



“Our successes in 2017, the expansion of our resource base, the growth in inventories, greater efficiency, the record volume of production, and the record profit are all due to the use of the most advanced technological solutions”.

Alexander Dyukov

CEO of Gazprom Neft PJSC

FUNDAMENTAL DOCUMENTS

TECHNOLOGY STRATEGY OF THE UPSTREAM DIVISION

The Upstream Division drafted a Technology Strategy in 2014. It serves as a driver for the Company’s organic growth and is a key to solving the problem of the cost-effective incorporation of hard-to-recover reserves into development. Today, the Technology Strategy encompasses all the division’s priority areas, including technologies for geological exploration and the development of the resource base:

- well drilling and completion technologies;
- enhanced oil recovery and intensification of the inflow;
- development of unconventional reserves;
- development of sub-gas deposits;
- Electronic Asset Development (EAD);
- development of carbonate and fractured reservoirs;
- new generation infrastructure;
- capital construction.

The Technology Strategy is managed by the Management Committee chaired by the First Deputy CEO of Gazprom Neft PJSC.

The Upstream Division has introduced the Technology Management System (TMS), which consists of a structured set of methods, standards, and supporting tools that constitute a single system for managing processes involving the search for, selection, testing, introduction, and replication of technologies.

One of the key components of the TMS is the technological asset development plan (ADP), which consists of a portfolio of technological solutions that are proposed for each specific asset.

The projects implemented within the framework of the Technology Strategy have had a noticeable effect. For example, the technology strategy budget of 2016 was recouped by the results of four major projects in 2017.

The main principles of the Company's updated Technology Strategy in 2018 should be the effectiveness of incorporating reserves and supporting new production projects.

Priorities will include support for new major projects in the early stage of implementation (Yamal or the Yamburgskoye field), the effective incorporation of residual recoverable reserves (RRR) into extraction, the incorporation of hard-to-recover reserves (HRR) into development, and the development of enhanced oil recovery methods.

 For more on technologies, see the 'Raw materials base and production' section on p. 52

R&D STRATEGY OF THE DOWNSTREAM DIVISION

The oil refining segment has its own long-term R&D Strategy. Introducing R&D results at oil refineries enables the Company to increase the yield of high-margin products while taking into account the technological conditions of a specific refinery and to also reduce operating costs.

The R&D portfolio is managed at the corporate level by the Oil Refining Directorate. The R&D units of oil refineries are responsible for implementing specific projects. External developers of technologies, including leading domestic scientific organizations and universities, are involved in performing R&D.

In 2017, the oil refining R&D portfolio was comprised of roughly 30 projects in key areas, including the construction of catalysts for catalytic cracking and hydrogenation processes. The economic effect alone from the introduction of the Company's own catalysts in 2017 exceeded the total R&D costs over the past seven years by more than two-fold.

 For more on technologies, see the 'Oil refining' section on p. 64

INNOVATIVE DEVELOPMENT PROGRAMME

In 2016, the Company updated its Innovative Development Programme, which is based on measures that aim to introduce a set of technologies to enhance well productivity as well as the following key projects:

- soda-surfactant-polymer flooding technologies;
- technologies to incorporate unconventional oil reserves into development;
- the development and production of catalysts for catalytic cracking and hydrogenation processes.

In addition, production digitalization projects in the oil production and refining segments are also an important part of the Innovative Development Programme.

Projects that are part of the Technology Strategy and R&D Strategy have been included in the Innovative

Planned funding for the Technology Strategy and R&D Strategy in 2018 amounts to roughly

RUB **2.3** BN

Development Programme, which primarily targets the Company's partners. This document informs external entities involved in the innovation environment about Gazprom Neft's technological priorities and needs.

Portfolio analysis

In accordance with best practices, Gazprom Neft does not evaluate its investments in isolation, but as part of its portfolio.

Multiple alternative development options are generated for each asset in production, refining, and sales and any of them may be included in the final portfolio. The Company uses its own analytical tools to regularly evaluate hundreds of possible options and generate optimal combinations of project portfolios from them.

The Company's goal is to select the optimal portfolio taking into account strategic goals, investment restrictions, the permissible debt burden, the significance of the project for the state, the level of risk, and synergy with future projects. A portfolio analysis allows for making the best investment decisions in all areas of the Company's operations, whether it's developing a new field, building an oil refinery, developing a sales network, or buying or selling an asset.

DIGITAL TRANSFORMATION

**Total volume
off data accumulated
in the Gazprom Neft system**

6 000 TB

Digital transformation is one of the most important aspects of the business development strategy for Gazprom Neft. New generation production management systems are being created in all segments of the Company's operations. They involve the integrated management of all services to maximize asset value, the use of digital counterparts to optimize operating modes and maintenance plans, and the use of cognitive systems to support decision-making by operators. Projects are implemented at all stages of the value chain, from extracting enterprises to the sale of petroleum products.

At present, the Company's data processing centres have accumulated huge amounts of information – approximately 6,000 TB. Gazprom Neft is effectively exploring opportunities for the monetization of such information. In particular, individual components of big data technologies have been tested or applied in production to solve business challenges as regards projecting the effectiveness of complex geological and technical measures, clustering wells, and automating the interpretation of seismic research results. For its part, the Efficiency Control Centre was established within the Downstream Division and is responsible for managing the division's entire value chain.

Knowledge Dissemination System

The Knowledge Dissemination System (KDS) is a tool that helps coordinate the management and exchange of knowledge in matters concerning oil exploration and production within the Gazprom Neft Group in order to solve technological and production objectives. It is designed based on an analysis of the world's best knowledge management systems.

The KDS systematizes information about the best practices employed by the Company in matters concerning exploration and production. Employees have access to documents that contain experience with resolving production-related challenges, lessons that have been learned, and useful practices that have been identified as well as descriptions of technologies, scientific articles, and publications by the Company's employees.

The KDS enables the user to conduct a comparative analysis and select optimal technical solutions in accordance with the necessary criteria. It also stores data on all tests of new equipment conducted within the Company.

At the end of 2017, the KDS contained and actively used more than 8,000 documents. The monthly number of requests in the KDS exceeded 52,000.