norilsk Nickel container vessels and one Yenisei heavy-duty ice-class tanker (ARC 7 under the PMPC classification). The vessels are able to break through 1.5 m thick Arctic ice without icebreaker support.

The **Yenisey tanker** is used to transport gas condensate from the Pelyatkinskoye Gas Condensate Field 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. In 2017, 66 voyages were made from Dudinka (vs 69 voyages in 2016), including 12 direct voyages to European ports (vs 11 voyages in 2016).

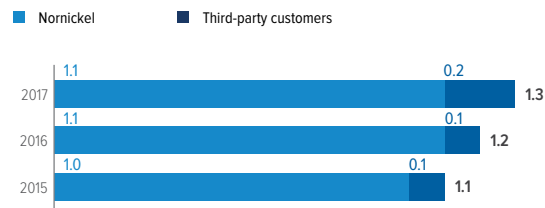
**Norilsk Avia** responds to industrial and social needs of the Norilsk Industrial District and the Dolgano-Nenets Municipal District of the Taimyr Peninsula. The company provides air transportation services related to operations of the Norilsk Nickel Group, emergency air medical services, search-and-rescue operations, and local passenger traffic..

**NordStar Airlines** is a rapidly developing aviation project launched on 17 December 2008, when the Board of Directors of Taimyr Air Company (a wholly owned subsidiary of MMC Norilsk Nickel) resolved to establish Moscow Branch of Taimyr Air Company along with the NordStar Airlines brand.

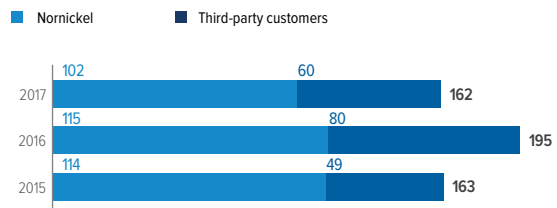
The company's fleet comprises 15 aircraft: nine Boeings 737-800, one Boeing 737-300 and five ATRs 42-500. With passenger traffic in excess of 1 million people per year, NordStar Airlines annually reaffirms its status of a major air carrier in the Siberian Federal District and nationwide. The air company's current route network covers over 30 cities in Russia and the CIS. Each year, NordStar operates seasonal charter flights from Moscow, St Petersburg and other cities.

## Cargo transportation in 2017

Dry cargo transportation by the Company's fleet // mtpa



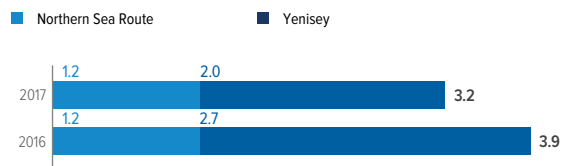
Transportation by Yenisey tanker // ktpa



Waterway cargo traffic at Murmansk terminal // mtpa



Waterway cargo traffic at Dudinka port // mtpa



In the reporting year, waterway cargo traffic at the Dudinka port saw a decline, mainly on the back of lower river sand shipments. In 2018, cargo volumes are expected to remain flat at the 2017 level.

Waterway cargo traffic at the Company's transfer terminal in Murmansk (Murmansk Transport Division) was 1.1 mt (vs 0.9 mt in 2016), with 162 vessels handled (vs 139 vessels in 2016), including 113 vessels on coastal voyages (vs 91 vessels in 2016) and 49 vessels on export and import voyages (vs 48 vessels in 2016). The increase in cargo traffic at the transfer terminal is driven by the changes in transshipment volumes of raw materials and end products after Polar Division's Nickel Plant was shut down. In 2018, the upward trend is expected to persist.

In 2017, the Company's own rail car and locomotive fleet carried 526.2 kt of cargo (vs 456.7 kt in 2016). In the reporting period, the terminal handled 14.3 thousand rail cars (vs 12.8 thousand in 2016) and 10.7 thousand road vehicles (vs 10.9 thousand in 2016). The increase in freight transportation by the Company's own rail car and locomotive fleet was due to the growing volumes of converter matte and, consequently, return traffic of empty cars.

During the upgrade of the Norilsk Airport in the summer of 2017, NordStar Airlines managed to ensure uninterrupted air services to passengers in the Norilsk Industrial District. Thanks to a professional and structured approach to the airport modernisation, the air carrier:

- organised transfer of passengers and their baggage;
- introduced a ticketing scheme to minimise anti-trust, transportation and social risks;
- developed a pricing methodology to make multi-flight air transportation with light aircraft more affordable to passengers.

# +15%

traffic growth of the Company's own rail car and locomotive fleet in 2017

The cost growth in 2017 was driven by investments in the modernisation of the Norilsk Airport as part of a nationwide target programme, acquisition of a portal crane for Polar Transport Division and machinery for the modernised terminal in Murmansk, along with scheduled repairs of sea vessels in Murmansk Transport Division and helicopters operated by Norilsk Avia.

## Investments in transportation and logistics assets

The cost growth in 2017 was driven by investments in the modernisation of the Norilsk Airport as part of a nationwide target programme, acquisition of a portal crane for Polar Transport Division and machinery for the modernised terminal in Murmansk, along with scheduled repairs of sea vessels in Murmansk Transport Division and helicopters operated by Norilsk Avia.

In 2017, Murmansk Transport Division completed the reconstruction of its transfer terminal. The programme provided for capital repairs of Berth No. 1, which are to be completed in 2018. Its scope also covers construction and fit-out of safety facilities to be continued in 2018. The Company purchased new cargo handling equipment and hoisting gear and also retrofitted some of its vessels. Solvo.TOS, a new process control system, was commissioned to optimise container handling procedures at the terminal. An information system for automation was also introduced to manage repairs of port machinery and equipment. Murmansk Transport Division plans to continue its IT improvement programme in 2018.

### Investments in transportation and logistics assets

Cost item	2016		2017	
	USD mln	RUB bn	USD mln	RUB bn
<b>Investments in transportation and logistics assets, including:</b>	<b>34.3</b>	<b>2.3</b>	<b>46.2</b>	<b>2.7</b>
Capital construction	17.9	1.2	22.2	1.3
New equipment	10.4	0.7	15.4	0.9
Other costs	6.0	0.4	8.6	0.5

At Polar Transport Division (Dudinka port), the Company completed the first phase of repairs at Berths No. 4 and 5 and engineering surveys for the repair of Berth No. 3 in 2017. The repair programme to prevent the moorage wall destruction is scheduled to be completed in 2018. The Company modernised a fire water line at the log yard and introduced an integrated safeguarding system at port facilities. Additionally, two Liebherr mobile cranes and a mobile crane boom were repaired, two Liebherr crane booms were purchased for replacement in 2018, and a hangar was acquired to repair mobile cranes. The Company also purchased 10 units of road vehicles and cargo handling equipment.

In 2017, Yenisey River Shipping Company continued working on shipbuilding at Krasnoyarsk Ship Repair Yard and engineering design of new shipbuilding facilities. The project was launched in 2017 to provide the Company with its own river vessels to replace

retiring ships. The USD 3.4–5.1 mln (RUB 0.2–0.3 bn) project is expected to be completed in 2019. An automatic fire extinguishing sprinkler system was installed in the administrative building. The work is ongoing to improve onshore infrastructural facilities and increase the level of traffic safety by installing CCTV and fuel monitoring systems on vessels.

In 2017, the Company continued improving logistics processes in its transportation facilities and units. For Krasnoyarsk River Port and Lesosibirsk Port, it was the first navigation period to use the Automated Cargo Logistics Management System (ACLMS) as a master management system. Despite certain challenges, the introduction of ACLMS improved coordination between transshipment ports, carriers and end customers and provided a single reporting platform for freight transportation by river. These efforts will continue.

## Production and sales

In 2017, 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.

### Product range

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

Over the last three years, Nornickel increased nickel supplies to segments other than stainless steel production by 32% (the 2017 supplies exceeded 100 kt of nickel), which was achieved by leveraging a focus strategy to boost sales to Chinese and Russian alloy and special steels makers, as well as by strengthening positions on China's electroplating market through the product range optimisation and extensive customer training. The Company also fostered cooperation with world-leading companies in the batteries segment.

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 is uniquely flexible when it comes to manufacturing, which enables it to factor in consumer preferences in developing its product portfolio.

Norilsk Nickel Harjavalta's nickel sulphate is rightly considered the industry benchmark and is widely used in battery manufacturing. The Company plans to proactively market briquettes, which are traditionally supplied to stainless steel manufacturers, among battery and precursor producers.

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.

The Company considers joint ventures to produce nickel- and cobalt-bearing value-added products for the battery segment to be a promising direction for expanding the product range and increasing production volumes.