



**ROSNEFT**



**ROSNEFT:  
CONTINUOUSLY IMPROVING FUEL QUALITY  
AND SUSTAINABILITY ACROSS THE VALUE  
CHAIN**



Rosneft carries out its activities for the benefit of Russia, and in the interests of its shareholders and all the stakeholders. The 17 Sustainable Development Goals, put forward by the United Nations for the sake of people, the planet and prosperity, are integrated in the Company's strategy.

## DEVELOPING FUELS WITH IMPROVED ENVIRONMENTAL PERFORMANCE AND DRIVING INNOVATION FOR THE BENEFIT OF CONSUMERS

The Company's operations contribute to improving the quality of life, ensuring environmental sustainability and reducing the unfavourable environmental impact of road transport.

Rosneft continues to improve the performance of its motor fuels and expands the geography of its retail sales as well as the range of products and additional services available at the Company's petrol stations (including the non-fuel offer).

The Company [has completed transition to providing the Russian market with motor fuels compliant with Euro 5 emissions standards](#) following a number of development projects and technical unit upgrades executed at Rosneft refineries in compliance with the deadlines set by Technical Regulations of the Russian Federation.

On 17 December 2020 The Board of Directors of Rosneft reviewed [The Carbon Management Plan for the period until 2035](#) which is the foundation of the Company's environmental agenda. The plan, in particular, contemplates achieving a consistent reduction in Scope 3 emissions - emissions generated by the use of the Company's sold products - by growing the share of eco-friendly fuels as well as considering production of alternative fuels.

*For reference: 17 Goals are set by the UN Resolution "Transforming our World: The 2030 Agenda for Sustainable Development".*

**In 2020, the Company continued to increase the number of petrol stations selling new types of eco-friendly fuels, including Pulsar 100 high-octane fuel and Euro 6, as well as fuels with ACTIVE technology at the BP retail network.**



## CONTINUOUSLY REDUCING THE ENVIRONMENTAL IMPACT DURING PRODUCTION, TRANSPORTATION AND SALE OF PETROLEUM PRODUCTS

In its oil refining business Rosneft has been implementing the Environmental Action Plan 2020-2024, aimed at reducing the unfavourable environmental impact, minimizing environmental risks and achieving the Rosneft-2022 strategic targets.

The Environmental Action Plan includes **6 main activity areas** – protection of atmospheric air, waste management, protection of surface and underground water sources, action in compliance with environment and land protection legislation.

The Plan provides for implementation of over 100 projects with a **total investment of about 136 billion rubles**.



**Rosneft aims at embedding the circular economy principles in its operations. The Company is considering the use of containers for separate waste collection, eco-friendly packaging and recycled products at its retail sites.**



## CONTINUOUSLY REDUCING THE ENVIRONMENTAL IMPACT DURING PRODUCTION, TRANSPORTATION AND SALE OF PETROLEUM PRODUCTS

The Company exercises stringent control over the vehicles technical condition before loading as well as compliance with the rules and working regulations approved for motor vehicles, tankfarms and marine terminal facilities with a view to **minimizing the environmental impact during product shipment.**

All Rosneft oil product supply subsidiaries have been successfully implementing action plans aimed at decreasing their own fuel consumption since 2017, which has contributed to reducing greenhouse gas emissions.

In 2019, the fuel economy amounted to **1.6 thousand tons, or 4%** of fuel consumption in the previous year as a result of equipping the gasoline truck fleet with tank fuel level sensors, reducing vehicle fuel consumption limits, improving tankfarm heating systems, and other.



Projects on converting tankfarm boiler facilities from using liquid fuels to alternatives play an important role in improving tankfarm heating systems operations. Building on the success achieved, in **2020** the fuel economy reached **3.4 thousand tons, or 8%** of fuel consumption in 2019.

**Focusing on lowering emissions, Rosneft supplies higher quality fuel for the Russian Railways locomotives.**



Since 2018, Rosneft has been offering consumers Euro 6 fuel with improved operational and environmental performance in 11 regions of the Company's retail presence, including the Republic of Bashkortostan, the Krasnodar region, the Republic of Adygea, the Nizhny Novgorod, Smolensk, Tula, Kaluga, Ryazan, Vladimir, and Moscow regions and in Moscow.

## ECO-FRIENDLY EURO 6 FUEL

Rosneft has achieved the superior quality of Euro 6 by minimizing the presence of aromatics and olefins in the fuel composition that helps reducing polluting emissions of motor vehicles.

Euro 6 has the following properties:

- contains less sulphur, increasing the service life of the exhaust gas aftertreatment system
- retains its composition and does not age for a long time, which has a positive impact on the engine performance
- contains less benzene and aromatics, resulting in lower emissions
- contains less olefins, decreasing deposits that accumulate on the internal parts of the engine
- contains less impurities that may affect the engine performance



**The use of Euro 6 helps to reduce car exhaust emissions by decreasing:**

- total hydrocarbon emissions by up to 24%
- emissions of non-methane hydrocarbons by up to 27%
- particulate emissions by up to 64%

**In 2019, the fuel efficiency and environmental safety of Euro 6 was tested and confirmed by a certified international centre.**



The key advantage of Pulsar branded gasoline is the high efficiency in maintaining the cleanliness of all types of gasoline engines, including the most modern systems with direct multi-point fuel injection into the combustion chamber.

## PREMIUM PULSAR BRANDED FUEL

Rosneft produces and offers customers Pulsar gasoline with 92, 95 and 100 octane numbers. **Pulsar branded gasoline** is available in 33 regions at more than 1,150 of the Company's petrol stations. In 2020, Rosneft launched retail sales of Pulsar-95 branded fuel in the Bryansk and Khabarovsk regions following completion of its tankfarm upgrades.

Rosneft produces Pulsar branded fuel by using the technology based on a smart formula of detergent additives developed by BASF for Rosneft fuels. This approach ensures sustainable engine tuning by keeping the fuel system clean during continuous service, and, as a result, having an optimal air and fuel ratio with the most effective combustion.

**Pulsar fuel complies with the most stringent requirements of the Worldwide Fuel Charter for Category 6 gasoline related to maintaining and cleaning up the engine intake system from deposits on engines of various generations.**

**Pulsar ensures a clean fuel system by the following:**

- removing up to 84% of existing deposits from the intake valves after 60 hours of engine running when switching from regular gasoline to Pulsar (the Clean up effect)
- maintaining 100% injector cleanliness in direct injection engines (the Keep clean effect)

**The effectiveness of Pulsar's unique premium fuel formula was confirmed by motor tests conducted at BASF SE's accredited, certified motor test bench center in Germany.**



## INNOVATION FOR THE BENEFIT OF CONSUMERS: DEVELOPING NATURAL GAS MOTOR FUEL

Natural gas is the most eco-friendly hydrocarbon fuel for internal combustion engines: it does not contain sulphur, benzene and aromatics, and significantly reduces the amount of harmful substances (CO, NOx) in car exhausts.

Since 2018, the Company has been developing a retail network for the sale of compressed natural gas (CNG). As of the end of 2020, the Company's operating retail stations in the Voronezh, Saratov, Ulyanovsk and Stavropol regions hosted **13 CNG** modules and one dedicated CNG station in Stavropol.



**Every day Rosneft's retail fuels more than 3.6 thousand vehicles with CNG.**

In 2020, CNG sales amounted to **22.1 million cubic meters, which is 19% higher than in the same period of the previous year.**

Rosneft is planning a considerable expansion of its CNG filling station network, in particular, in partnership with Beijing Gas and the Rostec State Corporation.

**The use of natural gas contributes to minimizing the carbon footprint of the transport sector: switching to CNG reduces the CO<sub>2</sub> emissions intensity by up to 30% compared to conventional motor fuels.**



## INNOVATION FOR THE BENEFIT OF CONSUMERS: DEVELOPING THE ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

The Company's retail network has 14 EV (electric vehicle) charging stations, including 5 fast charging stations (50 kW) in the Moscow, Vladivostok, Khabarovsk and Leningrad regions, and 9 slow charging stations (22 kW) in the Tver and Krasnodar regions.



Rosneft develops EV charging infrastructure in **cooperation with Rosseti and RusHydro, Russia's largest electric generating companies**. The Company plans to focus on installation of mostly fast 50 kW (and above) EV chargers at its retail sites.

In 2020, Rosneft installed 2 fast EV chargers at the Company's retail sites in the Far Eastern city of Khabarovsk in partnership with RusHydro. The Far Eastern Federal District is the largest regional market with more than 25% of all electric vehicles in Russia.



In partnership with Rosseti, Rosneft plans to develop EV charging infrastructure on Russia's federal and regional highways.

**Developing EV charging infrastructure will contribute to Russia's energy transformation, as well as air quality improvement in the urban environment.**





## INNOVATION FOR THE BENEFIT OF CONSUMERS: RESEARCH AND PROJECTS FOR PRODUCING LOW-CARBON FUELS

As part of the Carbon Management Plan until 2035, the Company will evaluate innovative projects for developing the production and distribution of new low-carbon fuels:

- blue / green hydrogen
- biofuels
- eco-friendly jet fuel

In particular, Rosneft will consider the possibility of complementing operating hydrogen units with carbon capture and storage technology.



**Rosneft has a unique scientific potential. The Company's corporate R&D complex includes 29 research institutes, and successfully develops partnerships with 70 Russian and international universities.**



The Company conducts LNG bunkering operations for the first pilot LNG tanker Vladimir Monomakh, which recently left the Zvezda shipyard and is heading to Europe on the southern route. In the near future, Rosneft plans to carry out LNG bunkering of the Company's shuttle tankers within the Vostok Oil project.

## INCREASING SALES OF LOW SULPHUR MARINE FUELS

In 2020, Rosneft significantly expanded its product range by increasing the sales of low sulphur marine distillate fuel and bunker fuel oil.

Low sulphur marine fuels are **environmentally friendly types of bunker fuels** that fully comply with the requirements of the International Convention for the Prevention of Pollution from Ships (MARPOL). The sulphur content in these types of fuels does not exceed 0.1/0.5%, which significantly reduces emissions into the atmosphere. In addition, the residual marine low sulphur fuel RMLS 40 contains less mechanical impurities and metals compared to other types of residual fuel.



In 2020, Rosneft's bunkering with low sulphur marine fuels amounted to about **1.6 million tons**.

**The Company plans to continue increasing production of environmentally friendly residual low sulphur marine fuel RMLS 40.**

**In 2020, the share of low-sulphur fuels in the total marine fuel sales amounted to 84%, growing from 23% in the previous year.**



Rosneft is leading in jet fuel supplies in Russia, accounting for more than 30% of the total volume.

# ROSNEFT - A RESPONSIBLE AND RELIABLE SUPPLIER OF JET FUEL

RN-Aero LLC is the operator of Rosneft's refueling business, fuelling aircraft at **44 airports in Russia** and abroad and consistently expanding its partner network.

Internationally, RN-Aero LLC offers its services to more than 30 airlines, including the leaders of the Russian airline market such as Aeroflot, S7 Airlines, and the Ural Airlines, as well as leading foreign air carriers such as Lufthansa, Air France, Singapore Airlines, British Airways, China Southern Airlines, and other.



The Company sells fuel that is in full compliance with the requirements of state standard GOST 10227 of the TS-1 and RT brands and international standards.

RN-Aero LLC received a certificate of compliance with international standards **ISO 14001: 2015** – the Company has introduced and maintains an Environment Management System.



RN-Aero LLC is focused on implementing digital solutions, increasing the operating reliability. The Company operates an information system for laboratory quality control.



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



13 CLIMATE ACTION



The Company's quality standards take into account the requirements of ACEA, API, ILSAC, leading international organizations in the field of motor oils certification, as well as the requirements of the world's leading car manufacturers.

## MOTOR OILS WITH IMPROVED ENVIRONMENTAL PERFORMANCE

Motor oils **with improved environmental performance** have low sulphated ash, low sulphur (no more than 0.3% by weight), and low phosphorus content (no more than 0.08% by weight).

In particular, these motor oils include the types

- used in the engine lubrication system in compliance with the Euro 5 and Euro 6 requirements
- compatible with the systems for aftertreatment and reduction of car exhaust emissions (CO, CH, NO<sub>x</sub>). These systems include EGR (exhaust gas recirculation), SCR (selective catalytic reduction), DPF (diesel particulate filter), GPF (gasoline particulate filter), and TWC (three-way catalyst)
- providing for reduced fuel consumption and, as a result, lower CO<sub>2</sub> emissions. Fuel efficiency is enhanced by using low viscosity oils that ensure reduced fuel consumption

The Company's range of oils includes the following motor oils with improved environmental performance:

- Rosneft Magnum Ultratec FE 5W-30, Rosneft Magnum Ultratec C3 5W-30, Rosneft Magnum Ultratec A5 5W-30 for lights vehicles
- Rosneft Revolux D4, Rosneft Revolux D5, Rosneft Revolux D6 for commercial vehicles

The Company's oils are produced in compliance with standards that take into account modern environmental requirements for motor oils related to sulphated ash, phosphorus and sulphur content.



Rosneft's share in the German oil refining assets accounts for an annual production of about 4.6 million tons of motor fuels, with about 0.5 million tons of bio-components (ethanol, FAME, HVO).

## RESPONSIBLE APPROACH FOR THE BENEFIT OF CONSUMERS: ROSNEFT'S REFINING ASSETS IN GERMANY

[Rosneft Deutschland GmbH \(RDG\)](#), a Company subsidiary, is the third largest oil refining company in Germany with the throughput of **12.5 million tons per year**.

Projects using HVO (hydrogenated vegetable oil), a new diesel fuel bio-component, have been successfully implemented at the Bayernoil and MiRO refineries with a view to meeting the increased European legislative requirements related to CO<sub>2</sub> emissions reduction.

RDG is examining several areas, including green hydrogen production, that may help to improve the emissions management efficiency and environmental performance of the product slate.

At the moment, hydrogen is produced at an industrial park on the territory of the PCK Raffinerie refinery (Industrieparkgesellschaft mbH) using biomethane as feedstock.

RDG is an active participant in various research and design projects for the **production of green hydrogen** by the electrolysis using wind power and second-generation biofuels (from biomass, etc.), provided commercial viability and reliable technical solutions. The results of the preliminary feasibility study on the application of IH<sub>2</sub> technology (production of biofuels from forest waste/biomass, the appraise stage) are expected in 2021.

**RDG manages stakes in three first-class refining assets: PCK Raffinerie (54.2%), Bayernoil (28.57%), and MiRO (24%) with a high EEI Energy Efficiency Index of 78-85.**



## RESPONSIBLE APPROACH FOR THE BENEFIT OF CONSUMERS: ROSNEFT ASSETS IN INDIA

[Nayara Energy](#), an associate of Rosneft, owns and operates the **Vadinar Refinery (Nelson Index 11.8)**, one of India's most advanced refineries, which accounts for approximately **8% of Indian refining**. Nayara Energy has a fast-growing local retail network, which has exceeded **6 thousand petrol stations**. The petrol stations are equipped with a vapor capture system to minimize emissions.

**Prevention and control of atmospheric emissions during the operations** of the Vadinar refinery is ensured by the use of fuel gas, low NO<sub>x</sub> burners, technologies to minimize SO<sub>2</sub> emissions in sulphur recovery, multistage cyclones for particulate emissions control, as well as an additional sulphur recovery unit with a sulphur recovery efficiency of over 99.7%. In addition, floating roof tanks are provided for storage of Class A products, which reduces hydrocarbon vapour loss. Double seal has been provided in order to minimize vapour leakage.

The Vadinar refinery uses a **Continuous Stack Emissions Monitoring System and Continuous Ambient Air Quality Monitoring System**. The real time data is being transmitted to the central pollution control board.

To provide access to alternative fuels, Nayara Energy is considering installing EV charging infrastructure at its retail network.

**Nayara Energy generates about 2 MW of power using solar panels located on the rooftops.**