

ENVIRONMENTAL IMPACT ACROSS NORILSK NICKEL'S FOREIGN OPERATIONS



Norilsk Nickel Harjavalta

The Company has all the necessary environmental permits and operates a certified integrated management system that meets the requirements of ISO 9001, ISO 14001 and OHSAS 18001.

Norilsk Nickel Harjavalta's main environmental impact consists in the emissions of ammonia (NH₃) and nickel (Ni), and discharges of nickel,

sulphates (SO₄²⁻) and ammonia ions (NH₄⁺). In 2018, Norilsk Nickel Harjavalta met all permit requirements for emissions, discharges and waste disposal volumes. Lower waste volumes in 2018 (down 2.7 kt y-o-y) are a result of switching to the Company's feedstock that is less contaminated with impurities as compared to third party materials.

Environmental impact metrics of Norilsk Nickel Harjavalta

Item	2016	2017	2018
Industrial wastewater, '000 m ³	771	899	988
Pollutants in industrial wastewater, t			
Ni	0.4	0.5	0.6
SO ₄ ²⁻	22,457	25,853	30,189
NH ₄ ⁺ (rebased to nitrogen)	49.5	60.3	69.6
Total water consumption, mcm	10	11.1	11.8
Air pollutant emissions, t			
Ni	1.6	1.7	1.2
NH ₃	70	69	84
Waste generation, kt	7.0	5.5	2.8
Waste disposal, kt	0.8	0.8	1.1



Nkomati

The company is required to comply with both national environmental regulations and Norilsk Nickel Group's corporate standards. Nkomati pays close attention to environmental safety, is certified and regularly audited for compliance with ISO 14001.

Environmental impact metrics of Nkomati

Item	2016	2017	2018
Total water consumption, mcm	0.333	0.064	0.429
Waste generation, t	921	431	358
Waste disposal, t	1,611	845	725
Environmental expenditures, USD mln	0.42	0.27	0.31