

### Specific discharges of insufficiently treated wastewater into bodies of water by Russian entities of LUKOIL Group

	2016	2017	2018
Oil and gas extraction, cubic meters/ton of oil equivalent in hydrocarbon resources	0.005	0.008	0.004
Oil products supply, cubic meters/ton of oil products sold	0.001	0.004	0.003
Transportation, cubic meters/ton of oil products transported	0.002	0.008	0.009

**Notes.** At oil product supply, petrochemical and electrical energy sector entities, there are no discharges of insufficiently treated waters into bodies of water.

### Circulating water

The facilities of generating entities in the electrical energy sector and oil-refining and petrochemical production

facilities in Russia are equipped with circulating process water supply systems. New production facilities

are required to be equipped with circulating and recycled water supply systems and treatment facilities.

### Volumes of circulating water supply and reused water in LUKOIL Group entities, million cubic meters

	2016	2017	2018
<b>Russian entities</b>			
Volume of circulating water supply	2,371.9	2,253.1	2,284.2
Volume of reused-sequentially used water	930.6	875.5	896.5
<b>Foreign entities</b>			
Volume of circulating water supply	no data	no data	198.9
Volume of reused-sequentially used water	no data	no data	1.1

**Notes.** The data presented for 2018 on foreign entities include data for LUKOIL Neftohim Burgas AD, PETROTEL-LUKOIL S.r.l.A., and LUKOIL Uzbekistan Operating Company LLC.

## EMISSIONS AND WASTE



**In 2018 Russian entities significantly reduced emissions of pollutants into the atmosphere (by 14%)**

### Emissions into the atmosphere

The main measures of the environmental safety program in Russia in relation to pollutant emissions into the atmosphere comprise:

- Upgrading and constructing new generation facilities at electrical energy sector entities that are equipped with improved automated systems to regulate fuel combustion processes and heat losses and minimize emissions of pollutants

- Replacements or upgrades according to the principle of utilizing the best available technology and equipment at industrial facilities
- Use of emission trapping and treatment systems

In 2018 Russian entities significantly reduced emissions of pollutants into the atmosphere (by 14%), including solid particles and nitrogen oxide. This result

was achieved chiefly through reducing associated petroleum gas combustion volumes.

The majority of discharges from foreign entities was attributable to the rapid development of a gas project in Uzbekistan.