



PRIGORODNOYE PRODUCTION COMPLEX

The Prigorodnoye production complex is located on the southern shores of Sakhalin Island, on the coast of Aniva Bay. The complex comprises an LNG plant and an Oil Export Terminal (OET).



LNG Plant

The liquefied natural gas (LNG) production plant is designed to receive, treat, process and liquefy natural gas. Natural gas is cooled to -160°C , with a reduction in its volume more than 600 times to become liquid. This enables the LNG to be transported in special tankers to customers' re-gasification terminals. Production capacity of the plant is 9.6 million tons of LNG per year.

The LNG Plant, the first of its kind in Russia, will open new gas export markets and foster their diversification.

Technology

Annual gas import to the plant will total about 13.8 billion m^3 , primarily from the Lunskeye field. Gas treatment, processing and liquefaction will be performed on two parallel processing trains. Each process

train is fitted with: an acid gas (CO_2 and H_2S) removal unit; a gas dehydration unit with molecular sieves; mercury removal using activated carbon; fractionation for refrigerant and stable condensate production and a gas liquefaction unit.

The gas liquefaction process uses a Double Mixed Refrigerant (DMR) which was specially developed for cold climates such as Sakhalin. This state-of-the-art process was adopted to ensure maximum production effectiveness during severe Sakhalin cold seasons.

Liquefied gas is directed to two isometric storage tanks with a capacity 100,000 m^3 each. The LNG is kept in the tanks until being loaded to LNG tankers. The tanks are designed as two-wall structures 37 m high and 67 m in diameter.

LNG Jetty

As the tanker approaches, LNG loading through the special jetty is started. The LNG jetty is 805 m long, fitted with four arms – two loading arms, one dual purpose arm and one vapour return arm.





Water depth at the tail of the jetty is about 13 m. The jetty can accept liquefied natural gas tankers with capacities from 18,000 to 145,000 m³.



According to preliminary estimates, loading operations will take from six to 16 hours, depending on vessel capacity. The jetty will be able to load around 160 LNG tankers per year.

Oil Export Terminal

The Oil Export Terminal (OET) comprises the export pipeline and the Tanker Loading Unit (TLU) for oil loading to tankers. The OET is located east of the LNG plant.

The two oil storage tanks are vertical cylindrical steel tanks with fireproof-sealed floating roofs. The diameter of each tank is 93 m, height is 18 m. Each tank capacity is 95,4 thousand m³.

Oil from the tanks enters the TLU through a 762 mm subsea pipeline. The TLU functions as a single point mooring located 4.5 km from the shore at an approximate depth of 30 m. The TLU can accept oil tankers with capacities of 40,000 to 150,000 m³. According to

preliminary estimates, the TLU will load about 100 oil tankers annually. Loading operations will take from 14 to 24 hours, depending on vessel capacity.

The OET site operations will be managed from the Control Centre at the LNG plant site. The automated control systems ensure stable and safe operation of the facilities.

Prigorodnoye Port

In December 2007, Sakhalin Energy executed an agreement with OAO Sovkomflot, the biggest Russian ship operator, to set-up a joint operating company to manage Prigorodnoye port under the Sakhalin II Project.

Prigorodnoye port is the first Russian sea port constructed for the special purpose of servicing vessels transporting liquefied natural gas (LNG) and oil tankers.

In May 2008, Prigorodnoye sea port was opened to foreign vessels by a Russian Federation Government Decree.

Prigorodnoye port will ensure, to a significant degree, the energy security of the Asia-Pacific Region.

