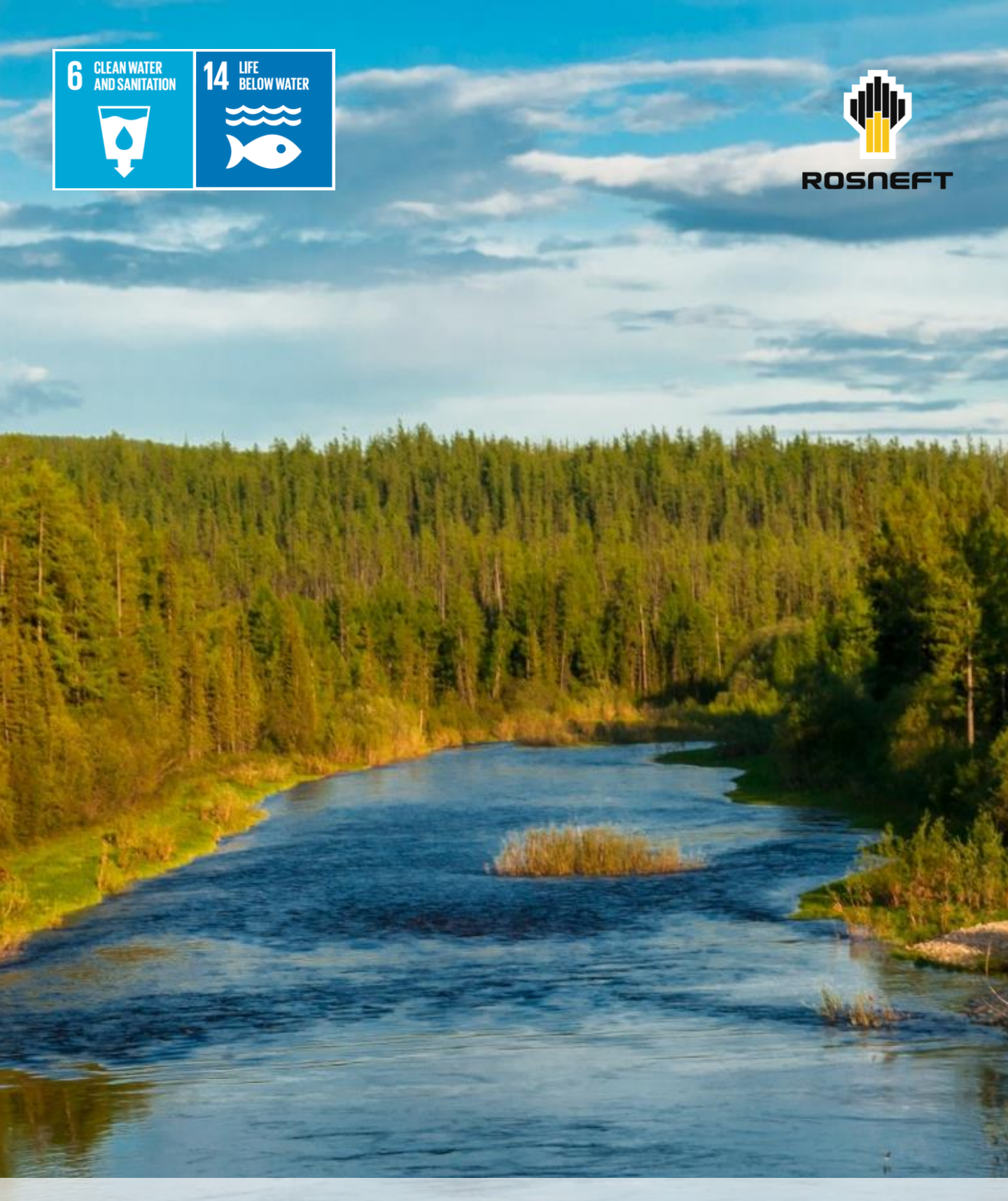

ROSNEFT OIL COMPANY: SUSTAINABLE APPROACH TO PRESERVATION OF WATER RESOURCES

RESPONSIBLE BUSINESS CONDUCT IS ONE OF THE COMPANY'S MAIN PRIORITIES

"Operating as a responsible producer and participant in the UN Global Compact, the Company is focused on a rational utilization of natural resources and minimal environmental impact".

Igor Ivanovich Sechin
Chairman of the Management Board,
Chief Executive Officer of Rosneft Oil Company

WATER RESOURCES PRESERVATION IS AN ESSENTIAL PREREQUISITE OF SUSTAINABLE DEVELOPMENT

Rosneft recognizes that population growth, economic development and an ensuing environmental impact, as well as climate change may have an unfavourable effect on water resources. The Company is engaged in hydrocarbon exploration and production, refining and marketing of petroleum products mainly on the territory of the Russian Federation (95% of assets).

Russia is one of the world's most water-abundant countries with more than 20% of global fresh surface and ground water.

The Company is using water resources in its operations across the entire value creation chain that may affect the interests of other water consumers. Rosneft acknowledges and respects the right to inclusive and equitable access to safe and affordable drinking water. The Board of Directors has approved Rosneft's strategic commitment to the 17 Nations' Sustainable Development Goals of the United Nations, including Goal 6 Fresh Water and Sanitation.

Minimization of the Company's environmental footprint is an important priority of the Rosneft-2022 strategy. **Additionally, Rosneft aims to achieve the following goal within the framework of its Environmental Development Concept*:**

10% reduction in the consumption of fresh water by 2030** (for current operations) due to an increase in the reused water and improved efficiency of water treatment. New projects should provide for a maximum water reuse.

Rosneft pursues an optimal use of water resources, aiming to reduce water withdrawal and consumption, as well as preserve the quality of water across the value chain. Responsible and prudent consumption of water resources is Rosneft's environmental priority.

** The Goal covers all Rosneft Group Subsidiaries with 2019 as the baseline year.*
*** Fresh water is fresh water withdrawn from surface and underground water bodies, including the fresh water supplied by third parties under water supply contracts. Fresh water is used for operational, utility and other Company needs.*

Rosneft applies circular economy principles in managing water resources.

In 2020, Rosneft continued working on reducing water consumption and water withdrawal from natural sources, reducing the total water intake by **7%**. Over the last seven years, **the share of the recycled and reused water in Company operations exceeded 90%.**

94% was the share of the recycled and reused water in Company operations in 2020.

Rosneft is consistently improving its corporate **water management** processes, applying modern technologies for water treatment and protection of water bodies that makes a significant contribution to the minimization of the environmental footprint.

In particular, the Company implemented a large-scale environmental project on upgrading water treatment units at Bashneft-Ufaneftekhim, Rosneft's largest refining asset. The upgraded facility was completed in 2019, resulting in a twofold increase in the wastewater treatment capacity.
The main characteristics of the integrated biological water treatment facility are as follows:

- This is the largest integrated water treatment facility in Eurasia with a throughput of 84,000 m^3 per day.
- The facility provides treatment for the industrial, rainfall, and utility wastewater from the Bashneft refineries and 66 local enterprises.
- Water withdrawal from the river was reduced by 2.5 times due to treated wastewater use.
- The Company used the best available technologies ensuring the environmental efficiency of the upgrade, in particular:
  - Membrane bioreactor technology that combines traditional biological treatment with membrane separation: wastewater percolation through microscopic membrane pores that enables the removal of all impurities and microorganisms.
  - Use of the equipment for reverse electrodialysis and reverse osmosis, as well as ion-exchange technologies for the removal of heavy metals in the course of a final wastewater treatment.

- The water treatment facilities at Bashneft-Ufaneftekhim have treated 65 mln m^3 of wastewater since 2019*.

Looking forward, the biological treatment facilities at the Ufa Refinery will completely stop water withdrawal from the River Belaya.

** as of late 2020*

COOPERATION AGREEMENT WITH THE MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT AND THE FEDERAL SERVICE FOR ENVIRONMENTAL CONTROL

In 2016, Rosneft signed a **Cooperation agreement with the Ministry of Natural Resources and Environment of Russia and the Federal Service for Environmental Control (Rosprirodnadzor)** on implementation of eight large-scale environmental projects, out of which six projects related to improving the quality of water resources, including:

- The biological water treatment facility at **Bashneft-Ufaneftekhim** (commissioned in 2018).
- Construction of a post-treatment unit at the existing water treatment facilities at the **Novokuibyshevsk Refinery** (commissioned in 2018).
- Construction of on site water treatment plants and a recycling water supply unit for the additives production at the **Novokuibyshevsk Motor Oils and Additives Plant** (commissioned in 2020).
- Construction of integrated facilities for utilization of treated wastewater from the Valanzhinsk accumulation in the East Urengoy license area of **JSC Rospan International** (commissioned in 2021).
- Construction of water treatment units for industrial wastewater and rainwater from the left shore front at **RN-Tuapse Sea Terminal LLC** (completion planned for 2024).
- Upgrade of water treatment units for industrial wastewater and rainwater discharged to the **Novitsky** Bay by **RN-Morskoi Terminal Nakhodka LLC** (completion planned for 2025).

Rosneft applies a comprehensive approach to risk management, including risks associated with water resources that are part of the Company's integrated environmental risk management system.

EFFECTIVE MANAGEMENT OF WATER RESOURCES

The Company ensures strict compliance of its operations and production facilities with the requirements of the Russian environmental legislation, maintaining high standards of environmental safety with regard to water management.

Risk assessment related to water management is part of an integrated analysis of the Company's HSE risks. The risk assessment methodology takes into account the principles of the ISO 31000:2018 Risk Management Guidelines international standard, as well as the condition of the water bodies and ecosystems in the regions of Company operations.

The Company aims to mitigate and reduce the water-related risks while minimizing the impact of its operations on the water bodies.

An identified risk in Upstream concerns a potential contamination of water bodies resulting from an emergency loss of pipeline integrity. The Company has developed a set of organizational and technical action plans at different levels of management with a view to mitigating those risks.

The Company applies advanced water re-injection technologies for reservoir pressure maintenance and enhanced oil recovery.

Rosneft strives to minimize the water-related impact of its operations at all Group subsidiaries and during the lifecycle of its production facilities and processes.

Rosneft is implementing a number of large-scale projects applying innovative water treatment technologies that contribute to the preservation of water resources for local communities and ensure the social and economic wellbeing in the regions.

INNOVATIVE TECHNOLOGIES APPLICATION

Bashneft has introduced a unique technology for reservoir water treatment

JSC ANK Bashneft (part of the Rosneft Group), has successfully completed pilot testing of a hydrocyclone water treatment unit, which is used for maintaining the reservoir pressure. The technology is based on the application of centrifugal force that separates the water and solid particles from the lighter oil. The pilot testing provided for a materially higher level of water treatment as compared to the conventional methods.

JSC Samotlorneftegaz applies a unique technology for cleaning up the bottom of water bodies

JSC Samotlorneftegaz, one of Rosneft's largest producing assets, together with the Biological Institute of the Tomsk State University successfully applied the technology for cleaning up the bottom of water bodies from hydrocarbons by flotation and airlifting – "Aero-probe tool".

The innovative approach is based on lifting hydrocarbon residue from bottom deposits with the help of the compressed air. The technique also allows a quick water diagnostics along with an automated mapping of contaminated areas.

The project of cleaning up the bottom of water bodies from hydrocarbons has undergone a State environmental expert review and received the Quality mark of the Federal Service for Environmental Control (Rosprirodnadzor). The project became a winner of the international Environmental Culture. Peace and Harmony contest, organized by the Vernadsky Non-Governmental Environmental Foundation with the support of the Russian Ministry of Natural Resources and Environment, All-Russian Contest for selecting the best regional environmental practices "Reliable Partner - Ecology", and was on the short list of the award ceremony carried out by the Russian Geographical Society.

Rosneft discloses information on the use of water resources in its annual Sustainable Development Reports, the public position on the Company's contribution to the achievement of the UN Sustainable Development Goals and other documents published on the corporate website.