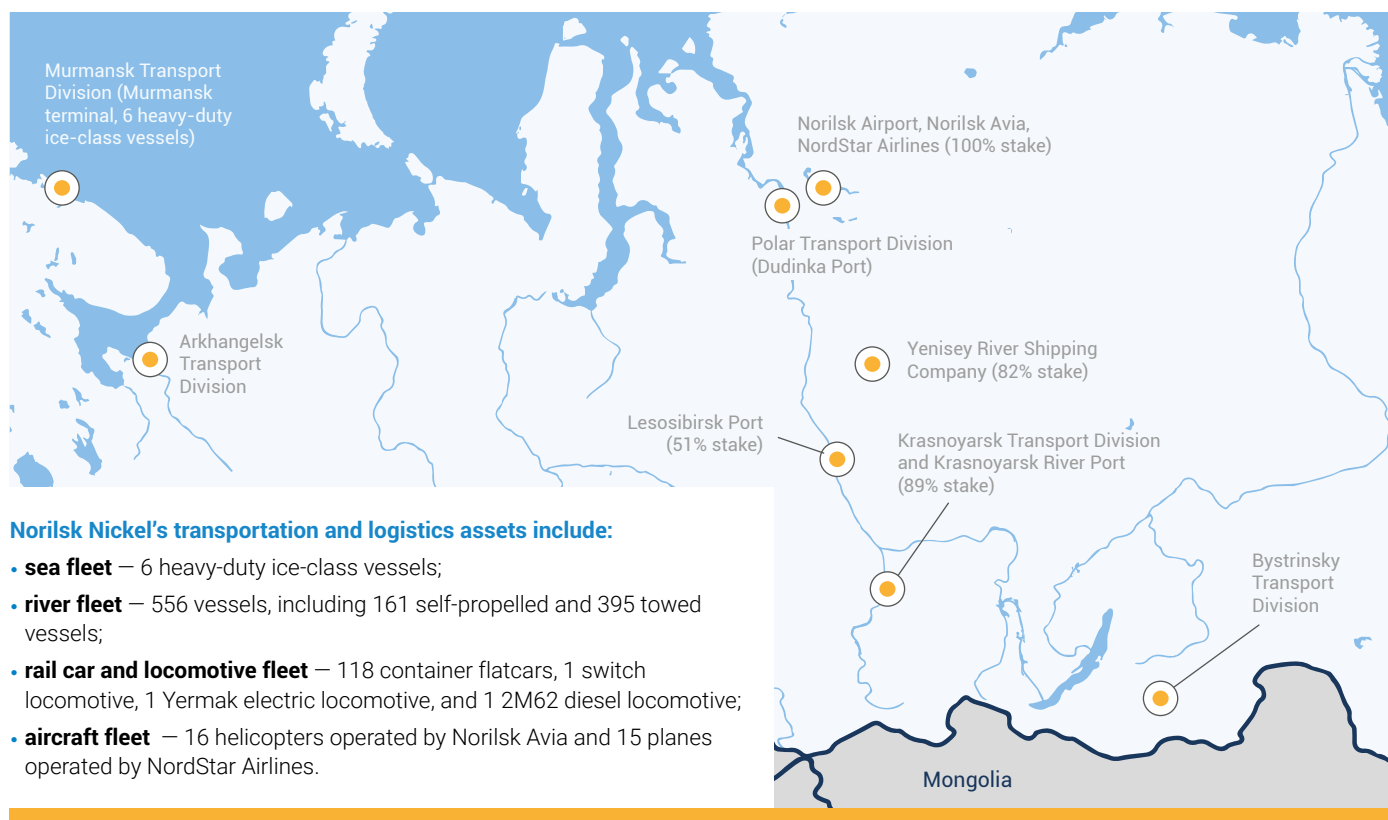


# TRANSPORTATION ASSETS



Nornickel owns modern transport infrastructure to successfully respond to any freight logistics challenges and ensure continuity and sustainability of operations. The Company's transportation and logistics assets embrace the full range of transportation and freight forwarding services.

## Freight shipping services



Nornickel has a unique Arctic fleet comprising five dry cargo vessels and one Yenisey heavy-duty ice-class tanker (ARC 7 under the classification of the Russian Maritime Register of Shipping). The vessels are capable of breaking through Arctic ice up to 1.5 m thick without icebreaker support. The Yenisey tanker is used to transport gas

condensate from the Pelyatkinskoye Gas Condensate Deposit to European ports and other destinations.

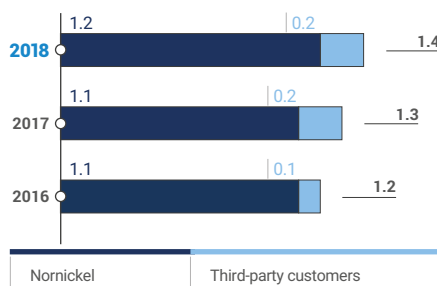
The Company's dry cargo fleet provides year-round freight shipping services between Dudinka, Murmansk, Arkhangelsk, Rotterdam, and Hamburg sea ports while also covering other destinations.

## 2018 milestones

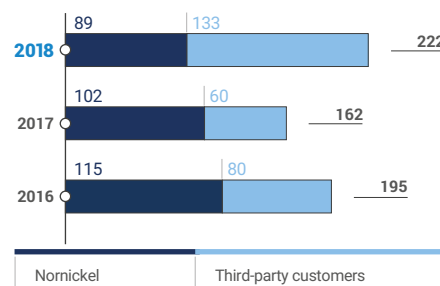


In 2018, 66 voyages were made from Dudinka (flat y-o-y), including 10 direct voyages to European ports (vs 12 voyages in 2017).

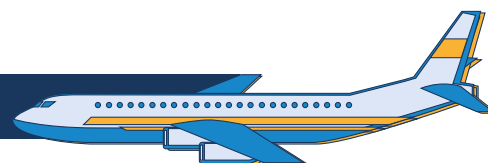
### Dry cargo transportation by the Company's fleet (mt)



### Transportation by Yenisey tanker (kt)



## Air transportation services



**Norilsk Avia** serves the transportation needs of local communities in the Norilsk and Taimyrsky Dolgano-Nenetsky districts of the Krasnoyarsk Territory. The company provides air services related to the operations of the Norilsk Nickel Group, emergency air medical assistance, search-and-rescue operations, and local passenger traffic.



**NordStar Airlines** is a rapidly developing aviation project launched in 2008. Its fleet comprises 15 aircraft. In 2018, for the second year running, NordStar Airlines successfully passed the IATA Operational Safety Audit and was added to the IOSA Registry. 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. In the reporting year, it carried over 110,000 residents of the Norilsk Industrial District during the third stage of the Norilsk Airport reconstruction.

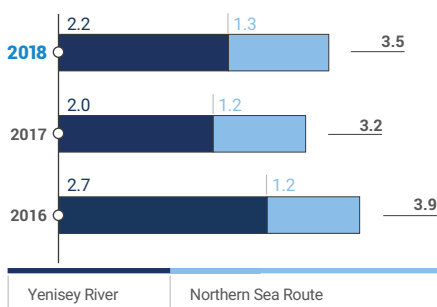


Located 36 km away from Norilsk, **Airport** plays an essential role in ensuring the region's transport accessibility as it connects the north of the Krasnoyarsk Territory with other Russian regions. The airport kept servicing passengers throughout the entire period of the runway reconstruction completed in 2018. The project was implemented as part of a public-private partnership formalised by an agreement signed between the Federal Air Transport Agency and Nornickel. This was the first of its kind initiative both in Russia and internationally, with the project delivered on schedule and to the highest quality requirements. The new 2,821 x 45 m runway is fully compliant with all the certification standards. The project also saw the upgrade of two taxiways and partial repairs of the concrete pavement in the apron for civil aircraft.

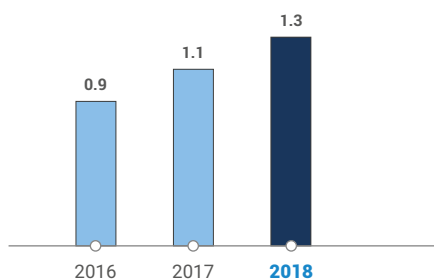


Transport divisions and ports

Waterway cargo traffic at Dudinka port (mt)



Waterway cargo traffic at Murmansk terminal (mt)



Polar Transport Division and Dudinka Port

are the key industrial facilities of Dudinka. Dudinka Port is the world's only port that gets flooded every year during the spring thaw and is accessible to sea and river vessels alike.

Located in the Far North, the port operates a seasonal service. From November to May when its water area and the Yenisey basin freeze over, Dudinka Port handles only sea vessels using icebreakers to de-ice the berths and provide support during manoeuvring and mooring operations. In May and June, during the flooding, the service is suspended to be resumed for river and sea vessels when ice flows pass and the water level goes down.

Dudinka Port is an essential link in the Company's production and supply chain: it tranships cargoes for the Norilsk Industrial District and Taimyr Peninsula, including goods for local residents (except for perishables and mail). In summer, river vessels deliver equipment and materials (sand, round timber, clinker, etc.) for process needs from Krasnoyarsk and Lesosibirsk, and sulphur to Krasnoyarsk. Throughout the year, including in winter months, sea vessels ship metal products and converter matte from Dudinka for further processing at Kola MMC.

Polar Transport Division carries out port operations using its own fleet of a river-class icebreaker, towboats, motorboats, a bunker barge, and a floating crane. To reduce its environmental footprint,

the division runs programmes to cut fuel consumption and prevent pollution of the Dudinka and Yenisey Rivers, while also investing in bioresource reproduction (release of fingerlings).

The year-round ice-free sea port of Murmansk is home to Nornickel's **Murmansk Transport Division**. With berth 2 put into operation in March 2017, the division's design cargo traffic capacity increased to 1.5 mtpa. The terminal reconstruction exercise included initiatives to repair the damage caused to aquatic bioresources.

Murmansk Transport Division's key functions are shipment of the Company's finished metal products from Murmansk to European ports, receipt of converter matte from Dudinka and its shipment by rail to Kola MMC, and delivery of empty containers, equipment and materials to Dudinka. In addition to sea transportation, Murmansk Transportation Division is engaged in freight forwarding, transshipment and storage of cargoes, and rail transportation between Murmansk and Monchegorsk.

The division's shipping department complies with international maritime conventions by ensuring environmentally friendly and safe sea transportation, with the vessels undergoing regular repairs and safety inspections.

**Arkhangelsk Transport Division** (Arkhangelsk) provides for a year-round transshipment of Nornickel's cargo via

Arkhangelsk sea port, which is conveniently linked to other Russian and foreign regions by road, air and rail.

### Krasnoyarsk Transport Division

coordinates operations at Krasnoyarsk and Lesosibirsk ports and Yenisey River Shipping Company, which operate on a seasonal basis due to the Yenisey River getting frozen in winter. When ice flows pass, the Group uses the ports to tranship cargoes to Dudinka, including crushed granite, clinker, materials, equipment and socially significant cargoes (as part of the Northern Supply Haul programme). Krasnoyarsk Transport Division engages in initiatives to reduce fuel consumption and prevent processing of lump sulphur within Krasnoyarsk.

The bulk of the Group's and third-party cargo is transported along the **Yenisey by Yenisey River Shipping Company**, which owns a sizeable fleet of over 500 river vessels, including self-propelled and towed ones. The fleet operates in the Yenisey, Angara, Nizhnyaya and Podkamennaya Tunguska Rivers and their largest tributaries.

One of the largest Yenisey ports, **Krasnoyarsk River Port** tranships cargo delivered by road, rail and water transport, provides storage services and transports cargo using private railway lines. The port has three operating areas – Yenisey, Zlobino and Peschanka.

**Lesosibirsk Port** operates in the port of Lesosibirsk located 40 km down from the confluence of the Angara and Yenisey Rivers and below the rapids that are hard to navigate. This secures the delivery of the Group's cargo in case of low water on the Yenisey and high vessel utilisation rates. The port boasts the following unique advantages:

- it is the only dedicated port on the Yenisey River that can process and, if required, store explosives;
- it offers year-round service (rail-road and road-rail transshipment services in between the navigation periods);
- it has access to the Baikal (M53) federal highway via the Krasnoyarsk-Yeniseysk Highway;
- the railway to Achinsk connects Lesosibirsk and the Trans-Siberian Railway.

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. Since 2018, Bystrinsky Transport Division has been carrying out maintenance of the 227 km Naryn (Borzya) – Gazimursky Zavod private railway line built under a public private partnership.

A decrease in total expenses y-o-y is due to lower costs of constructing a berth at Murmansk Transport Division. Most works were completed in 2016–2017, with the berth put into operation in March 2017.

A major increase in other expenses in 2018 is attributable to scheduled repairs of four Murmansk Transport Division sea vessels. On top of that, the reporting year saw the Company complete scheduled repairs of vessels and overhauls of several berths, install security systems, upgrade the communications systems and introduce fuel consumption controls.

### Investments in transportation and logistics assets

Cost item	2016		2017		2018	
	USD mln	RUB bn	USD mln	RUB bn	USD mln	RUB bn
<b>TOTAL</b>	<b>34.3</b>	<b>2.3</b>	<b>46.2</b>	<b>2.7</b>	<b>35.1</b>	<b>2.2</b>
Capital construction	17.9	1.2	22.2	6.4	7.1	0.4
Purchase of equipment	10.4	0.7	15.4	0.9	12.8	0.8
Other costs	6.0	0.4	8.6	0.5	15.9	1.0