



Sakhalin Island: the new frontier

By Jon Woodward



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With the ever increasing global demand for hydrocarbon fuels and the present high oil price, even potential reserves in the most hostile of conditions and environments are under investigation.

The 600-mile-long strip of mountains and forests that makes up Sakhalin Island, which lies off Russia's Far East coast, certainly qualifies as one of the most difficult and challenging drilling regions in the world. With an estimated 45 billion barrels of oil, located beneath the icy seas off its shores, this potential makes this isolated region a major target for exploration and development companies.

The Sakhalin Island oil and gas project is about to enter a new phase of production, with an extensive expansion project underway. The expansion will involve an increase in crude oil production by way of new platforms and also the construction of a new Liquefied Natural Gas (LNG) infrastructure for export of natural gas to international markets. The project is being led by the Sakhalin Energy Investment Company (SEIC) and will require a total investment of over \$10bn. The Sakhalin Energy Investment Company is a joint venture between Royal Dutch / Shell Group, Mitsui & Company and Diamond Gas-Mitsubishi Corporation.

Just getting to Sakhalin Island is challenging in itself. The island is located via a nine-hour flight from Moscow and that's only the first part of the journey. To reach the Shell operations involves an additional 15-hour train journey to the site.

The remainder of Sakhalin Energy's operations in the north are so remote that it had to build its own 43-mile road to reach the site.

Impressive new landmarks, drilling platforms, pipelines, and liquefied natural gas facilities are being constructed on the island but developing those resources is proving lengthy, difficult, and expensive.

The nature of the projects and the required infrastructure have resulted in operating and construction costs significantly in excess of budgets resulting in political and financial implications for future joint venture partnerships with the Russian Government. Under the terms of the original production sharing agreement (PSA)

signed back in 1994, Russia will only start accruing major revenues once SEIC have recovered their investment costs.

Since the signing, Russia has undergone massive privatisation changes. With the production delays and the present high price of crude and gas, the Kremlin has become increasingly frustrated with the level of financial returns from their indigenous resource. The government took the decision to centralise all revenues to Moscow, leaving the local Sakhalin population feeling cheated of the promise of a higher standard of living and investment in the local area. Progress on the project has been slowed by the recent withdrawal of key permits by the Russian Government leading to friction between them and the operating companies.

To smooth relations with the Kremlin and gain a strong local partner, Shell last year agreed to trade 25% of its controlling stake in Sakhalin Energy to the powerful state-owned gas giant, Gazprom. In exchange, Shell received a 50% stake in a Gazprom field in western Siberia. Shell teaming up with a strong Russian partner could be key to locking in its role on Sakhalin Island and ensuring long-term gains. Shell is hopeful that being 'first movers' and investing heavily in new LNG plants and terminals that they will be able to offer excess capacity to others, therefore generating high returns on their initial capital investment.

Jon Woodward, international business director of Aberdeen and Grampian Chamber of Commerce, said: "This frontier region poses some very special problems, both in terms of weather and logistics, due to its extremely isolated location. The sheer scale of investment and the size of the projects will inevitably favour the larger companies in the exploration and development phase of the identified reserves with Shell, ExxonMobil and BP playing leading roles."

Operations of the island's biggest player, Royal Dutch Shell PLC, stretch all the way from the island's barren north eastern shore on the Sea of Okhotsk to the regional capital city, Yuzhno-Sakhalinsk, and further south. With their partners, they are building and operating Sakhalin II, a batch of five or six projects each costing a billion dollars or more and employing over 17,000 people.

In 2005, Shell announced that the price tag for the main phase of Sakhalin II would double its original estimate to \$20 billion.

Oil and gas from beneath three platforms off the island's northeast coast will be pumped

onshore by pipeline and sent 500 miles south to the tip of the island. There the oil will be loaded into tankers and the gas super cooled in giant liquefied natural gas plants. It will then be shipped to energy-hungry Japan, South Korea and possibly to China. Some gas will also pass on to the West Coast of the U.S. and Mexico through a terminal in Baja California.

This project will confirm Sakhalin's stature as a major new energy province and transform Russia into a key supplier to Asia. Sakhalin II will also be Russia's passport into the liquefied natural gas market, a key area of the energy industry. Altogether, Sakhalin II boasts 4.5 billion barrels of reserves. Shell expects to be producing 185,000 barrels a day of oil plus condensates from gas and 467 billion cubic feet per year of gas by 2008.

Working conditions are extreme. Heavy snow falls are frequent and in the Sea of Okhotsk ice floes drift much of the year, requiring the Sakhalin Energy Co. to build heavily reinforced platforms designed to withstand ice collisions and even earthquakes as the island sits astride an active seismic fault. Despite these very significant natural considerations, the potential billions of dollars of revenues at stake has motivated the project engineers to address these factors.

Jon Woodward added: "Unfortunately, there are a number of issues that are impacting on the rate of development, the key one of which is the lack of indigenous logistical and engineering capability close to the hub of operations. This results in Sakhalin Energy having to import just about everything, including oil platforms built in South Korea and towed across the Sea of Japan. Additionally, it is an area of marine environment sensitivity as it is a breeding ground for the endangered grey whale and wild salmon."

Jon concluded: "Despite all these factors and the inclement weather for much of the year, Sakhalin remains one of the major expanding oil and gas regions of the world and is set to provide exciting opportunities for UK companies offering leading edge technologies." ■

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