



In 2017, the Putoransky State Nature Reserve kept implementing projects selected under Nornickel’s World of New Opportunities charitable programme.

Save the Bighorn Together

An ambitious programme to protect the endangered species of the bighorn found in the Putorana Plateau only and listed on Russia’s Red Data Book. The Company provides funding for volunteer training at the Surveillance School, ground research to collect data on the bighorn population, and Putorany. Bighorn. People festival of friends. The project’s funding totals some USD 86,000 (RUB 4.99 mln).

Norilsk Lakes to Norilsk People

Norilsk Lakes to Norilsk People project implemented since 2013 seeks to preserve the Big Norilsk Lakes, a unique ecosystem of subarctic mountains. During that time, Nornickel provided funding for the recreational fisheries in the upper part of the Pyasina River basin, tourist and trekking infrastructure, construction of a camping station at Lama Lake and a base station at Sobachye Lake. In 2017, as part of the project, the Company allocated over USD 17,000 (around RUB 1 mln) to finance an environmental and educational summer camp at Lake Lama for students of the volunteer school.



The Pasvik Nature Reserve is home to rare species listed on the international and Russia’s Red Data Books. Since 2006, as part of the contract signed with Kola MMC, the Pasvik Nature Reserve has been carrying out an ecological assessment of the natural environment in the area of Pechenganickel Plant (Zapolyarny, Nickel and their suburbs, including the Pasvik State Nature Reserve), and developing a long-term environmental monitoring programme.

Nornickel supports scientific research carried out by the nature reserve, its efforts to protect natural and cultural heritage, promote tourism and environmental education. The Company helps establish an international natural historical open-air museum on the Varlam island. Nornickel sponsored the book called The Varlam Island – the Pearl of Pasvik.

Key projects of the Paskvik Nature Reserve supported by Nornickel

Visitor centre for tourists and researchers

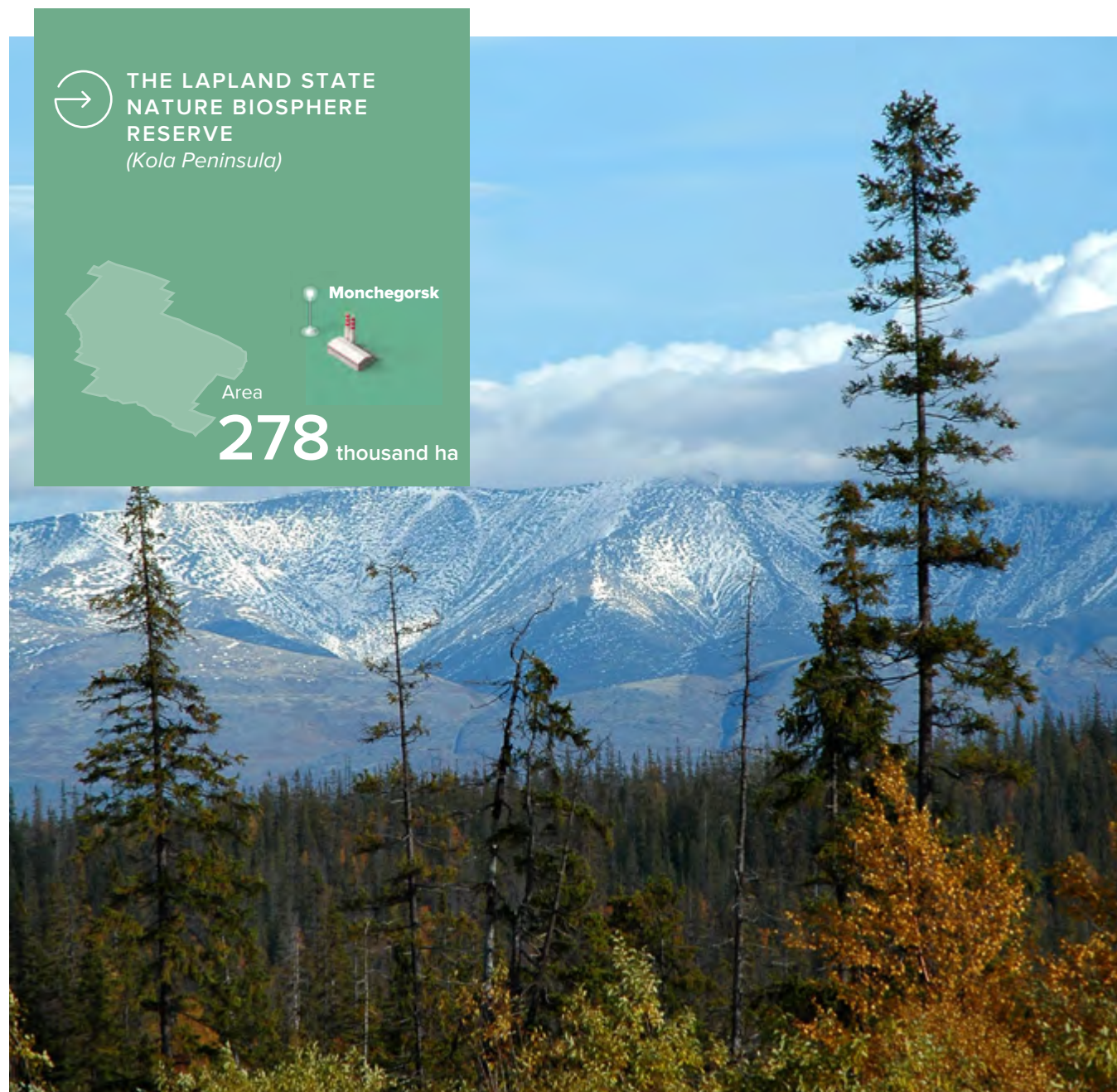
The visitor centre of the Pasvik Reserve featuring a permanent environmental exposition was officially opened in January 2017 in the settlement of Nickel, Pechengsky District. The visitor centre hosts ecological seminars and conferences, serving as a modern platform for discussing international cooperation issues. In 2011–2016, the Company allocated over USD 1.3 mln (RUB 77 mln) to the project. The visitor centre currently hosts ecological lessons for schoolchildren, exhibitions, lectures, discussions, and forums of various international organisations.

Young scientist training course

Over the last ten years, the reserve serves as a base for a summer camp for schoolchildren involved in various research projects (study of soil and water composition, bird ringing, etc.). The project’s annual funding is over USD 17,000 (some RUB 1 mln).

[For more details on other projects of World of New Opportunities programme](#)

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The Lapland State Nature Biosphere Reserve is one of the largest protected areas in Europe covering 278,000 ha. Established to save the wild reindeer from extinction, it now boasts over 1,000 reindeer, the largest reindeer herd in the Northern Europe. The European beaver population has also been successfully restored. Since 2002, the Lapland Biosphere Reserve has entered into contracts to reclaim disturbed natural environment in the areas affected by multi-year emissions from Severonickel Plant, and monitor areas adjacent to Monchegorsk

site and the Lapland Biosphere Reserve. The data obtained during a scientific research provided a basis for the subsequent contractual work to reclaim disturbed lands, and bring about sanitary and fire protection improvements in the forest areas. The Company also provided financial aid for the Lapland Biosphere Reserve to make a new nature trail and publish books about Oleg Semyonov-Tyan-Shansky and Herman Kreps, the reserve founders. In 2017, the total funding of the nature reserve projects exceeded USD 195,000 (RUB 11.4 mln).

Environmental recovery programmes

Aquatic bioresources

In 2017, to compensate for the damage done to water bodies of the Yenisey River during the implementation of the Talnakh Concentrator upgrade and retrofit project and sand production at the Seredysh Island deposit, the Company grew and released over 316,000 Siberian sturgeon fingerlings into the Yenisey River. To compensate for damage to water bodies during the construction of a transfer terminal in Murmansk, in 2017, Nornickel released over 235,000 salmon fingerlings into the Northern Fishery Basin.

Landscaping

In 2017, Nornickel launched a pilot project utilising new landscaping technologies to establish sustainable grass cover in the disturbed areas. Perennial grasses and mixed grass crops were planted on the experimental 1 ha land plot close to Nadezhda Metallurgical Plant using a hydroseeding technology and complex additives adapted to northern conditions. The project's financing amounted to some USD 43,000 (RUB 2.5 mln).

Hydroseeding has a number of advantages over traditional planting method, namely quick landscaping and the possibility to cover remote locations, which is especially useful for slopes and hard-to-reach areas. Grass can be sown on virtually any surface featuring a difficult terrain. Experiments proved successful even for such technogenic surfaces as slag and concrete.

The Company regularly allocates funds for landscaping in the regions of operation. Since 2003, Kola MMC, upon recommendation from the nature reserves, has rehabilitated 100 ha of area in Monchegorsk, Zapolyarny towns and Nickel settlement. Kola MMC has had approximately one million trees and bushes planted, including

a pilot project to restore damaged land adjacent to the Company's site together with the Kola Science Centre of the Russian Academy of Sciences. In 2017, the value of the contract signed with the Lapland Biosphere Reserve was some USD 60,000 (RUB 3.5 mln).

In summer 2017, the Company joined in the Norilsk municipal authorities' effort to revamp the city's public spaces doing some urban greening and sanitary improvements. The Company also contributed to the roadside clean-up, water body protection, waterfront landscaping and facelift of several camping sites.

Sanitary clean-up

In 2017, Nornickel carried out a clean-up, land improvement, revamp of warehouses, and improvement of territories assigned to the Company by the order of the Dudinka Administration. Nornickel also carried out post-flooding recovery to clean the coasts and water protection zones along the water bodies.

Environmental education

Other environmental developments in 2016 included the Ecological Marathon launched by the Company in Norilsk as part of its Plant of Goodness corporate volunteer programme.

In 2017, Norilsk Nickel's total expenditure in this area exceeded USD 7,000. The Company's volunteer teams polled over 900 respondents about their ecological habits, produced about 50 items from recycled materials, designed 26 environmental education posters, implemented clean-up initiatives in the tundra and Dolgoye Lake, and ran a campaign to care about trees planted in 2016 at the Zapolyarnik stadium. Twelve nest boxes were put up on trees during the trip to Lake Lama.

Intermediate energy consumption by the Group

Indicator	2015	2015, %	2016	2016, %	2017	2017, %
Electric power, TJ, including:	42,943	56	32,530	50	32,355	52
<i>Electric power generated by the Company's enterprises from renewable energy sources (HPPs), TJ</i>	17,027	40	11,856	36	12,175	38
Heating and cooling energy, TJ	25,721	33	29,888	46	24,101	39
Steam, low-grade heat, TJ	8,692	11	2,803	4	5,507	9
Total	77,356	100	65,221	100	61,963	100

In October 2017, Nor Nickel initiated a seminar for citizens on environmental volunteering under the Plant of Goodness programme. The seminar provided valuable ideas on how to plan an environmental campaign, gain investor support and join volunteering events.

Energy efficiency

Nor Nickel's major production assets are located beyond the Arctic Circle where the winter lasts eight months a year. It is therefore critical for the Group to ensure reliable and high-quality power supply to its enterprises and population in the regions where it operates.

In 2017, the Company implemented a number of organisational arrangements and upgrades of its key power equipment as part of the Energy Saving and Energy Efficiency Programme.

These initiatives helped achieve savings of 100,116 tonnes of reference fuel (units) for CHPPs, 44.867 mln kWh of electricity for internal needs and 177,732 Gcal of heat against the targets.

In 2017, per unit fuel consumption at CHPPs decreased to 281.4 g/kWh, down by 13.9 g/kWh against the annual budget targets, 27.7 g/kWh vs 2016 and 9.7 g/kWh vs 2015.

Gas producers saved 17.574 mln cubic meters of natural gas in 2017 by cutting gas consumption for own technological needs and reducing technological losses during transportation.

The Company also generates electric power from renewable energy sources at NTEK's Ust-Khantayskaya and Kureyskaya HPPs (installed capacity of 441 MW and 600 MW, respectively).

In 2017, the share of renewable energy stood at 38% for Nor Nickel and 44% for its Polar Division.

In 2018–2020, the Company will continue to renovate and upgrade the main power equipment and transmission devices along with waste water treatment systems.

38%

the share of renewable energy
in 2017

Energy consumption by Norilsk Nickel¹

Type of energy resource	2016		2017	
	Consumption in volume terms	Consumption, RUB '000	Consumption in volume terms	Consumption, RUB '000
Heat power, Gcal	5,587,849	4,702,584	4,737,249	4,393,019
Electric power, thousand kWh	5,158,974	5,272,779	4,489,188	4,854,566
Motor fuel, t	344	17,797	268	15,348
Diesel fuel, t	58,671	2,657,599	52,684	2,730,795
Heating oil, t	40,479	582,489	40,360	566,985
Natural gas, thousand cubic meters	545,712	1,363,718	497,141	1,458,756
Coal, t	49,760	20,612	17,359	4,204
Kerosene and aviation fuel, t	115	5,008	124	6,122

¹ No other types of energy resources were used besides those specified in the table