

Alaska gas line update

(Just where are those liquids?)



Canadian Energy Research Institute

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Open season

- TransCanada/Exxon open season closed July 2010
- Multiple bids; highly conditional; confidential
 - *Possible conditions: Construction delays, overruns, service interruptions, back-out deadline, shipper default*
- Complex commercial negotiations are under way
- Construction estimate \$32 billion to \$41 billion
- Alaskans are getting impatient and cranky waiting
- No FERC deadline to end open season negotiations

Project timeline



Project teams are working

- TC/Exxon employees and contractors meet regularly with federal regulatory agencies
- Field work continues this summer in Alaska/Canada; draft environmental resource reports December
- FERC has a 14-member team assigned to project
- Federal pipeline safety office, land managers, EPA and other agencies fully engaged in project
- Project sponsors are cautious about overspending until they see signed deals from open seasons

Ongoing meetings

- FERC meeting this week with agencies to discuss resource reports and environmental reviews
- TC/Exxon/federal workshops this spring covered:
 - *Construction overview, water crossings and rights of way*
 - *50 railway and road crossings in Alaska*
 - *70 major rivers and lakes to cross (or to go under) along the 1,700-mile route to northern Alberta*
 - *And an additional 2,400 small rivers and streams*

Pipeline construction

- TC/Exxon engineers and technical personnel meeting frequently with federal regulators
- Issues: Design approach, strain capacity, fracture control, routing pinch points, material selection, steel and rolling mills, pipe coating, welding, testing, quality and integrity management
- Proximity to trans-Alaska oil pipeline and roads
- World's largest high-pressure line at 2,500 psi

Gas treatment plant

- Remove carbon dioxide, water, other impurities
- Prudhoe Bay gas composition 12% carbon dioxide
- CO₂ will be reinjected for enhanced oil recovery
- Plant will compress and chill the gas for pipeline
- Construction estimate: As much as \$12 billion
- Three sealifts of modules, totaling 270,000 tons
- GTP will burn 200 to 300 million cubic feet a day

Federal EIS timeline

- Federal law designates FERC as lead agency for the project's environmental impact statement
- Alaska Natural Gas Pipeline Act deadlines:
 - *Draft EIS within 12 months of complete application*
 - *Final EIS six months after draft EIS*
 - *Final order published within two months after final EIS*
- State requires application to FERC October 2012, regardless whether project has shipper contracts

Next steps

- FERC requires 11 environmental resource reports before it will accept an application as complete:
 - General project description
 - Water use and quality
 - Fish, wildlife and vegetation
 - Cultural resources
 - Socioeconomics
 - Geological resources
 - Soils
 - Land use, recreation and aesthetics
 - Air and noise quality
 - Alternatives
 - Reliability and safety

Attention items

Office of Federal Coordinator is tracking issues:

- Air quality
- Bald and Golden Eagle Protection Act
- Climate change
- Contaminated sites
- Cultural resources
- Geological studies
- Human health studies
- Land access issues and Native allotments
- Pipeline and Hazardous Materials Safety Administration permits
- Subsistence
- Threatened and endangered species
- West Dock dredging

Alaskans grow impatient

- ❑ TransCanada/Exxon had anticipated reaching precedent agreements before Dec. 31, 2010
- ❑ Missed date has prompted critics to cry 'failure'
- ❑ ConocoPhillips/BP decision not to proceed with their own project (Denali) adds to skepticism
- ❑ Several legislators want to set deadline to end state reimbursement of development costs
- ❑ Alaskans losing hope in project and want to turn to state-subsidized, in-state line for local needs

AGIA's role in this story

- State did not want producers to own the gas line
- AGIA selected TransCanada as best path forward
- State will cover up to \$500 million of TC/Exxon's development costs to apply for FERC certificate
- In return, TransCanada promised:
 - *To seek FERC certificate even if it has no shippers*
 - *Rolled-in instead of incremental tariffs; original shippers could subsidize expansion costs for any future shippers*
 - *Anchor shippers would get weak 10-year tax certainty*

How wet is the gas?

- Recovery estimates of ethane, propane, butane, pentane and condensates range widely from 160,000 to as much as 285,000 barrels a day
- That assumes 75% recovery of ethane and near total recovery of other liquids from 4.5 bcf/day
- But where to take out the liquids?
- Where is the highest value, lowest cost?
- And how to answer Alaska's local needs?

NGL recovery options

- Alaska wants jobs, new value-added industry and, most importantly, Btus for local energy needs
- But Alberta has spare capacity and probably lower costs to process/ship products to buyers
- Market likely will decide based on economics
- But propane will be a player in Alaska politics
- Propane provides best option for moving energy to rural communities to lessen reliance on diesel

State looking at NGL options

- In-state gas line office has contracted with RW Beck
- Study economic feasibility of NGL extraction, fractionization, storage, export facility in Alaska
 - *Assume 35,000 barrels from 1 bcf/d line*
 - *Report to identify most likely markets for liquids*
 - *Will produce an economic model of value chain*
 - *Look at the economics of 1 bcf/d in-state line that is dependent on high value for natural gas liquids*

Past state studies

- Muse Stancil 2004 report on economics of starting a petrochemical industry in Alaska:
 - *Higher capital and operating expenses than competitors*
 - *Variability in composition of gas supply over time*
 - *Lack of a profitable local market for byproducts*
- Muse Stancil 2009 testimony before Legislature:
 - *Economics less attractive than Alberta or Gulf Coast*
 - *Higher capital and operating costs in Alaska*
 - *Too much to use locally; would have to process liquids twice*

Will the gas line be built?

- ❑ How much will economy recover and demand build?
- ❑ How much will EPA limit greenhouse gas emissions?
- ❑ How much will utilities switch from coal to gas?
- ❑ How much will the federal government, states and municipalities constrain shale production?
- ❑ Will shale production costs rise (water handling)?
- ❑ Can Alaska gas compete on price with shale?
- ❑ What will be the price for gas 2020, 2030, 2040?

Shale gas competition

- ❑ Fracking becoming about as popular as an oil spill
- ❑ More questions as it moves closer to urban areas
- ❑ Produced water disposal is the biggest issue
- ❑ EPA is reviewing federal fracking regulations
- ❑ Opponents pushing cities and states to take the lead with regulations, restrictions, fracking disclosure, water disposal rules, zoning limits, moratoriums
- ❑ New York state is suing federal government

Shale could help Alaska

- Shale could help by eliminating price spikes and getting utilities to think gas for the long term
- Worldwatch Institute report: “Price volatility remains the Achilles’ heel of natural gas.”
- No utility can afford repeat of \$14 price spikes
- Utility president: “Building a 1,000-megawatt, gas-fired plant doesn't make sense if you can't be sure what your fuel costs will be.”
- Stable gas supply encourages more consumption

Utilities are thinking gas

- Clean Air Act is pushing utilities toward gas; EPA has issued new regulations, more to come
- Interstate Natural Gas Association of America: Replacing half of oldest, least-efficient coal plants would boost demand 5.5 bcf per day
- Half of U.S. coal-fired plants over 40 years old
- No new coal-fired power plants started 2009-2010
- Credit Suisse: Just 25% of coal-fired capacity fully scrubbed; \$40 billion to scrub half of the rest

What it will take for Alaska

- Greenhouse gas restrictions, new air quality rules must continue driving utilities from coal to gas
- Gas prices rebound as demand builds
- Community resistance makes life harder on shale; water quality issues drive up shale drilling costs
- Producers see market opportunity after 2020
- Alaska gas must be competitively priced to win market share; not a penny more than others

Thank you

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