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Safety, Cost Meet Head On in Arctic Oil Race

By Irina Filatova

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While operators insist the Prirazlomnaya gas platform is safe, environmentalists have doubts, citing a meager clean-up budget and other concerns.

SEVERODVINSK, Arkhangelsk Region — Half a century ago, this town on the White Sea coast was a supply mecca for residents of the nearby metropolis Arkhangelsk, who regularly made the 35-kilometer trip just to buy sausage, which was usually available in the well-stocked stores of strategically important defense industry centers.

Defense orders still form the backbone of the city's economy, with two-thirds of its population employed at two shipbuilding plants that struggled through the collapse of the Soviet Union.

But thanks to global warming, thawing of the Arctic ice and the world's appetite for oil, Sevmash, Russia's only producer of nuclear submarines for the Navy, and Zvyozdochka, which does submarine maintenance, might get a new lease on life soon. The government is

discussing a plan to create a technology hub in the northern city to explore the Arctic's offshore hydrocarbon deposits, which are believed to have huge oil and gas reserves.

The hub project fits with the high-level attention Arctic energy exploration gets from the Russian government, and there is at least superficial attention to its environmental impact.

Speaking at a forum on Arctic exploration in September, then-Prime Minister Vladimir Putin vowed that all the plans for the region "will be enforced in line with the most rigorous ecological standards."

"Intense business activity in the Arctic will be beneficial only if we ensure a reasonable and proper balance between the economy's interests and preserving the nature," he said.

What's not clear is whether the fragile frozen environment will survive the onslaught of efforts to get at those resources.

Rocky Road

The Economic Development and Regional Development ministries are holding meetings on creating the Severodvinsk hub, which will include extensive infrastructure development, Arkhangelsk Governor Igor Orlov told a group of reporters last month.

The two defense factories will play a key role in the hub — having just completed production of Russia's first oil-drilling platforms for Arctic offshore projects, with more expected to be made soon.

"It's a very serious strategic project. We need to build complicated offshore facilities, and we need to attract scientific and human resources for that, as well as create normal living conditions," Orlov said.

The detailed plan for the hub might be drafted in the summer, Orlov said, but it remains unclear how it will deal with environmental protection issues, as environmentalists have repeatedly urged the government to demonstrate a more responsible approach to offshore drilling projects.

Russia's journey to explore offshore fields in the Arctic — the government's priority for the next decade — had a rough start.

In December, the Kolskaya offshore oil-drilling platform sank in the frozen waters of the Sea of Okhotsk, killing 53 of the 67 crew members and prompting international environmental organizations to call for the suspension of new offshore projects in the Arctic.

But the government's efforts to entice foreign companies to explore Arctic deposits finally bore fruit last month, when international oil major ExxonMobil — encouraged by Putin's promises to ease taxation for offshore projects — agreed to establish a joint venture with state-controlled Rosneft.

The deal was a landmark in developing Russia's offshore territories in the Arctic because it was the first in a series of similar agreements with Italy's Eni and Norway's Statoil, which followed in subsequent weeks.

"Nobody will be able to explore the Arctic alone. ... Billions of dollars are needed ... to start exploring Russia's Arctic territories," Yury Lukin, head of the institute of management and regional studies at the Northern Arctic Federal University in Arkhangelsk told reporters visiting the university in April.

The estimated hydrocarbon reserves in the Arctic are about 100 billion tons in oil equivalent, according to findings by Russian experts, said Marcel Gubaidullin, director of the university's oil and gas institute.

Climate changes have increased accessibility and boosted international interest in offshore projects in recent years, with countries that have direct access to the Arctic Ocean — like Norway, Canada, Denmark and the United States — competing with Russia for the Arctic's offshore reserves.

"The ice thawing creates favorable conditions for business," Lukin said.

Risky Venture

Russia's first step in tapping the vast Arctic resources is exploration of the Prirazlomnoye oil field in the Barents Sea with estimated reserves of 72 million tons.

The work — to be started by Gazprom this year — will be conducted from the Prirazlomnaya platform, Russia's first oil-drilling platform designed for offshore projects in the Arctic.

The platform — ordered by Gazprom and built at Sevmash in Severodvinsk — was delivered to its destination and set up over an oil field 60 kilometers off the coast in August.

But the Kolskaya platform tragedy galvanized environmental organizations, including Bellona, Greenpeace and the World Wildlife Fund.

The government should review its offshore exploration policy and pass legislation that would guarantee proper liquidation of the consequences of possible accidents during offshore exploration, the organizations said in a December statement.

All offshore projects in the Arctic and similar maritime territories should be suspended until such measures are taken, the statement said.

While exploration of offshore fields in the Arctic involves significant environmental and financial risks, domestic oil and gas companies have yet to prove their ability to carry out such projects, as they neglect safety issues even in onshore projects, according to a report by Greenpeace published last month.

"If Russia's oil and gas companies can't get existing fields under control, there's no reason to hope that they'll demonstrate a more responsible attitude to environmental protection issues while exploring the Arctic offshore areas," the report said.

The Cost of Safety

Russia suffers more pipeline leaks than any other country in the world, resulting in at least 5 million tons of oil and oil products leaking into the environment annually, according

to estimates by Greenpeace.

The organization warned that this amount might grow with the start of offshore oil exploration in the Arctic.

Turning to financial issues, Greenpeace said in the report that the Arctic's offshore projects are likely to be unprofitable because they are too costly if carried out according to sufficient safety standards.

The costs of implementing offshore projects in the Arctic are much higher than those on land, as Russia will need billions of rubles in additional budget spending to expand its icebreaker fleet and develop navigation and rescue infrastructure, Greenpeace said.

The estimated average cost of oil exploration in Russia reached $22 a barrel in 2010, Greenpeace said in the report, citing Energy Ministry figures. But the real costs at many new oil fields exceeded that figure significantly, the report said.

The cost of extraction at Gazprom's Prirazlomnaya platform might reach $30 a barrel, which includes the platform's construction, drilling and exploitation expenditures, Greenpeace said. That figure does not include efforts to meet the necessary safety standards, which would make the costs even higher, the report noted.

"But even the growing costs resulting from introducing higher safety standards don't guarantee the lowering of environmental risks, which will remain in any case," the report said.

Talking the Talk

Gazprom lacks sufficient resources to clean up an oil spill at Prirazlomnaya, having set aside "a meager sum" of 7 million rubles ($233,000) to insure the oil-drilling platform from environmental risks, Greenpeace said, citing the company's statement at a meeting with nongovernmental organizations in December.

That policy value was set at the time of the platform's construction and covers possible damage to the environment that might result from accidents on the facility, said Gazprom Neft Shelf, Gazprom's subsidiary in charge of offshore extraction.

"The insurance sum will be increased after the platform is completed and put into commission," the company said in e-mailed comments, adding that it might also "attract foreign partners to help cover the insurance risks."

Gazprom Neft Shelf said it had foreseen three possible scenarios of oil leaks at the field — from an oil tanker, from the platform itself and from an oil well.

But "the unique design features of the Prirazlomnaya almost rule out oil leaks from the platform," the company said, adding that it has enough capacity and equipment to localize oil spills at the field within four hours after the accident — as required by current regulations.

It also said it had created a plan to prevent and liquidate possible oil spills at the field and had bought special equipment to deal with leaks.

"The working technology of the Prirazlomnaya platform rules out the disposal of industrial waste, garbage, oils ... and other hazardous substances into the sea," Gazprom Neft Shelf said, adding that drilling and oil production waste would be shipped ashore in special containers for disposal.

Rosneft said it had established a research-and-development center to develop technologies for safe extraction in the Arctic, but added that it's too early to discuss the financial assessment of environmental risks in its offshore projects because it will be a long time before production starts.

All the projects will undergo public discussions and an environmental assessment by the authorities in line with current legislation, the company said, adding that partnership with the world's oil and gas majors guarantees access to high technologies and a responsible approach.

"The Arctic's fragile environment and sensitive ecology present unique challenges," said ExxonMobil, which will explore Russia's offshore deposits in the Kara Sea and the Black Sea with Rosneft in a $3.2 billion joint venture.

"The company's efforts are guided by an in-depth scientific understanding of the environment in which we operate and the potential impact of our operations on the environment and society," it said in e-mailed comments.

"All design and operational plans are based on the goal of eliminating all unacceptable environmental and social impacts, with today's experience used as a basis for improving future performance," said ExxonMobil, which has an 80-year experience of offshore extraction in the Arctic.

A spokesman for Statoil, which will cooperate with Rosneft to develop oil fields in the Barents Sea and the Sea of Okhotsk, said "safe operations are our first priority and an integrated part of our work."

Under the agreement with Rosneft, the companies will first carry out seismic surveys, with a total of six exploration wells to be drilled between 2016 and 2021, he said in e-mailed comments.

"When it comes to oil-spill response, that will be a part of the planning of the exploration wells in the same way as for our other Arctic wells, like in Canada and Alaska," he said, adding that drilling will be carried out during the ice-free period.

Both companies declined to disclose how much money had been set aside for environmental safety in their projects with Rosneft, saying it's impossible to separate this portion from the overall investment volume.

Eni, which will work with Rosneft to develop three license blocks in the Barents Sea and the Black Sea, said it's too early to provide an exact estimation of the environmental risks of the projects, adding, however, that "environmental studies of ecological risks are at the core" of its activities.

Technologies Needed

Strategic alliances are crucial for developing offshore territories in the Arctic, said Gubaidullin of the Northern Arctic Federal University. Apart from sharing the cost burden, foreign partners that boast extensive experience in implementing such projects can ensure technology transfer, he said.

ExxonMobil said it has a number of state-of-the-art technologies to conduct environmentally friendly extraction in the Arctic.

It cited one example called Extended Reach Drilling technology, which is aimed at reducing high capital and operating costs at large offshore deposits and minimizing "the environmental impact in the sensitive near-shore area."

ExxonMobil also said it had developed a new dispersant gel, which reduces the damage of possible oil spills in an Arctic environment.

But Gubaidullin said concerns remain. Most worrying, he said, is that no technologies exist to deal with oil that seeps into pores in the sea ice.

Developing such technologies would require huge investment, he said in an April interview at his office, adding that companies should give priority to safety.

He called for a rational use of the Arctic reserves, saying oil companies working at offshore fields should "rely on common sense" and introduce safety standards, rather than hoping for a miracle.

Meanwhile, Vladimir Nikitin, chief executive of Zvyozdochka, the Severodvinsk plant for submarine maintenance, called for drilling rigs to be used properly in order to avoid accidents.

Last year, his company completed construction of the floating oil-drilling platform Arkticheskaya for Gazprom.

The platform designed for drilling at offshore Arctic fields cost about 7.7 billion rubles ($256 million) to build, Nikitin said.

"We are ready to build [offshore] platforms. ... We're extremely interested in new orders and hope that they will come," he said in an interview at the plant last month.

Nikitin added that the plant will get 30 billion rubles of state funding for modernization over the next eight years, which will allow it to build such complicated facilities in the future.

The construction of such platforms should take into account the area's extreme climate conditions, as these facilities must be able to resist pressure of underwater ice masses bumping into them, as well as the 10-meter-high waves resulting from strong winds, Gubaidullin said.

Additional problems result from high humidity and low temperatures, which might cause surfaces and equipment to ice over.

Is It Worth It?

Although international oil majors have already made more than $300 billion in stated commitments to investing in Arctic oil exploration and extraction, the huge investment might be unjustified.

Oil and gas reserves in the Arctic might be overestimated significantly, Greenpeace warned in its April report.

"According to the most optimistic forecasts, oil extraction in the Arctic offshore territories in Russia might peak at 13.5 million tons a year over the next 20 years," the report said, citing a draft of the state program to develop the Arctic shelf.

"For comparison, Russia currently produces about 500 million tons of oil a year," the report said.

However, Gubaidullin said the Arctic's maritime territories could provide the energy resources for Russia to rely on in the future, as existing reserves in Siberia are likely to suffice only for the next 40 to 50 years, according to some estimates.

Although the prospects of energy-efficiency projects are widely discussed, "there's no real alternative to oil and gas for the next 20 years," Gubaidullin said.

"If we don't come to the Arctic, others will do it. We should start working as soon as possible to develop technologies and get the needed experience step by step," he said.

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