

The Future Prospects for Japan-Russia Cooperation in the Gas Sector

MASTEPANOV, Alexey

Advisor to the Deputy Chairman, Gazprom

Taking as its base the expansion and positioning of the resource base, it is considered that Gazprom and Russia's development of the gas sector in the first half of the 21st century will continue to be expanded centered on three new gas production areas, namely: the sea surrounding the Yamal Peninsula; the continental shelf from the Barents Sea to the Pechora Sea; and the eastern regions of Russia. The gas production of these regions will be something which will determine the strength of Russia in the energy sector.

Over 27% of Russia's gas resources are concentrated in the eastern part of the country, of which 52 trillion cubic meters are onshore in Eastern Siberia and the Russian Far East and 15 trillion cubic meters are on the continental shelves of Eastern Siberia and the Russian Far East. In order to utilize these resources effectively in September 2007 the Russian government adopted the so-called "Eastern Gas Program". In accordance with this program they are to create four large gas production centers and in 2030 the volume of gas produced will grow to 160-200 billion cubic meters. Initially the gas production centers will be connected by trunk gas pipelines, and in the future this will form Russia's Unified Gas Supply System. By 2030 the total export volume will grow to more than 50 billion cubic meters by pipeline and 28 billion cubic meters in the form of LNG.

The composition of the gas in the eastern part of Russia has complicating characteristics including containing a lot of helium, and having oil rims in the gas strata. The Russian government, as the owner of the underground reserves, wants to extract these components completely, and process them into high value-added products. Within the Eastern Gas Program, they are planning to create a gas-processing and gas-chemical complex and produce approximately 14 millions tons of export-oriented products annually by 2030.

Gazprom, with the aim of implementing the Eastern Gas Program, has set up a string of subsidiary companies in the eastern regions of Russia. An active project currently is the Kamchatka gas supply project (Figure 1). It is being executed on the instructions of the President, and as the first phase, the construction of the pipeline from Sobolevo to Petropavlovsk-Kamchatsky and the infrastructure upgrading for the Kshuuskoye gas and condensate field commenced in the autumn of 2010. In addition, they are constructing gas-distribution pipeline networks in Petropavlovsk-Kamchatsky, and are planning the introduction of coal gas. In Kshuuskoye this year they have reached the planned production volume, and the first phase commercial production has commenced at the Nizhne-Kvakchinskoye gas and condensate field also. A geological exploration program to 2014 was formulated, and the drilling of exploratory wells has been started on the continental shelf of western Kamchatka. If new gas fields

are discovered, then production of LNG on Kamchatka, gas supply to the Far Eastern Federal District, and exports will become possible in the future.

In 2009, the second phase of "Sakhalin-II" came to a close, in which Gazprom had participated as the largest stockholder. Russia's first LNG plant started operations, and became a pilot project for Gazprom. Currently they have started work on the development of "Sakhalin-III", and have been carrying out exploratory drilling, three-dimensional seismic survey work, and geological analysis of sea-bed samples in the Kirinsky, Vostochno-Odoptinsky and Ayyashsky blocks (Figure 2). As a result of the analysis for the last two-year period, the volume of the gas reserves of the Kirinsky block has practically doubled. In 2010, the Yuzhno-Kirinskoye gas and condensate field, making up 260 billion cubic meters of the reserves in the Kirinsky block, was discovered. Furthermore, in October 2011, a new gas field was discovered within the Mynginskaya geological structure. The geological exploration of the Kirinsky block has been nearly completed, and the construction of handling facilities on land has commenced. They have planned the commencement of supply of 4.2 billion cubic meters annually to the Russian Far East, with the first gas in the second quarter of 2012.

The construction of the "Sakhalin-Khabarovsk-Vladivostok" gas pipeline (SKV) is to be a foundation for the development of the Far Eastern region. Via the implementation of this project, the project for the connecting-up to the gas supply of Khabarovsk Krai and

Figure 1: The Kamchatka Gas Supply System

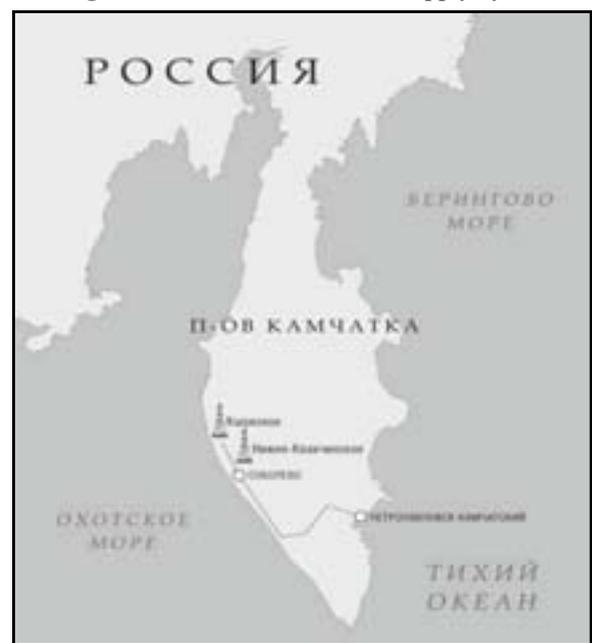
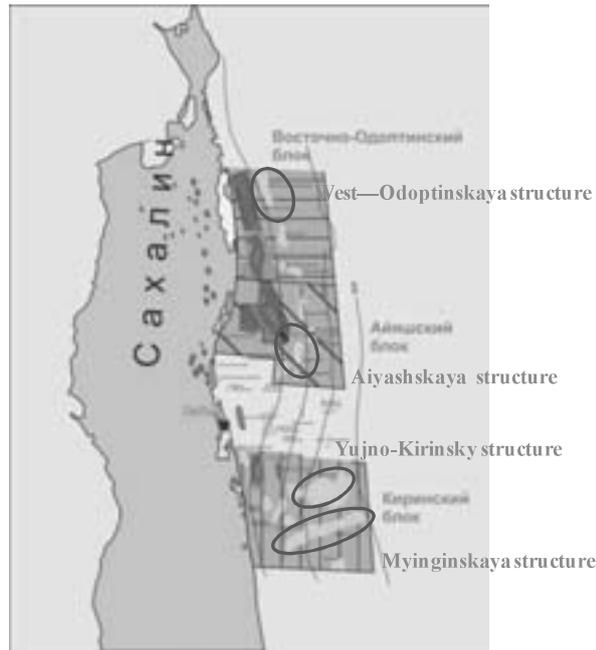


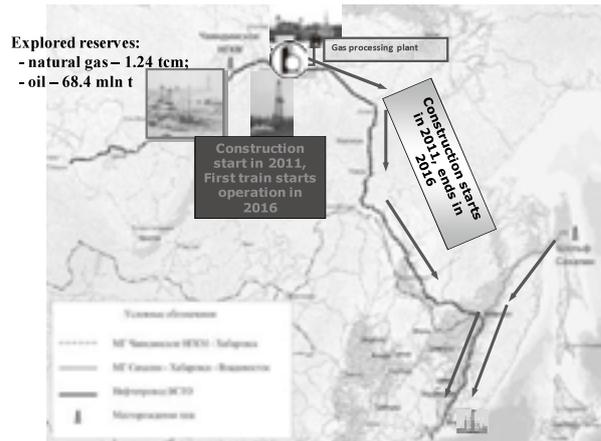
Figure 2: The Sakhalin-III Project

Primorsky Krai will be realized. The initial transportation volume, at 6 billion cubic meters annually, will be configured, besides pipelines, by compressor stations, gas distribution stations in Vladivostok, electricity supply systems, remote management, communications, and access roads. The main sources of supply will be: the Russian government's royalties from Sakhalin-II; if agreed, gas from Sakhalin-I; and in the future gas from the Sakhalin-III project. In tune with the progress in the development of the resources of the Sakhalin continental shelf, they will widen the bore of the gas pipeline from Komsomolsk-na-Amure to Khabarovsk. In the future, if the development of the Yakutia fields is begun, then they are to build 13 compressor stations and increase the carrying capacity to approximately 30 billion cubic meters.

The construction of the SKV began in July 2009, and the first-phase construction ended on 8 September 2011. The bore of the gas pipeline is 1,220 mm, the operating pressure is 9.8 MPa, the total length is 1,296 km, and the designed capacity is 30 billion cubic meters annually. From the Vladivostok gas distribution station it will branch to the Russky Island APEC summit facilities and combined heat and power plants. The gas supply to Vladivostok will also reduce the burden on the environment.

In Yuzhno-Sakhalinsk the installing of new gas-supply connection facilities and gas supply were effected on 19 March 2011. In Sakhalin Oblast currently they are undertaking the planning and construction of an interregional gas pipeline within Sakhalin Oblast.

The Yakutia gas production center is comprised of Chayanda and the gas fields of the southern part of Sakha (Yakutia). The Yakutia project is comprehensive, and besides the exploration and preparation for development, the construction has been planned of the "Yakutia-Khabarovsk-Vladivostok" (YKV) trunk pipeline. This practically runs alongside the ESPO [Eastern Siberia-Pacific Ocean] pipeline and connects up to the SKV.

Figure 3: The Yakutia Gas Production Center

Through this, gas from Sakha (Yakutia) will not only head toward the southern part of the Far Eastern Federal District, but exports will also become possible. With the commencement of oil production in 2014 and of gas in 2016, it is planned that the gas pipeline will be completed by that time (Figure 3).

The Chayanda development scheme was approved in 2010. The annual production volume is 25 billion cubic meters, and currently such things as feasibility studies for development investment and exploratory drilling are being carried out. Alongside the start of production, in Vladivostok they will enter into the construction of a gas processing and gas chemical plant.

For the realization of the gas chemical plant, Gazprom is actively engaged in inviting foreign partners to Russia. After carrying out a broad range of cooperation with a large number of Japanese partners, in January 2011 they also signed a Memorandum of Understanding with the Agency for Natural Resources and Energy, which included the direction for cooperation in the gas sector. For this implementation, alongside a coordinating committee being organized to manage the working groups, an agreement was made with Japan Far East Gas Co., Ltd., a Japanese consortium, to undertake joint research into the construction of a Vladivostok LNG plant, shipment facilities for LNG and CNG, and gas and gas product transportation and sale, etc.

Gazprom also undertook reconstruction assistance after the Great East Japan Earthquake. They made an additional LNG supply of 325,000 tons, and if necessary they were ready to investigate the possibility of further additional supplies. In the cases where they would consider large-scale deliveries to Japan in the future, exports from the Vladivostok LNG plant would hold the most promise.

Gazprom has placed great importance on long-term cooperation with Japan, and regular talks have been held. In Sakhalin-II for example, it is considered that as operators they should continue to enrich the resource base within a framework of licenses, while the thinking of participating Japanese firms is somewhat different. For Gazprom, the areas for cooperation with major Japanese firms include LNG, gas chemicals, helium separation and sale, LNG and CNG maritime transportation, engineering for exploration, etc., and extraction, production and transportation of gas hydrates.

[Translated by ERINA]