

Summary

Portovaya compressor station

The Portovaya compressor station (CS) of the Gryazovets – Vyborg gas trunkline will be located on the Russian coast of the Baltic Sea in the Portovaya Bay near Vyborg, Leningrad Oblast. The CS will be a starting point for gas supplies via the Nord Stream gas pipeline.

The Portovaya CS will become a unique gas transmission facility in terms of capacity (366 MW) and operating pressure (220 Ata) having no counterparts in the world.

In addition, the CS is unique because it will ensure gas transmission over the distance of some 1,200 kilometers via the Nord Stream gas pipeline with the subsequent gas delivery to onshore gas pipelines in Germany avoiding construction of an extra compressor station in the landfall point.

The novel equipment and cutting-edge innovative technologies, which have not been produced in the country so far, will be applied during the CS construction.

Thus, in December 2008 Gazprom and Rolls-Royce signed the contract for 6 gas-pumping units (GPUs) with the capacity of 52 MW and 2 GPUs with the capacity of 27 MW to be supplied for the Portovaya CS. The 52-MW GPUs will be used in the Unified Gas Supply System operation for the first time ever.

In March 2009 Gazprom and Siirtec Nigi S.p.A. signed the contract to design and construct a gas treatment unit (GTU) to be located at the Portovaya CS. The GTU will not admit condensate and gas hydrates into

the submerged gas pipeline, therefore raising the Nord Stream's operational reliability.

The GTU construction project is unique as it envisages making a world's unparalleled unit in terms of performance. The unit is designed to dehydrate 170 million cubic meters of natural gas daily, which is 3.6-fold higher if compared to the GTU of the Krasnodarskaya CS at the Blue Stream gas pipeline running across the Black Sea bottom from Russia to Turkey. The first phase of the GTU is to be accomplished by late 2010, the second – by late 2011.

By now, the engineering survey has been carried out, the access roads and the construction camp have been built at the CS location. The work is underway to create the major and auxiliary production sites, a wharf is almost ready in the Dalnaya Bay to receive large and heavy cargoes.

The first-stage compressor capacities at the Portovaya CS are to be put onstream in 2011, with the subsequent increase in performance up to 366 MW by late 2012.

Gryazovets – Vyborg gas trunkline

Gazprom is constructing the Gryazovets – Vyborg gas trunkline in the aim of securing gas deliveries from the Unified Gas Supply System to the Nord Stream gas pipeline and supplying consumers of Russia's Northwestern region.

The gas pipeline will cross the Vologda and Leningrad Oblasts. The 1,400-millimeter pipeline with the operating pressure of 9.8 MPa and the annual throughput capacity of 55 billion cubic meters will stretch 900 kilometers. The project envisages constructing seven compressor stations including the Portovaya CS.

All the necessary permits have been obtained for the project including the positive findings by Russia's State Expert Evaluation Directorate (Glavgosekspertiza).



The first joint of the Gryazovets – Vyborg gas pipeline was welded on December 9, 2005 in the Vologda Oblast (town of Babayevo).

At present, more than 600 kilometers of the pipeline have been built. The linear part of the pipeline is to be completed by late 2010. Between 2009 and 2011 compressor workshops will be built and commissioned at the Gryazovetskaya, Babayevsckaya, Volkhovskaya, Elizavetinskaya and Portovaya CSs. The capacities of the Sheksninskaya and Pikalevskaya CSs are projected to be put onstream in 2012.

Construction of the Gryazovets – Vyborg gas pipeline is synchronized with the activities on the Nord Stream project and progresses according to the approved schedule. The pipeline will be put onstream in a stagewise

manner starting from 2011. The design capacity is to be achieved by late 2012.

The advanced practices of domestic companies and innovative technical solutions are applied during the construction, thus ensuring high reliability, technical and economic efficiency and environmental safety.

The linear part was constructed using the domestically-manufactured pipes with interior flow coating (Izhora Pipe Plant, Vyksa Steel Works, Volga Pipe Plant), as well as the new-generation check valves.

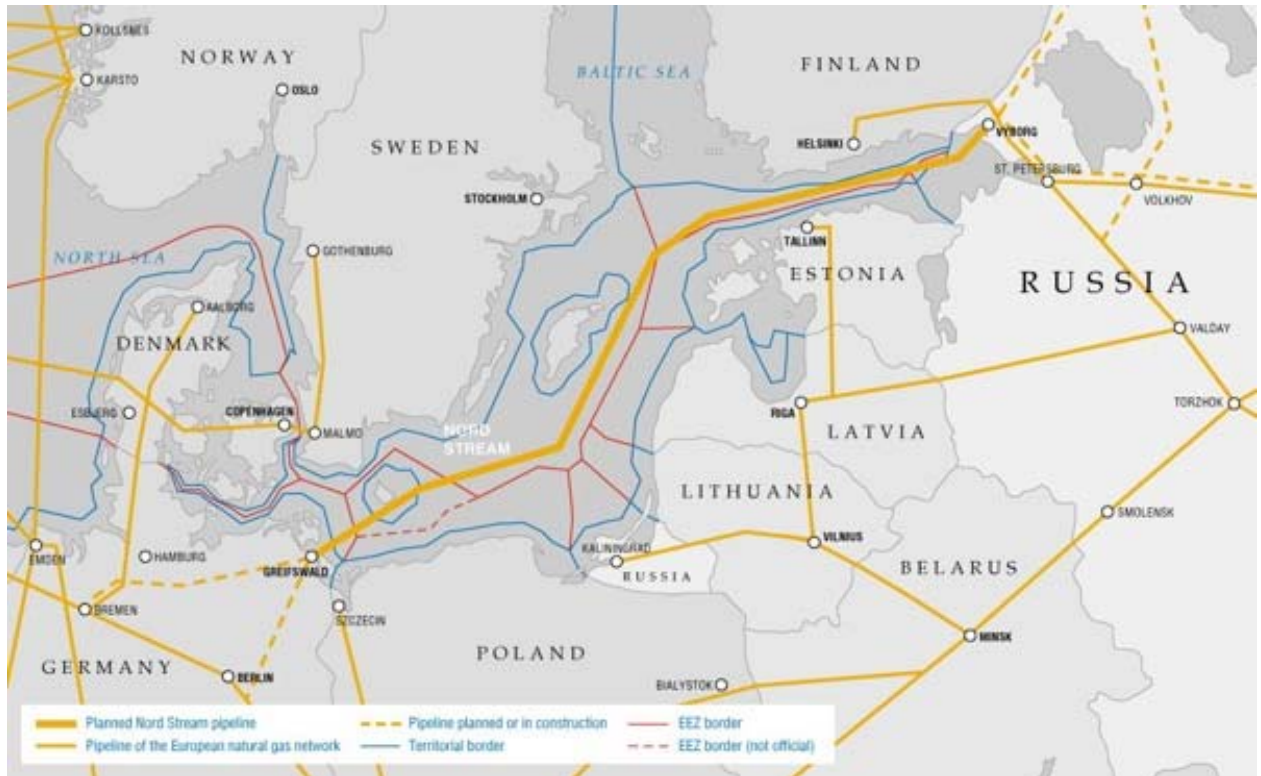
The pipeline crossing through watercourses are being built using the horizontal directional drilling (Sheksna and Volkhov Rivers) and microtunneling techniques (Neva River, Saima Channel), which makes it possible to avoid interference with river ecosystems during the construction and operation processes. The reliability of crossings is ensured by the wall thickness increased up to 26.3 millimeters, application of the polyethylene pipeline casing, the plant-manufactured external anti-corrosion coating made of three 3.5-millimeter layers and the interior epoxy coating.

In order to raise the energy efficiency of gas transmission, the compressor stations are constructed with the use of new-generation high-efficiency energy-saving equipment.

Nord Stream gas pipeline

The Nord Stream is a prioritized project targeted at Russian gas supply diversification and transit risks reduction. It is a vivid example of maturing energy cooperation between Russia and Europe.

The Nord Stream will connect the Russian Baltic coast near Vyborg with the German Baltic coast near Greifswald. The pipeline length will make up some 1,200 kilometers.



The Nord Stream is nowadays most highly developed among the new projects for extra gas volumes transmission to Europe. No other project provided for such a thorough survey of the Baltic Sea. In addition, multilateral consultations held on the Nord Stream resulted in the final document – the Espoo Report, another unprecedented indication of the project transparency, environmental safety and compliance with all the national and international requirements.

The Nord Stream is being carried out according to the approved schedule. Permits to construct the offshore gas pipeline have been already granted by the five so-called transit countries – Denmark, Germany, Russia, Finland and Sweden. The first string of the Nord Stream is projected to be commissioned in 2011, the second – in 2012. The aggregate capacity of the pipeline will account for 55 billion cubic meters per annum.

The Nord Stream execution has considerably advanced the cooperation among commercial companies, state bodies and non-governmental institutions, as well as significantly boosted the interaction of Gazprom, the world's largest natural gas exporter, and European gas companies. At present, in addition to the Russian concern, the German BASF and E.ON and the Dutch Gasunie are also engaged in the submerged gas pipeline construction. The French GDF SUEZ has also expressed interest in joining the project. The foreign partners' interest in the Nord Stream is another proof of the urgency of creating additional routes of Russian gas supply in the aim of raising the European energy security.