

Energy efficiency

Gazprom Neft actively works on improving energy efficiency, optimising the use of natural resources and introducing a systematic approach to meeting these objectives at its enterprises.

The Company has an Energy Policy that serves as the foundation of the energy management system (EMS), which meets the requirements of international standard ISO 50001:2011. The Company's enterprises have been gradually introducing the EMS since 2012.

Main goals of Gazprom Neft in energy conservation and efficiency:

- to improve the energy efficiency of the Company's enterprises while maintaining or improving the level of reliability, safety and productivity;
- to mitigate any negative environmental impact;
- to reduce the consumption of non-renewable energy resources.

EXPLORATION AND PRODUCTION UNIT

Electricity expenses make up a large portion of the operating expenses for oil production. A key energy efficiency indicator at the enterprises of the Exploration and Production Unit is the specific consumption of electricity for liquid hydrocarbon production. In 2015, this indicator declined by 1% compared with 2014. The energy efficiency programme exceeded its target by 92%. The Unit had energy savings of 205 million kWh (RUB 640 million).

Highlights of 2015:

- use of high efficiency electrical submersible pump units;
- introduction of permanent magnet motors;
- operation of downhole equipment in periodic operating modes;
- reduction in water produced and its pumping into the formation (shutdown of unprofitable wells and performance of geological and technical measures);
- selection of the optimal size and replacement of pumping units at water-injection and booster pumping stations and initial water separation units;
- installation of variable frequency drives on pumping equipment;
- reduction in power grid losses.

CONSTRUCTION OF GAS TURBINE POWER PLANTS

Gazprom Neft has launched construction on a gas turbine power plant (GTPP) at the Novoportovskoye field with projected capacity of 96 MW and the ability to expand to 144 MW. The plant will be one of the largest on the Yamal Peninsula. Both natural gas and associated petroleum gas may be used as raw materials for the future power plant. The GTPP will supply electricity to infrastructure facilities that extract, transport and store hydrocarbons as well as a year-round crude oil trans-shipment terminal that is being built near Mys Kameny. The new GTPP will make it possible to avoid a shortage of generating capacity by providing stable power supplies to the project's facilities and enhancing its industrial safety.

SPECIFIC ELECTRICITY CONSUMPTION FOR THE PRODUCTION OF LIQUID HYDROCARBONS BY THE EXPLORATION AND PRODUCTION UNIT // kWh/t

	2011	2012	2013	2014	2015
Specific electricity consumption for the production of liquid hydrocarbons by the Exploration and Production Unit, kWh/t of liquid	29.06	29.07	29.00	28.94	28.66
Specific electricity consumption for the production of liquid hydrocarbons by the Exploration and Production Unit, RUB/t of liquid	66.4	67.9	73.1	77.6	76.8

OVERALL ENERGY CONSUMPTION BY THE EXPLORATION AND PRODUCTION UNIT //

	2011	2012	2013	2014	2015	Change, %
Electricity consumption (purchase and generation), GWh	5,322	5,690	6,033,	6,177	6,420	3.9
Electricity consumption (purchase and generation), RUB mn	12,157	13,297	15,214	16,573	17,199	3.8
Heat consumption (internally produced and purchased from third parties), Gcal	304,552	294,062	291,033	254,301	234,539	-8
Heat consumption (internally produced and purchased from third parties), RUB mn	674	686	693	700	696	-0.6

The substantial reduction in the volume of heat consumed for oil production processes in 2015 is attributable to the implementation of an energy conservation programme, the preservation of production sites and changes in ambient air temperatures in 2014 and 2015.

LOGISTICS, PROCESSING AND SALES UNIT**Key energy efficiency measures performed by the Unit in 2015:**

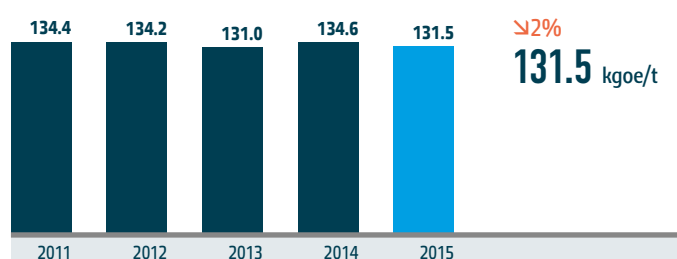
- introduction of motor drive frequency regulation systems;
- modernisation of lighting systems;
- introduction of energy efficient equipment and devices;
- replacement of boilers;
- compliance of furnaces with requirements of existing regulatory and technical documentation;
- reconstruction of the brickwork (lining) of boilers and furnaces with modern insulation materials;
- recovery and utilisation of heat flows;
- reconstruction of condensate collection and return systems;
- modernisation of heating systems;
- modernisation of forced air compressor equipment and air dehumidification systems;
- optimisation of furnace burning modes in order to reduce fuel consumption.

Energy costs decreased by RUB 937 million as a result of the measures to improve energy efficiency. The amount of heat, electricity and fuel saved totalled 3,973.9 TJ. Growth in energy intensity related to the introduction of new technological units slowed by 1.5%.

In 2015, the Logistics, Processing and Sales Unit approved a comprehensive programme to improve the reliability of power supplies to oil refining enterprises in 2016-2018. The programme aims to reduce the amount and duration of unplanned downtime of oil refinery technological units resulting from the disruption of power supplies and the failure of energy equipment.

SPECIFIC ENERGY CONSUMPTION AT ENTERPRISES OF THE LOGISTICS, PROCESSING AND SALES UNIT // kgoe/t

Source: Company data

**OVERALL ENERGY CONSUMPTION BY THE LOGISTICS, PROCESSING AND SALES UNIT //**

	2011	2012	2013	2014	2015	Change, %
Purchased electricity (minus electricity transferred to third parties), GWh	2,998	3,121	3,322	3,263	3,341	2.4
Purchased electricity (minus electricity transferred to third parties), RUB mn	5,764.67	5,768.32	6,883.46	6,831.58	7,335.72	7.4
Purchased thermal energy (minus electricity transferred to third parties), GJ	16,308,921	16,854,981	17,373,245	16,581,709	16,081,895	-3.0
Purchased thermal energy (minus electricity transferred to third parties), RUB mn	2,881.65	3,139.58	3,561.40	3,693.30	3,675.15	-0.5