

DOWNSTREAM DIVISION

7.8 TJ

ELECTRICITY, THERMAL
ENERGY, AND FUEL SAVINGS

RUB 929.7 MN

ECONOMIC EFFECT

In 2017, the enterprises of the Downstream Division continued implementing the activities of the integrated Energy Conservation and Improved Energy Efficiency Programme. Gazpromneft-Aero and Gazpromneft-BM have joined the programme, which as a result now includes the energy conservation activities of 49 production assets in the Downstream Division.

Main activities of the programme:

- replacing and modernizing process furnaces to increase their efficiency
- optimizing the recuperation system and using secondary energy resources in technological processes
- increasing the efficiency of fuel use in process furnaces by utilizing modern technologies
- optimizing condensate collection and return systems
- optimizing the operation of compressor equipment
- increasing the efficiency of heat and steam supply systems
- modernizing lighting systems
- replacing turbo drives and steam pumps with electric drives

As a result, the savings of fuel and energy resources within the Division exceeded the targets and amounted to:

- thermal energy – by 279,400 Gcal
- fuel – by 137,500 tonnes of natural fuel
- electricity – by 18.9 mn kWh

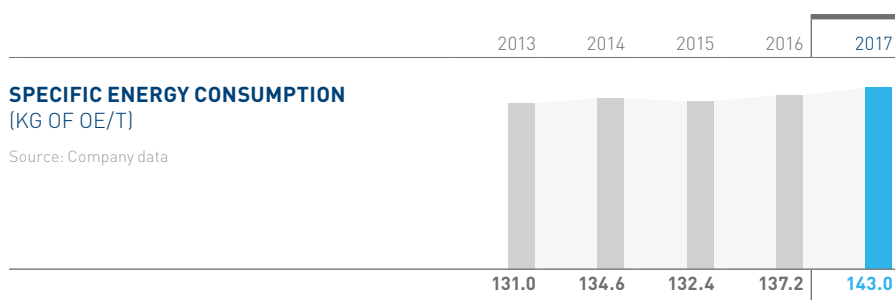
MOSCOW OIL REFINERY IMPROVES ENERGY EFFICIENCY

The modernization and repair of key units at the Moscow Oil Refinery in 2017 reduced the refinery's fuel consumption by 2.1% and thermal energy consumption by 0.9%.

The biggest contribution to the reduction in fuel consumption came from the modernization of the technological furnaces of crude vacuum unit-6, which accounts for 19% of the refinery's total energy consumption, and the completion of a project to switch the furnaces from liquid to eco-friendly gas fuel. The installation of modern energy-efficient equipment and the transfer of the entire refinery's lighting system to energy-saving technologies also helped to conserve energy.

CONSUMPTION OF PURCHASED ENERGY WITHIN THE DOWNSTREAM DIVISION

Indicator	2013	2014	2015	2016	2017
Purchased electricity (minus electricity transferred to third parties), MWh	3,322,147	3,262,669	3,340,550	3,400,210	3,236,805
Change vs. previous period, %	6.4	(1.8)	2.4	1.8	(4.81)
Purchased thermal energy (minus electricity transferred to third parties), GJ	17,373,245	16,581,709	16,081,895	15,186,997	15,531,129
Change vs. previous period, %	3.1	(4.6)	(3.0)	(5.6)	2.27



The implementation of measures contained in the integrated programme to improve the reliability of power supply to refineries has reduced the number of power failures at refineries by 15% compared with 2016.

In general, energy conservation activities made it possible to save 7.8 TJ of thermal energy, electricity, and fuel. The economic effect exceeded the targets and amounted to RUB 929.7 million.

The increase in specific energy consumption in 2017 is due to a decrease in refining volumes and the utilization rate of secondary processes in accordance with the production program as well as the reconstruction and commissioning of new units at the Moscow and Omsk Oil Refineries and the start of the production of Group III oils at Slavneft YANOS OJSC.

“The results of the energy conservation programme are a kind of indicator of the success and coordination of the work performed by a large team of specialists. Our further work in this area is consistent with the main trends in the industry’s development and is based on the digitization of business processes with the active use of components of predictive analytics and progressive IT solutions and technologies”.

Vladimir Andreyev

Head of the Energy Department
of the Downstream Division

The Energy Conservation and Energy Efficiency Programme combines energy-saving measures at 49 production assets of the Downstream Division.

ENERGY INTENSITY INDEX OF THE COMPANY’S OIL REFINERIES¹

Enterprise	2013	2014	2015	2016	2017
Omsk Oil Refinery	123	117	114	110	107
Moscow Oil Refinery	123	122	114	113	111
YANOS	110	108	108	107	105
NIS	–	126	122	118	113

¹ — Calculated according to the methodology of the company Solomon. The Energy Intensity Index (EII) allows for a quantitative comparison of the energy efficiency of a specific oil refinery with another refinery that is similar in terms of production units and work conditions. The index shows the ratio of actual energy consumption versus the enterprise’s standard energy consumption. The smaller an enterprise’s EII value is, the better its energy efficiency level is.