

## Falling Japanese Prices

# Oregon natural gas facility could be fuelled by Canadian sources

By Robert McCullough



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(August 27, 2019, 11:02 AM EDT) -- Both documentary evidence and economic theory indicate that natural gas exported from the proposed liquified natural gas (LNG) terminal at Coos Bay, Ore., will be sourced from British Columbia and Alberta.

Jordan Cove has been an active project since 2006. For its first five years, the project, then owned by Fort Chicago and Energy Projects Development, was an LNG import facility. As LNG prices rose, Jordan Cove refiled with the Federal Energy Regulatory Commission (FERC) as an LNG export facility. Ownership of the project has evolved over time as Fort Chicago changed into Veresen. In 2017, Veresen was acquired by Pembina.

Jordan Cove is planned for Coos Bay. In order to procure natural gas, a pipeline is planned to connect to supplies at Malin, Ore. Malin connects to Kingsgate, Alta., and Opal, Wyo. Overall, Coos Bay is over 909 miles from sources of supply in the east and 841 miles from Alberta.

Pembina's financial presentations indicate that Canada is the primary source of supply since Pembina does not own gathering, processing or field extraction assets elsewhere. In a presentation this month to investors, Pembina directly aligns its Jordan Cove investments with its Canadian infrastructure. It is worth noting that the Ruby pipeline, connecting Colorado with the Malin natural gas trading hub, is not mentioned.

## Background

On Sept. 4, 2007, Jordan Cove LNG was proposed as an import terminal — primarily oriented to meeting domestic U.S. needs from imported natural gas. The Coos Bay location and proposed interconnection to existing natural gas pipelines at Malin was as appropriate then as it is inappropriate today. As a general rule, positioning an import terminal near potential loads is a good idea.

Positioning an export terminal far from natural gas supplies is a significant disadvantage.

Historically, California natural gas prices are significantly higher than those in Alberta and the Pacific Northwest.

When Pacific natural gas prices were lower than those in the United States, importing LNG at Coos Bay and selling the natural gas into the lucrative California market made economic sense.

This situation did not endure for long. Over the last decade two factors changed the market dramatically: On March 11, 2011, a tidal wave destroyed the nuclear plant at Fukushima Daiichi. Japanese authorities subsequently closed Japan's nuclear fleet and prices spiked dramatically.

Technological innovations in the U.S. and Canada revolutionized oil and natural gas production

leading to an increasing surplus in North American markets.

Landed prices in Asia (JKM) rapidly diverged from those in Alberta (AECO) and the United States (Henry Hub).

The prospect of competing with Asian markets for scarce Pacific Rim LNG spelled the end of Jordan Cove's prospects as an LNG importer.

The massive differential between JKM and AECO prices spawned over 20 LNG export terminal proposals — primarily in British Columbia. Two proposals were based in Oregon — one in Astoria and one in Coos Bay.

Japan has gradually restarted its nuclear fleet and other suppliers have stepped in to supply the Pacific Rim. Not surprisingly, JKM prices are falling dramatically with prices today less than half their levels one year ago. At least five of the proposed LNG projects in British Columbia have cancelled their plans to build LNG export terminals in the province.

At today's JKM price, none of the west coast LNG export terminals is an attractive investment. Therefore, the economics of Jordan Cove are highly problematic given its high costs and the declining Asian prices.

On July 2, 2019, the JKM index was US\$4.625/MMBtu (one million British thermal units; all figures in U.S. dollars). The break-even price for Jordan Cove is \$4.27/MMBtu. The natural gas price at the Malin hub is \$1.99/MMBtu.

When the cost of transportation to Japan is added in, the cost of Jordan Cove LNG is \$7.13/MMBtu.

If today's prices would prevail into the future, Jordan Cove would lose \$2.50 for every MMBtu shipped.

This is part one of a two-part series.

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