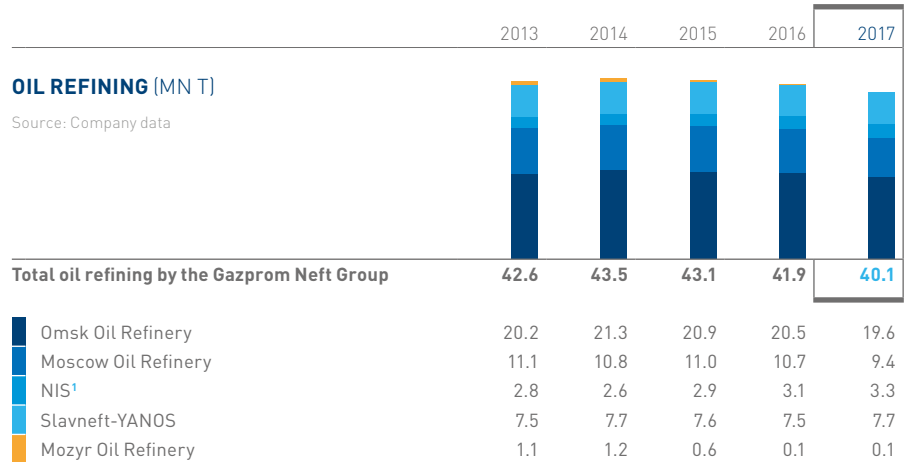


OIL REFINING

GAZPROM NEFT REDUCED OIL REFINING BY 4.2% IN 2017 AS A RESULT OF MODERNIZATION AND PLANNED OVERHAULS AT ITS RUSSIAN REFINERIES. THE OPTIMAL UTILIZATION OF OIL REFINERIES HELPED TO ENSURE THE MAXIMUM POSSIBLE PROFITABILITY OF OIL REFINING IN THE CURRENT MARKET CONDITIONS.

In 2017, the Company continued the modernization of its oil refineries in an effort to enhance the efficient refining of raw materials, increase the depth of refining, improve production safety, and protect the environment. In particular, the unique Biosphera complex of treatment facilities was put into operation at the Moscow Oil Refinery.

 For more about the Biosphera complex, see p. 34



1 — Gazprom Neft owns a 56.15% stake in NIS (Serbia), which owns two refineries in Pancevo and Novi Sad as well as production projects in the Balkans, Angola, and Turkmenistan and a chain of petrol stations. For more, see p. 66

Efficiency Control Centre

Technology C.4



90%

PRODUCTION PARAMETERS TO BE MONITORED BY THE CENTRE



250,000

SENSORS
TRANSMIT INFORMATION TO THE ECC



-30%

EXPECTED DECREASE IN ENERGY CONSUMPTION DUE TO THE OPTIMIZATION OF PROCESSES

Gazprom Neft established the unique Efficiency Control Centre (ECC) for oil refining and sales in St. Petersburg in 2017. The ECC controls the entire process from receiving oil at the refinery to the retail sale of petroleum products.

Some 250,000 automated monitoring sensors and dozens of production process systems transmit information about the consumption of petroleum products, the state of equipment, and the quality of raw materials to the ECC in real time. The Centre has deployed a 'Data Lake' in which management decisions are made based on an analysis of this data. All assets are consolidated

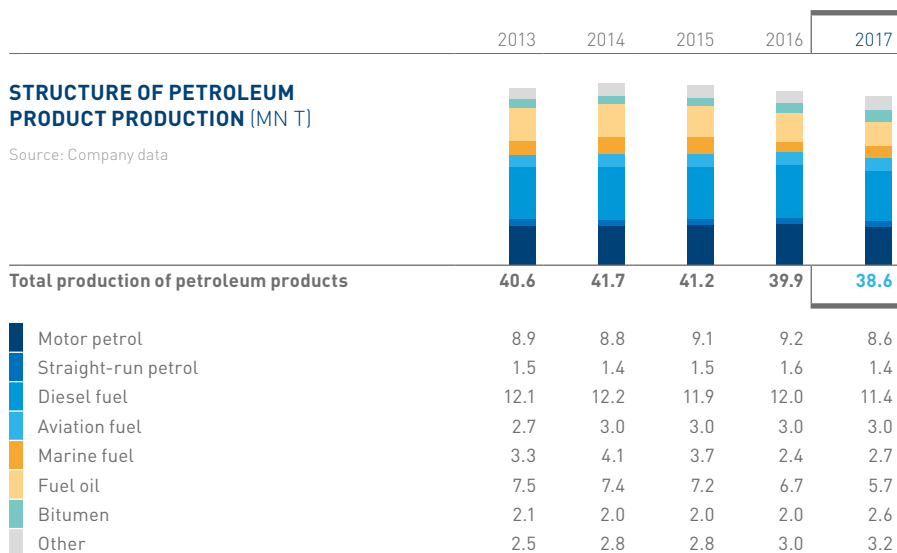
with 60-day rolling scheduling. The Company expects to achieve a significant economic effect by reducing the response time to technological deviations as well as raw materials and energy expenses while also optimizing all core processes. The reliability of production will improve due to the predictive management of potential deviations and incidents. The introduction of a reliability management system will lead to increased time between repairs and optimize logistics costs. A unified platform will be created in the future for the management of logistics, refining, and sales based on an analysis of big data, predictive analytics, the use of digital twins, machine learning, neural networks, and artificial intelligence.

“Our main focus in refining right now is to modernize oil refineries in Russia. We want to make our refineries more efficient so that they produce as much light petroleum products and petroleum products with high added value as possible”.

Alexander Dyukov

CEO of Gazprom Neft PJSC

Gazprom Neft intends to invest over RUB 400 billion in the development of the Omsk and Moscow Oil Refineries over the next five years. As a result, the refining at the enterprises will grow to 95% by 2025 (this figure currently stands at 91.7% for the Omsk Oil Refinery and 80.3% for the Moscow Oil Refinery).



For more on the modernization of the Omsk and Moscow Oil Refineries, see p. 36

The decrease in the production volume of high-octane petrol gasoline and diesel fuel by 6.3% and 4.7% YoY, respectively, is due to a general decrease in the volume of oil refining at the Omsk and Moscow Oil Refineries. The 27.2% YoY increase in bitumen production resulted from growing demand on the domestic market and the expanded geography of exports. Fuel oil production declined compared with 2016 because of a decrease in oil refining as well as increase bitumen production.

Digital twins

Technology C.5

2-3

TIMES
REDUCTION IN THE NUMBER OF ERRORS IN MACHINERY OPERATION

up to 6-7

YEARS
INCREASE IN TIME BETWEEN REPAIRS

Digital twins are virtual copies of a real object.

The digital twin of an oil refinery installation consists of a complex mathematical model that uses artificial intelligence class algorithms containing complete information about each component of the installation, data on production processes, energy consumption as well as the parameters of raw materials and finished product. It helps to choose a refinery’s optimal parameters, predict its failures, and make decisions about the timing of repairs in a predictive mode.

Gazprom Neft has created a digital twin for the catalytic cracking petrol hydrotreatment unit at the Moscow Oil Refinery and the AT-9 primary oil refining units at the Omsk Oil Refinery. A fully digitized plant is being set up in Shymkent (Kazakhstan) with remote control capabilities. The Ryazan Bitumen Materials Plant is testing the modular architecture principles for the establishment of a continuous production management platform as part of the BitumLab project. All the successful solutions found at the bitumen plants can later be scaled to the level of major oil refineries.

OIL REFINING AT GAZPROM NEFT REFINERIES

OMSK OIL REFINERY

MOSCOW OIL REFINERY

NIS (SERBIA)

PROJECTED CAPACITY (MN T)

■ Installed capacity ■ Refining



REFINING DEPTH

91.7%

80.3%

86.5%

OUTPUT OF LIGHT PETROLEUM PRODUCTS

71.8%

55.1%

75.5%

Milestones of 2017:

- construction was completed on the AOLI-1 automated on-spot loading installation for the sealed loading of petroleum products;
- the bitumen installation was rebuilt to increase production and expand the range of high-tech bitumen materials;
- construction was completed on a hydrogen production unit to provide hydrogen to newly constructed and reconstructed facilities;
- a loading rack was rebuilt for the automated and sealed loading of petroleum products;
- new products were launched: TCU-80 improved marine fuel and G-100 high-octane petrol;
- several of the refinery's products won awards at the '100 Best Products of Russia' national competition.

Plans for 2018:

- the continued implementation of projects to increase the depth of refining and enhance the eco-friendliness of production, including the construction of the crude vacuum unit (crude oil refining complex), the advanced oil refining complex (AORC), delayed coking unit (DCU), hydrotreatment/dewaxing of diesel fuel, and the Biosphera treatment facilities;
- the reconstruction of a number of process units (catalytic reforming unit, regeneration gas treatment unit of the catalytic cracking unit, and process condensate treatment unit).

Milestones of 2017:

- commissioning of the Biosphera treatment plants to improve the efficiency and quality of wastewater treatment;
- reconstruction of the catalytic cracking unit to increase capacity by 20% and enhance the depth of refining and energy efficiency;
- reconstruction of the gas dispensing station to bring it into compliance with the norms and rules for ensuring the receipt and shipment of an expanded range of liquefied petroleum gas (LPG).

Plans for 2018:

- the completion of construction on the Euro+ unit;
- the implementation of projects that aim to increase the efficiency and depth of refining – the construction of a deep oil refining complex and a kerosene cut hydrotreatment unit;
- development of logistics infrastructure, including the construction of a loading rack for light petroleum products for motor vehicles and an automated rack for on-spot loading for railway transport.

Milestones of 2017:

- construction began on a delayed coking unit at the Pancevo Oil Refinery;
- the Pancevo Oil Refinery was the first among the Company's energy enterprises in Serbia to receive the international IPPC certificate, which confirms the production process conforms to European environmental protection standards. After receiving the certificate, the Pancevo Oil Refinery was named one of the best manufacturing enterprises in Europe.

Plans for 2018:

- continued construction of the delayed coking unit. Thanks to this project, the Pancevo Oil Refinery will become one of the best enterprises in the world in terms of refining depth. As a result, the refinery is expected to reach its maximum capacity (4.6 mn t per year), refining depth is to increase to 99.2%, and the yield of light petroleum products is to increase to 87% in 2019.

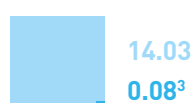
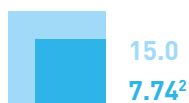
¹ — Installed capacity of the Pancevo Oil Refinery. The Novi Sad Oil Refinery (2.495 mn t) is under reconstruction and no oil refining is planned in 2016–2018.

OIL REFINING AT JOINT VENTURE OIL REFINERIES

SLAVNEFT-YANOS

MOZYR OIL REFINERY

■ Installed capacity ■ Refining



66.7%

75.54%

55.3%

60.55%

Milestones of 2017:

- commissioning of a new plant for the production of Group III base oils and oil-based muds;
- the launch of new products, including low-viscosity hydrocarbon oil-based muds, Group III oils, and the bitumen grades EN 100/150, EN 70/100, and EN 50/70;
- the refinery's products won awards at the '100 Best Products of Russia' national competition.

Plans for 2018:

- completion of construction on the 'Wet catalysis-2' hydrogen sulphide utilization unit and racks for the sealed loading of aromatic hydrocarbons;
- replacement of raw materials for the hydrogen production unit with natural gas;
- continued modernization of the vacuum distillation unit of the VT-6 unit;
- continued work on the advanced oil refining complex project.

Milestones of 2017:

- increase in the refinery's design capacity from 12 mn to 14 mn t per year due to the reconstruction of the LK-6U No. 1 crude refining unit;
- the reconstruction of the diesel fuel production unit (DFPU) led the refinery to launch diesel fuel dewaxing processes as a result of which a product with improved low-temperature properties was generated.

Plans for 2018:

- the continued construction of the hydrocracking complex for heavy oil residues.

In addition to its own oil refineries, Gazprom Neft has access to the refining facilities of Slavneft-YANOS and Mozyr Oil Refinery in the Republic of Belarus.

Improved efficiency at the Moscow Oil Refinery in 2017 generated

RUB **1.3** BN

MOSCOW OIL REFINERY

Moscow Oil Refinery specialists implemented 45 measures to increase production efficiency in 2017.

The total economic effect for the year amounted to RUB 1.3 billion, with work carried out at 25 production facilities.

The enterprise experienced the greatest effect from the modernization of Crude Vacuum Unit-6, which resulted in a 16 p.p. increase in furnace efficiency to 83%. Production of high-octane petrol components at the catalytic reformer unit also increased and the load on the process equipment of the visbreaking unit was diminished.

2 — Share of Gazprom Neft PJSC.

3 — Share of Gazprom Neft PJSC. The volume of oil refining at the Mozyr Oil Refinery is determined by the schedule approved by the Ministry of Energy of Russia. The Company can refine up to 50% of the oil supplied to the refinery. The actual volume of refining at the refinery is determined by its economic efficiency.