Downstream Division

Key activities under the Downstream Division's Energy Saving and Energy Efficiency Improvement Programme in the reporting period include:

- revamp of process furnaces and technical upgrade of boilers (enhancement of flue gas heat utilisation);
- optimisation of compressor equipment operations and upgrade of lighting systems;
- optimisation of heat supply layouts, recovery of heat from production processes (use of thermal power from product flows for heating up feedstock and other process flows).

Energy savings under the energy saving and energy efficiency programme amounted to 3.3 PJ (petajoules) or 3,347 TJ.

Implemented as part of a large-scale refinery upgrade exercise launched by Gazprom Neft back in 2008, the Energy Saving and Energy Efficiency Improvement Programme made a significant contribution to the Downstream Division's performance.

Under the Programme, the Company builds new modern units, implements automated control systems and replaces outdated production units at the refineries. In 2018, economic benefits from energy saving initiatives at Omsk and Moscow refineries amounted to ₽ 447.4 m, exceeding the initial targets by 50%. At Omsk Refinery, impressive results came on the back of a new automated system for cleaning the heating surfaces of furnaces at the facility for deep conversion of fuel oil, optimisation of process furnaces, and installation of higher-performance insulation in the main steam pipelines. At the same time, Moscow Refinery saw systemic optimisation of furnace operation modes at the facilities for hydrotreatment of cat cracking gasoline, bitumen and hydrogen production, and oil distillation. On top of that, compressed air supply schemes at production facilities were optimised and the upgrade of heat and steam condensate equipment was completed. In 2018, the Company implemented a total of 25 energy saving initiatives at Omsk and Moscow refineries.

790

₽ M
economic effect

3,347

TJ
electricity, heat and fuel savings

Energy savings in the Downstream Division in 2018

170,400

GCAL
of heat

50,900

T
of natural fuel

9.3

M KWH
electric power

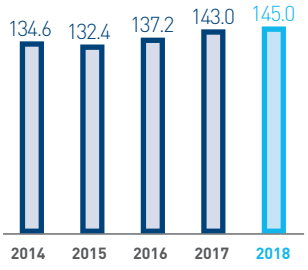
Power purchased[1] by the Downstream Division

Indicators	2014	2015	2016	2017	2018
Purchased power, MWh	3,262,669	3,340,550	3,400,210	3,236,805	3,395,831
Purchased heat, GJ	16,581,709	16,081,895	15,186,997	15,531,129	16,779,175

Energy intensity index at the Company's refineries[2]

Refinery	2014	2015	2016	2017	2018
Omsk Refinery	117	114	110	107	106
Moscow Refinery	122	114	113	111	111
YANOS	108	108	107	105	103
Pančevo Refinery (Serbia)	126	122	118	113	111

Specific energy consumption
(kg of fuel equivalent / t)[3]



CLEAN ENERGY

Gazprom Neft promotes renewable energy generation. In 2018, Omsk Refinery launched a pilot project to build the Downstream Division's first **solar power plant** with an installed capacity of 1 MW. Subject to the satisfactory performance of the pilot plant, the Company will consider an increase in its capacity to 20 MW in 2022.

NIS runs projects on the use of **geothermal energy**, planning to build power plants based in the geothermally active areas in the northern part of Serbia.

NIS also takes part in a joint venture aimed at the construction of Plandiste **wind park** comprising 34 wind generators with a total capacity of 102 MW and expected annual output of 212 GWh of electrical power. The wind park operation will reduce emissions by 332 kt of CO_2 equivalent per year.

[1] Excluding volumes transferred to third parties.

[2] Calculated in line with the methodology provided by Solomon Associates. Energy Intensity Index (EII) compares actual energy efficiency for a refinery with the "standard" energy efficiency for a refinery of similar size and configuration, showing the ratio of a facility's actual energy consumption to the standard energy consumption. The lower the EII is, the higher the facility sits on the energy efficiency scale.

[3] Specific energy consumption growth came on the back of greater conversion rate.