



The Yuzhno Russkoye natural gas reservoir

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The Yuzhno Russkoye field is located about 3,500 kilometers north-east of Moscow in the autonomous district of Jamal-Nenets in Western Siberia. It has recoverable reserves of more than 600 billion cubic meters of natural gas. At the end of 2007, the Gazprom company and Germany's largest internationally active oil and gas producer, Wintershall, commenced production from the Yuzhno Russkoye gas field. Yuzhno Russkoye provides the resource base for the Nord Stream gas pipeline.

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The reservoir license is held by the OAO Severneftegazprom joint venture. Wintershall has a 25% stake in this joint venture minus three shares. Wintershall has a 35% share in the earnings from Yuzhno Russkoye.

145 wells are currently in operation at the reservoir. The total daily production amounts to about 70 million m³ of natural gas, subject to seasonal influences.

The Yuzhno Russkoye field consists of four rock strata containing natural gas and oil: Cenomanian, Turonian, Lower Cretaceous and Jurassic. Natural gas has been recovered from the Cenomanian layer since 2007. Compressors are used to counter the naturally falling pressure and reduced production. The new compressor station with four gas compressors was put into operation at the end of 2015. "It will ensure that we can also continue to supply stable natural gas to Europe during the coming years," explains Marco van der Meulen, Deputy Director General of Severneftegazprom. Each year, 25 billion cubic meters of gas are transported from the field to Europe.

The Severneftegazprom joint venture company has been investigating the development of further formations for some time. A true milestone was reached in December 2011 with the start of the first test production well for recovering natural gas from the Turonian formation, which has been drilled to a depth of 810-840 meters. Several Turonian wells are currently in test operation, from which around 650 million cubic meters of gas have already been recovered. The plant is scheduled to go into operation with twelve wells from August 2018. Severneftegazprom plans to carry out large-scale development of the Turonian layer in 2020.

In addition, sandstone formations in Lower Cretaceous and Jura strata in the Yuzhno Russkoye license area, which are up to 4,000 meters deep, have been undergoing testing since April 2014. Six exploration wells were completed in 2017. Two further exploration wells in the Jurassic layer are planned for 2020. As part of these exploration activities led by Severneftegazprom, up to 200 meter-long drill cores will be extracted from each well in order to gain additional information about possible natural gas, gas condensate and oil reservoirs.

Key project data:

- Recoverable reserves: More than 600 billion m³ of natural gas
- Annual production rate (plateau production): 25 billion m³ natural gas (approx. 70 million m³ of natural gas per day)
- Plateau production: Since 2009, one year sooner than planned
- By the end of 2017, more than 240 billion m³ of gas were produced from the reservoir
- Concession surface area of the Yuzhno Russkoye natural gas reservoir: 722 km²
- Geological structure: Depth level 810-4000 m (Turonian, Cenomanian, Lower Cretaceous, Jurassic)
- Severneftegazprom has a certified integrated management system based on the international HSE and quality management standards ISO 14001, ISO 9001 and OHSAS 18001, ISO 50001

Special features of the project:

- The reservoir is situated about 3,500 km northeast of Moscow
- To develop the infrastructure, more than 200 km of streets and roads were built, 13 bridges, more than 235 field gathering lines as well as living quarters for 420 employees. A connecting pipeline measuring almost 120 km connects Yuzhno Russkoye to the Siberian pipeline network

Project chronology

1969	Discovery of the Yuzhno Russkoye reservoir
1979	Start of the first exploration phase: The reserves in the Cenomanian (depth 1,000 - 1,700 m) and Senon strata (depth: 2000-3000 m) in the Yuzhno Russkoye reservoir were discovered and initially confirmed by the USSR's National Commission for Raw Material Reserves (GKZ). The Lower Cretaceous and Jurassic strata (depth: 2000-3000 m) also underwent a thorough seismic survey
1990	Start of the second exploration phase
2004-2006	Construction of plants and infrastructure to mine the Cenomanian formation
2007	Production begins – Wintershall becomes shareholder
2009	Plateau production is reached, one year sooner than planned. Natural gas production rate is 25 billion m ³ /p.a. from more than 140 wells
2011	International bank consortium provides project funding First gas supplies to Germany and Europe via Nord Stream
2011	Test production operations from the Turonian formation begin
2014	Second test well from the Turonian formation starts production
2015	Further test drilling in the Turonian formation and the start of exploration of sandstone formations in Lower Cretaceous and Jura strata

2016 Work begins on the sixth out of a total of eight exploration wells in the sandstone formations in Lower Cretaceous and Jurassic strata. Total gas production surpasses 200 billion cubic meters

2017 Third test well from the Turonian formation starts production. 10 years since production began in the Yuzhno Russkoye field

From appraisal to production: This is what happens at Yuzhno Russkoye

