

## Water resources management

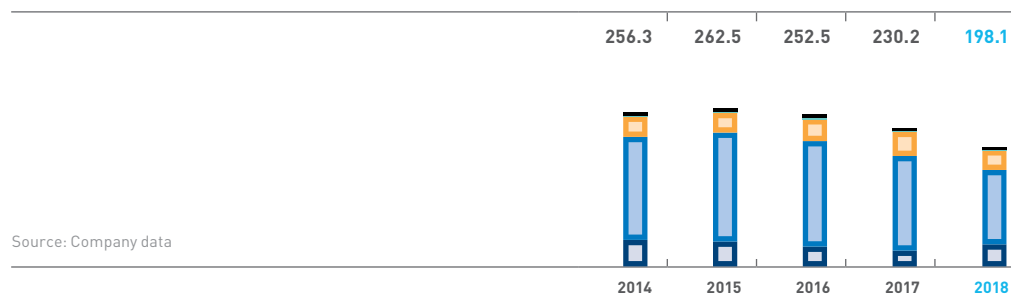
The key areas of the Company's activities on water resources management include sustainable use, effective wastewater treatment, and prevention of natural water bodies contamination with oil and petroleum products. Gazprom Neft monitors water protection zones, surface and ground waters and evaluates the condition of bed sediments of the surface water bodies in the regions of its operation.

At the refineries, which are active water consumers, the quality of wastewater is monitored twice a day. The condition and level of groundwater at the borders of sanitary protection zones are assessed. The Company's key projects in this area include the completion of construction of Biosphere biological treatment facilities at its Moscow Refinery and building similar treatment facilities at the Omsk Refinery. Featuring a reverse osmosis unit, the facility provides for multi-stage system of wastewater

treatment, including mechanical, physical and chemical, biological, filtration, and ultrafiltration stages. Closed loop water treatment enables us to reuse in production up to 70% of the treated water. In 2018, as part of the project the Omsk Refinery prepared a construction site for treatment facilities and purchased equipment.

In 2018, the Moscow Refinery water treatment facilities reached their design capacity. As a result, the refinery cut river water consumption and significantly lowered the load at municipal treatment facilities. The launch of Biosphere biological treatment facilities at the Omsk Refinery is slated for 2020, with the project's capex totalling ₺ 18.6 bn.

### Total water consumption<sup>1</sup> (mcm)



Source: Company data

	2014	2015	2016	2017	2018
From underground sources	44.0	41.3	32.9	26.2	36.6
Produced water	171.0	180.8	175.1	157.1	123.5
From surface sources	33.7	32.7	36.4	40.2	32.8
From public water supply systems	1.7	1.6	2.2	2.1	1.7
From other water supply systems	5.9	6.1	5.9	4.6	3.5

110

KCM  
DISCHARGES INTO  
SURFACE WATER  
BODIES

<sup>1</sup>In line with the revised methodology of recording the volumes of produced water.

“Treatment using a membrane bioreactor is more expensive than other options, but only this technology is really effective for domestic and industrial wastewater, especially in cities, because it helps significantly increase the performance of treatment facilities and make them smaller. There are only a few applications of this technology in Russia, with none of them in the refining industry.”

Alexander Kuznetsov

Associate Professor at the Biotechnology Department of Mendeleev University of Chemical Technology of Russia

### OFFSHORE PROJECTS

In developing the first upstream project on Russia’s Arctic Shelf, the Company introduces the most advanced technological solutions to protect the environment, namely, marine resources. There is no direct contact of the well with water at the Prirazlomnaya platform, as the construction is installed on the bottom of the Pechora Sea. The wells that are drilled in the field are located inside the platform, with its foundation serving as a buffer between the well and the sea. Moreover, the equipment installed on the wells is designed to prevent uncontrolled gas or oil blowouts and, if necessary, to block the oil rise in 7 seconds. The oil storage facility is located at the base of the platform, below all other facilities and systems. This design solution sets

out additional safety requirements to operate Prirazlomnaya. In order to avoid leakage of gaseous light hydrocarbons, the “wet” method of storage is used in oil storage tanks.

In the reporting year, the Company eliminated contaminant discharges into surface water bodies through upgrading the storm drain at Novorosnefteservis and treating its wastewater at the treatment facilities.

## Biosphere biological treatment facilities of the Moscow Refinery were named the best infrastructure project by the Eco Best Award

In 2018, the project was recognised for its environmental, energy and resource saving efforts and became one of the winners of the Eco Best Award 2018. The jury awarded the prize of the Best Infrastructure Project to the new biological treatment facilities. It has become the only environmental project to be shortlisted for the Platts Global Energy Awards 2018 as the Technology Project of the Year.



Biosphere biological treatment facilities on the Company's website



Plant for the city: Moscow Refinery (coverage by Russia 24 TV Channel)