



Tech Talk - Pipelines from the Arctic

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Art Berman commented, in regard to [my last post](#) on the oil and gas reserves in offshore Alaska, that at one time companies looked for an estimated 1 billion barrels in reserves before they would consider starting down the long road to bringing them to market. With the rising price of oil, that number may have declined a little but for natural gas, a similar need for a long-term assured market is currently potentially raising barriers to progress. As I mentioned in that post, there is a considerable sum involved, not just in acquiring the leases for the sites but in all the preparatory work needed before the first drill even hits the surface. Even after the wells have come in, the hydrocarbons must still be moved down to the customer and as the Trans-Alaska Pipeline System (TAPS) showed, it takes time, money, and a considerable commitment before that connection can be made.

One of the recent changes that I noted [a couple of posts ago](#) is that more of the reserve in the North Slope is now known to be natural gas rather than oil. With the current relative natural gas glut in the contiguous United States, that reduces the immediate market and the potential current price that the gas could bring in. This, in turn, slows lease development. But times change and with an increase in natural gas demand there will be a growing demand with time. One can also see an increased future need for natural gas in Alberta, where it helps in the production of the heavy oils from the shallow sands around Fort McMurray. And that brings us to the current controversy over the building of another pipeline, this time for natural gas, down from the Arctic.



Possible TransCanada gas pipeline routes from the North Slope, showing connecting pipeline

More particularly, I thought I would tie in the problems that the [MacKenzie Valley Pipeline](#) has had in Canada with the debate about the Alaskan pipeline. This is not so much to argue either side, but rather to show some of the delays that have arisen and to underscore one of the points that these last few posts have been hopefully suggesting - that when somebody says that all we have to do is go out there and drill to solve our energy problems, they really don't understand the complexities of the real world. The MacKenzie River flows into the Beaufort Sea just to the east of Alaska, in the Canadian Northwest Territories.



Proposed path for the [MacKenzie River Pipeline](#)

The recent application for approval of the MacKenzie River pipeline was [originally filed in August 2004](#), but by then the project was already old. [Back in 1977](#), Mr. Justice Berger, a Canadian judge who had examined the project over a three-year period, recommended that it be put in abeyance for 10 years, following [his Inquiry](#). A major concern of the time was the expressed opposition of many of the native tribes (First Nations) through whose land the pipeline would run.

Move forward some 34 years, and some of those tribal leaders are now [in favor of the project](#). While in that time frame, the Canadian Government had [pledged billions](#) to the First Nations of Canada, with recent emphasis being on [schools, water, and community services](#), a more likely reason is because of the work of settling land claims, (all the land belongs to the First Nations) and, for example, that the Inuvialuit now [own the company](#) that runs the barges up and down the river. At the same time, through the Aboriginal Pipeline Group, the First Nations will now also own a [third of the pipeline](#) itself.

At the time that the National Energy Board [approved the project](#), it included the development of three natural gas fields (Niglintgak, Taglu, and Parsons Lake), about 120 miles of gathering pipelines and an almost 300-mile natural gas liquids pipeline as well as the 743-mile pipeline itself, which will carry 1.2 Bcf/day of gas down to Alberta.

With construction now scheduled to begin in 2014 (and to occur mainly during the winter months), it is expected that the pipeline will be in operation by the end of 2018 at a cost of \$16 billion. It will take some \$800 million to develop the Niglintgak field with 6 - 12 wells started from

3 pads. It will take some \$2.5 billion to develop the Taglu field, with 15 producing wells extended from a single pad, but requiring a compressor and more wells as the field ages. And the cost of the Parsons Lake field is anticipated to be around \$2.5 billion with two drilling pads that will hold from 3 to 19 wells.

Now move West a tad, and Alaska also has those significant gas resources that I have mentioned in previous posts. They are, however, not quite as far along in the process of getting a pipeline in place to move it to where it becomes a real reserve. I will forego exploring the idea (mentioned in comments on earlier posts) of converting the [natural gas to methanol](#) and sending it down TAPS to Valdez, where it would be separated from the oil, and converted into gasoline. (Because methanol is corrosive to pipes, the plan is moving toward doing the conversion to gasoline near Deadhorse, and mixing the gasoline with the crude.) The initial target for the project would produce 63 kbd of gasoline, with an original estimate of the cost being around \$7.7 billion.

Moving the natural gas itself through a new pipeline, however, requires customers, and while a number of different proposals have been put forward, the lack of such customers at this time recently caused Denali to [discontinue their efforts](#) to build a 48-inch diameter pipe that would carry up to 4.5 Bcf/day [from the North Slope to Alberta](#).



Path of the proposed Denali Natural gas line from the North Slope. ([Denali](#))

TransCanada, who remains in the hunt, is also finding it [hard to find](#) any firm customers. Given that they estimate that the cost of a similar-sized pipeline would run between \$20 and \$41 billion, depending on whether the line feeds an LNG plant in Valdez or runs over into Alberta, they are hesitant to move forward even though they will receive \$500 million for planning the project and getting the regulatory approvals. (The top map shows both alternatives).



The TransCanada/ExxonMobil option to Valdez. ([Alaska Pipeline Project](#))

Nevertheless, TransCanada and Exxon, who are now partnering in the [Alaska Pipeline Project](#) have held [meetings with the project communities](#) likely to be affected by the project, offering refreshments and door prizes for the present and potential feeder lines in the future. Their presentation can be [found here](#), and notes that under the current schedule first gas will flow in 2021.

By that time it is quite likely that there will be more of a demand for natural gas supplies in the anticipated market, but convincing investors and potential customers of that is likely to be an uphill task in the more immediate term and the project will likely not be able to make headway until those folk show up. And so, while it may not take the almost 40 years of the MacKenzie River pipeline (which isn't started yet), the current Alaskan effort is likely to take longer than currently hoped.



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