

Alaska natural gas pipeline: Past, present and future

It's been 43 years since oil and natural gas were discovered on Alaska's North Slope and, after several failed attempts to get a gas pipeline built, the latest efforts by four companies could at last succeed — if market conditions and state fiscal terms move in the right directions. The Federal Energy Regulatory Commission is in the preliminary stages of an environmental impact statement and multiple federal regulatory agencies are working with the project sponsors on all aspects of data needs and reviews for the estimated \$40 billion undertaking.

Project history

In 1976, Congress passed the Alaska Natural Gas Transportation Act to expedite development of an Alaska natural gas pipeline to serve the Lower 48 states.

In May 1977, the Federal Power Commission, acting under the 1976 law, recommended a pipeline route along the Alaska Highway through Canada. In September 1977, President Jimmy Carter selected the highway route and Congress approved the President's decision.

U.S. natural gas market conditions changed, however, putting the costly Alaska project into a dormant state for almost 20 years.

Meanwhile, non-Alaska sections of the gas pipeline system were built to move new discoveries from Western Canada to U.S. consumers. The western leg went into service from Alberta to California in 1981. The eastern leg went into service in 1982 to serve the Midwest.

The market changed considerably when natural gas prices hit then-record highs in the winter of 2000-2001, sending producers, utilities and pipeline companies looking for new supplies. The major North Slope producers spent \$125 million in 2001 to judge the economic and engineering feasibility of moving Alaska gas to market. Prices, however, eased back, and the companies decided the time still wasn't right to build the pipeline. Proponents did not give up.

In late 2004, Congress passed the Alaska Natural Gas Pipeline Act, creating the Office of Federal Coordinator to help expedite federal permitting work for the pipeline. The act designated the Federal Energy Regulatory Commission (FERC) as the lead for the National Environmental Policy Act review and preparation of the environmental impact statement for the project. The law also provides a federal loan guarantee and tax incentives for the project.

In 2006, the Office of Federal Coordinator participated with 16 federal agencies on a memorandum of understanding establishing a project management framework for cooperation among participating agencies. Other agencies signed on in 2010, bringing the total to 19.

In 2007, the Alaska Legislature enacted the Alaska Gasline Inducement Act, offering up to \$500 million in state funding to reimburse initial project design and development costs in exchange for several promises: Proceeding to a FERC application even if the project lacks shipper contracts; supporting a tariff structure and pipeline expansion plans that could aid future North Slope explorers; and committing to a project labor agreement with Alaska labor unions.

In 2008, the state selected TransCanada as its preferred developer; the Legislature approved the selection. The license does not grant TransCanada exclusive rights to develop the project, nor does it grant exclusive rights of way or guarantee a pipeline. It merely designates TransCanada as eligible for state reimbursement of a significant share of its initial costs, so long as it continues to follow the state's timetable toward project development.

Also in 2008, ConocoPhillips and BP, working outside the state reimbursement process, set up a joint venture (Denali) to design and seek FERC approval for an Alaska line to serve North America. Denali submitted its pre-file application to FERC in 2008, starting the review process.

Then, in 2009, ExxonMobil signed on as a partner with TransCanada's effort (The Alaska Pipeline Project), and that same year TransCanada submitted its pre-file application to FERC.

The competing projects are similar in size, cost, routing and timetable, with first gas projected to enter the North America gas pipeline grid in northern Alberta — if all goes well — in 2020, at a cost between \$32 billion and \$41 billion. Certainly, only one pipeline will be built.

In 2010, the two project teams held separate open seasons to solicit capacity bids from potential shippers on the pipeline. Though the bidding closed several months ago, commercial negotiations continue and results have not been announced. Shipping commitments are essential; the contracts would essentially act as collateral for the billions in financing required for the project and would be equally essential to obtaining federal loan guarantees offered by the 2004 act.

The project

Both developers propose to take North Slope gas to Alberta, where it would feed into the North America pipeline grid to the West Coast, Pacific Northwest, Midwest, East Coast or anywhere in between. The Alaska Pipeline Project (TransCanada/ExxonMobil) is also offering the option of a pipeline to Valdez, where the gas would be liquefied for export.

Most activity is focused on the pipeline route toward the Lower 48. The line would consist of 730 miles in Alaska and 1,000 miles in Canada, with construction estimated at four years, requiring more than 2.5 million tons of steel and tens of thousands of workers and support staff.

The pipe would add 4.5 billion cubic feet of natural gas per day to North America supplies, almost 7 percent of current U.S. demand. Alaska's North Slope holds 34 trillion cubic feet of proven gas reserves, with much more expected if a gas line existed to prompt exploration.

A large piece of the construction budget would be the estimated \$12 billion price tag for what is likely the world's largest gas treatment plant to remove carbon dioxide and other impurities from the gas stream. The CO² will be reinjected underground to sequester it from entering the atmosphere and to assist with pressurizing the reservoir for enhanced oil production. The treatment plant will weigh in at 270,000 tons of pre-built modules delivered to Prudhoe Bay and assembled into working order by a crew of 3,000.

What will it take to build the line?

No forecast for gas demand and prices is right; there are too many variables to guarantee the future. Changing any number of assumptions in a supply-and-demand forecast can significantly alter the outlook for the Alaska pipeline. The variables include: the growth of shale gas production, possible regulation of hydraulic fracturing in shale gas production and increased water handling costs, continued conversion from coal to natural gas at the nation's electrical generating plants, the future of nuclear power, and the nation's economic recovery.

If the North Slope producers — the companies that would underwrite the line and pay the taxes and royalties — see market demand and adequate prices in the years ahead, the project could move forward. One other essential element is the state of Alaska's fiscal regime for natural gas. The producers worry about future tax increases on a financially risky project and want to negotiate stable fiscal terms before committing to an investment. Those negotiations have yet to begin.

One of the most important benefits for the nation is the increased oil exploration and production that a gas line would stimulate. Companies would undertake large-scale exploration and development to keep the gas pipe full, and when they look for gas they also find oil.