

Commercializing Alaska LNG

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SESSION 1:

LNG Supply Outlook & Actions by Producers

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ALASKA'S MASSIVE HYDROCARBON BASINS

North Slope

U.S. Geological Survey (USGS) estimates that Alaska's North Slope and Arctic Outer Continental Shelf have more oil than any other Arctic nation in addition to world-class reserves of natural gas:

- **OIL:** Estimated 40 billion barrels of conventional oil.
- **GAS:** Estimated over 200 trillion cubic feet (TCF) of conventional natural gas.

Alaska has world-class unconventional resources, including tens of billions of barrels of heavy oil, shale oil, and viscous oil, and hundreds of trillions of cubic feet of shale gas, tight gas, and gas hydrates.

DNR is holding its annual North Slope areawide lease sale on November 19, 2014.

Cook Inlet

A maturing basin, but there are still large volumes of gas and oil to be discovered in small- to intermediate- size fields. USGS estimates undiscovered volumes of:

- 19 TCF of natural gas, 600 million barrels of oil, and 46 million barrels of natural gas liquids.

DNR Sets Aside 11 Lease Tracts for Methane Hydrates

DNR and DOE held a methane hydrates technical briefing in late 2013 to assist with the identification of one or more areas that would be suitable for a potential long-term field production test of methane hydrates, pursuant to the Memorandum of Understanding signed in early 2013.

DOE conducted a funding solicitation to develop a project for one of these acreages at the end of 2013 and into the beginning of 2014. While no project was ultimately selected due to the technical restrictions, JOGMEC submitted a proposal as an expression of interest.

Most recently, the State confirmed that it would continue to withhold the acreages set aside under the MOU for one more season so that parties could continue to develop a project under the MOU.



Photo Courtesy of DOE

ALASKA LNG PROJECT DEVELOPMENT CONCEPT



- Point Thomson (PTU)/Prudhoe Bay (PBU) Gas Source (35 TCF)
- North Slope gas treatment plant (GTP) near Prudhoe Bay Central Gas Facility
- Re-inject CO₂/H₂S in PBU – pressure support
- 800 mile 42”, 2057 psig gas pipeline
- 8 compressor stations (30kHP compression plus cooling)
- LNG plant site at East Cook Inlet (adjacent to existing LNG plant at Nikiski)
- 3 LNG trains capable of a total of 20 million tonnes per annum (MTA)
- 3 storage tanks (165,000 m³)
- Single jetty with 2 berths for LNG vessels, tug, support vessel dock, and material offloading facility

COMMERCIALIZING ALASKA'S NORTH SLOPE GAS

Alaska LNG Project Strengths

- **Financially strong and experienced partners:**
 - ✓ ExxonMobil, ConocoPhillips, BP and TransCanada are some of the world's largest energy developers;
 - ✓ Collectively the Partners have already invested billions of dollars on studies and oil and gas infrastructure in Alaska;
- **High resource confidence;**
- **Ambient temperature increases relative thermal efficiency;**
- **Geo-strategic portfolio diversification—Alaska has a 40-year history of reliably exporting LNG to Japan;**
- **Close proximity to North Asian markets—avoids strategic shipping choke points;**
- **Low political risk—stable American investment and political climate;**
- **Limited environmental impact; and**
- **Native land claims are already resolved.**

Alaska LNG Project Challenges

- **Managing uncertainty / cost while securing required permits;**
- **Identifying and mitigating risks in design process (technical / execution);**
- **Delivering “cost of supply” that is globally competitive; and**
- **Securing strong buyer support.**

COMMERCIALIZING ALASKA'S NORTH SLOPE GAS - *PROGRESS*

2013 Accomplishments

- **State of Alaska achieves significant tax reform:**

Oil tax reform incentivizes more production and has fueled new discoveries and investment.

- **Producers select concept on an Alaska pipeline to tidewater:**

Concept selection includes major project components, including the gas pipeline, gas treatment facilities and the liquefaction, storage and terminal facilities.

- **State undertakes a study to understand how it can enhance its royalty position:**

Concludes that under certain circumstances, state participation would yield significant benefits.

2014 Accomplishments

- **The Alaska Legislature authorizes State participation in the Alaska LNG Project in April.**
- **The Alaska LNG Project enters Pre-FEED in June.**

The major oil and gas producers in Alaska have aligned with the State of Alaska and all parties are evaluating the feasibility of this project and have commenced the pre-Front End Engineering & Design (pre-FEED).

- **The Alaska LNG Project submits an application to the U.S. Department of Energy for permission to export LNG for 30 years in July.**
- **The Alaska LNG Project pre-files with the Federal Energy Regulatory Commission in September.**

Initiates the commission's review of the project under the National Environmental Policy Act.

CONCLUSION

- Alaska is a world-class hydrocarbon system, located in one of the most business friendly states in the world;
- Alaska LNG is an attractive project for investors and for LNG buyers in North Asia;
- ExxonMobil, BP, ConocoPhillips, TransCanada and the State of Alaska have aligned, and Alaska LNG is making significant progress;
- Alaska LNG would provide the foundation infrastructure to facilitate future upstream developments on the North Slope, as well as access to markets, both domestic and foreign.

Alaska Journal of Commerce: DOE to streamline export review of Alaska LNG

"We want to be very explicit to say that we will treat Alaska differently...This is a private sector project and we want to do all we can to facilitate it." ~ U.S. Energy Secretary Ernest Moniz

"DOE has exempted the Alaska project from a new U.S. Department of Energy rule that LNG export projects complete their environmental reviews before a federal LNG export license is issued."

- Journal of Commerce, 8/19/14

