

Arctic natural gas is heading to market.

By Mr. Larry Persily

January 25, 2012

It's already coming from Norway, with Russia, the United States and Canada looking to join the game.

Arctic gas is in play because the world is using more natural gas than ever, with demand expected to continue growing as countries increasingly demand the cleaner-burning fuel.

Pipelines are not an option for most island nations, such as Japan, or for crossing the world's oceans. A growing volume of gas moves around the globe super-cooled into a liquid, loaded aboard tankers and delivered to terminals where it is warmed back into a gas to burn for electrical generation and heat.

The world in 2000 consumed an average 233 billion cubic feet of natural gas a day. By 2010, consumption was up to 307 billion cubic feet. At today's prices, that's almost \$1 trillion a year for fuel. Though most of it moved by pipeline, if all of it were to move by liquefied natural gas tanker it would fill almost 20,000 shiploads.

BP predicts LNG shipments will climb faster than pipeline deliveries over the next 20 years. With the market shares of coal and oil declining, and natural gas rising, BP expects the share of global energy consumption for the three fuels will converge by 2030. That's a big change from the 1970s, when coal and oil combined had almost four times the market share of gas.

ExxonMobil says worldwide natural gas demand will grow 50 percent by 2030, reaching 450 billion cubic feet per day. The volume burned for electrical generation will double by 2030, ExxonMobil says, as gas becomes the fuel of choice for most of the world's power plants.

Qatar is the world's largest LNG supplier, with Australia projected to overtake the Mideast nation by 2017. Companies are developing \$180 billion of LNG projects in Australia, rushing to meet growing demand, especially from Asia.

Other LNG exporters include Indonesia, Malaysia, Trinidad and Tobago, Algeria, Egypt, Equatorial Guinea, Nigeria, Oman, Yemen, the United Arab Emirates, Brunei and Norway, where the Snøhvit LNG plant went online in 2007. Snøhvit, offshore from Hammerfest in Norway's Arctic waters, sent gas to Japan last year for the first time since 2008 as the Asian nation looks worldwide for new supplies to meet its energy needs after its March 2011 nuclear disaster.

East of Snøhvit in Russia's Arctic is the proposed Shtokman LNG project, with an international list of partners: Norway's Statoil, France's Total and Russia's Gazprom. The Shtokman field has four times as much gas as the Alaska North Slope's proven reserves. But the gas is 340 miles offshore in the Barents Sea. The project is estimated at \$15 billion to \$20 billion, with first gas no earlier than 2016-2017, depending on market conditions and the partners' investment decisions.

Gazprom had hoped to send Shtokman LNG to the United States, but the U.S. shale gas boom has oversupplied the market, forcing Gazprom to look elsewhere.

Japan is getting a look, said Gazprom CEO Alexei Miller: “The Japanese market is the biggest LNG market in the world, and considering the decision by the Japanese government to reduce nuclear power generation the demand for LNG into Japan will only increase.”

Farther east in the Russian Arctic, bordering the Kara Sea, is the Yamal Peninsula, with even more gas than Shtokman. Gazprom, Russia’s No. 1 gas producer, has talked with No. 2 producer Novatek about joint projects at Yamal, where Novatek already has a deal with Total. The Total-Novatek project could launch production as soon as 2016, though that date is far from certain. The cost is estimated in excess of \$26 billion.

Novatek recently reported it plans to order 10 LNG tankers for its Yamal project. The tankers would be designed to operate in winter’s harsh ice conditions.

The Gazprom-led Shtokman project may require its own 20-tanker, \$4 billion fleet.

Canada, with the proposed Mackenzie Delta project, and the United States, with Alaska’s gas reserves, also want to bring Arctic gas to market. But the Alaska and Mackenzie projects face the familiar Arctic hurdles of distance to market and high costs, plus low North American prices for pipeline gas and tough competition in global LNG markets.

The demand for more gas will be there, but Arctic gas will have to be price competitive to win customers.