

What will it take to get a gas pipeline?



Export Council of Alaska

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The right ingredients

- Continued build in market demand from utilities
- Growing uncertainty over EPA regulation of greenhouse gases (coal-fired power plants)
- Increasing gas demand leads to higher prices
- Regulatory & environmental problems for shale gas; not stopping it, but slowing down the boom
- North Slope producers confident it will all come true
- State willingness to negotiate fiscal terms; reasonable expectations among Alaskans

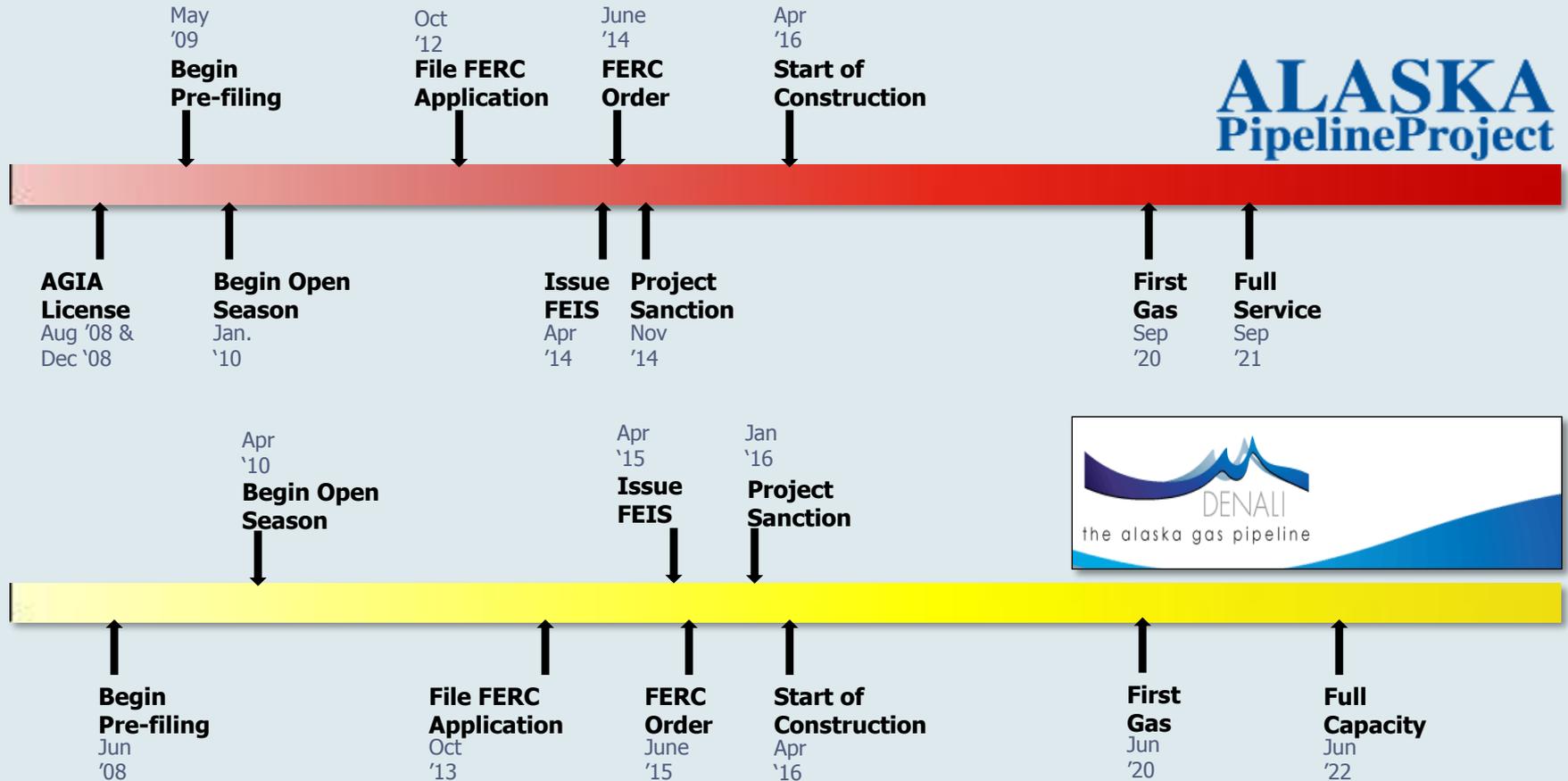
There is progress

- Alaska Pipeline Project (TransCanada/ExxonMobil) and Denali (ConocoPhillips/BP) have spent more than \$500 million since 2000
- Open seasons closed; multiple bids (with conditions)
- Conditions on pipeline bids not unusual
 - ▣ ***Just like an earnest money offer on a house***
- More news could come late 2010, early 2011
 - ▣ ***No disclosures until signed agreements***

Precedent agreements

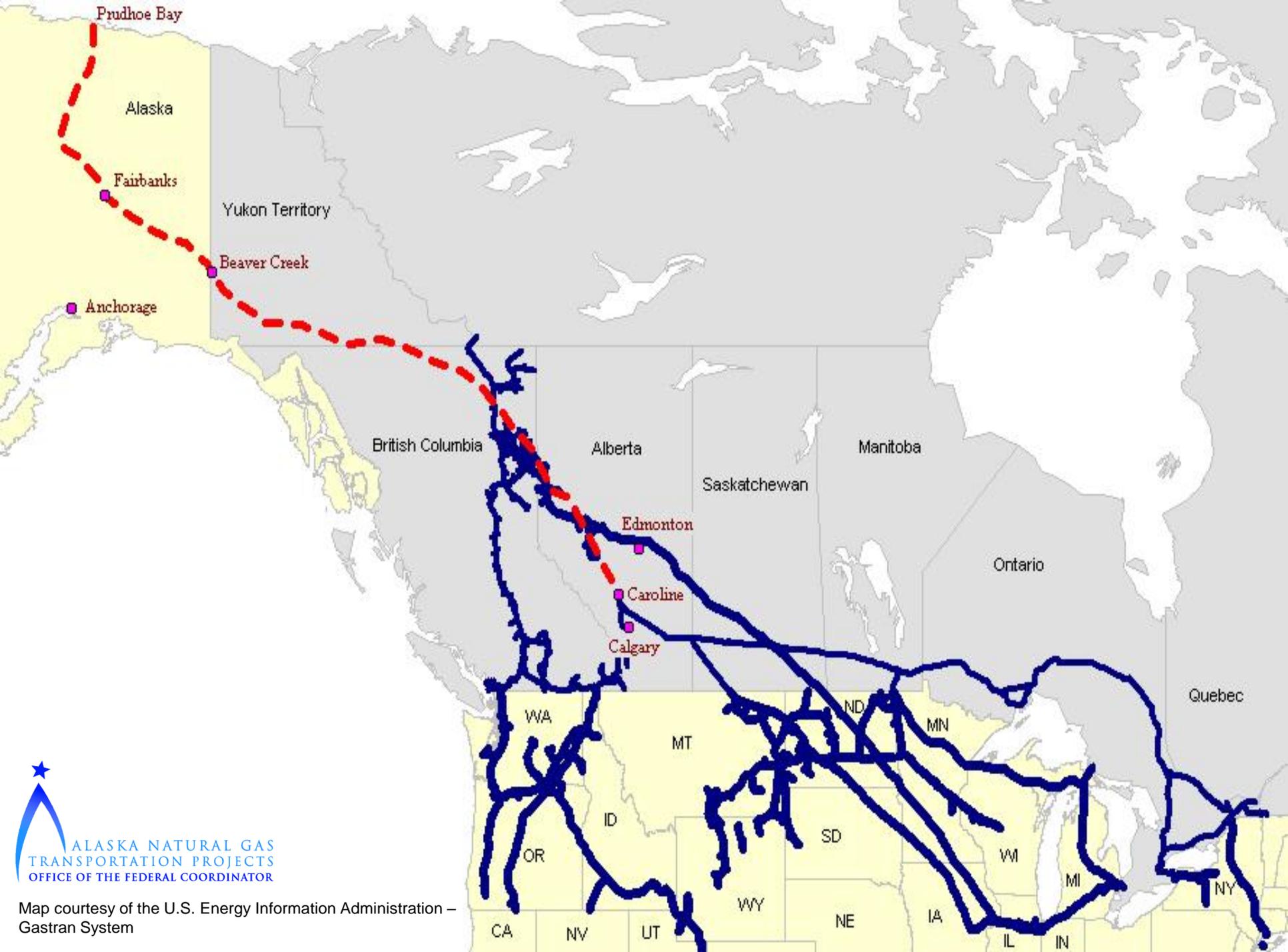
- Next step in FERC process after open season
- Can take weeks in a small projects; several months for larger projects — and this is the largest ever
- Not the final binding shipping commitment, but close
- Public disclosure of shipper, volume and tariff
- Signed precedent agreements trigger spending
- Shippers start to assume some of the risk
 - ▣ *Shippers can be billed for share of costs if project dies*

Proposed project schedules



Find the best market

- Pipeline from Alaska to North America would feed into the largest natural gas market in the world
- North America consumes 75 to 80 bcf per day
- Pipeline grid can move Alaska gas from California to New York, and every other state in between
- North America market is three times the size of China, India, Japan, South Korea and Taiwan natural gas markets combined
- In-state delivery must be part of deal for Alaskans



 ALASKA NATURAL GAS
TRANSPORTATION PROJECTS
OFFICE OF THE FEDERAL COORDINATOR

Map courtesy of the U.S. Energy Information Administration – Gastran System

LNG market is tough

- Australia, Indonesia, Russia, Malaysia, Brunei, Papua New Guinea, Qatar, Oman, Yemen, United Arab Emirates, Egypt, Algeria, Nigeria, Trinidad, Peru and Norway
- All operating or building LNG export projects
- New projects add 50% to Asia supply 2009-2015
- Qatar is on target to reach its 2010 goal of 11 bcf per day, with some of the lowest costs

Australia wants to be No. 1

- \$50 billion in LNG projects under construction
- \$50 billion more in projects will be ready for investment decisions by next year
- Shell, Chevron, ExxonMobil, ConocoPhillips, Hess, Total, Apache, Woodside and others are spending serious money in Australia
- Shell alone looking at \$50 billion this decade
- Nothing in Australia needs 800-mile Arctic pipeline

Floating LNG

- ❑ Shell looking to bring first floating ‘platform’ online 2016 for offshore (120 miles) Australia field
- ❑ Australian government just approved Shell project
- ❑ \$5 billion investment; 500 million cubic feet per day
- ❑ Samsung holds contract to build up to 10 ships
- ❑ 1,600 feet long, 250 feet wide, one-stop shop
- ❑ Other producers also looking at floating LNG for Indonesia, Papua New Guinea and Brazil

Competition back home

- Unconventional gas about 20% of U.S. supply
- Growing rapidly across the U.S. and Canada
- Horizontal drilling efficiency improves each year
- CERA: “Nobody drills a dry hole in a shale play. If they did, they’re not very good.”
- But the truth is, much of shale goes toward replacing declining production from conventional gas wells
- And shale wells experience a steep decline curve

Shale has its problems

- ❑ Fracking becoming about as popular as an oil spill
- ❑ EPA review underway; states consider their own laws
- ❑ More questions as it moves closer to urban areas
- ❑ Hydraulic fracturing for shale gas requires
3 million to 5 million gallons of water per well
- ❑ EPA lead: “Where is that water coming from?”
- ❑ Produced water disposal is the biggest issue
- ❑ Utilities group: “Environmental costs always go up.”

Shale actually could be good

- Shale could help by eliminating price spikes and getting utilities to think gas for the long term
- Worldwatch Institute: “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.”
- Shale makes utilities feel more comfortable with gas

Utilities are thinking gas

- Growth in electrical power plant demand is essential
- American Public Power Association: Clean Air Act is pushing utilities to decide which plants survive
- The future is natural gas, not coal, for new plants
- TVA, Calpine, Xcel Energy, Constellation, Duke and others are planning new gas-fired plants
- Progress Energy Carolinas: Decided on two new gas-fired plants at \$1.5 billion instead of overhauling four old coal plants at \$2 billion

Coal may not be king forever

- Half of the nation's coal-fired electrical generating plants are more than 40 years old
- Coal-fired generating capacity essentially unchanged between 1997 and 2008
- Gas-fired generating capacity added 221,000 MWs between 1997 and 2008
- 850 bcf storage added 1997-2008; now at 4 tcf
- Power generation share of gas consumption went from 17% in 1996 to 30% in 2009

New regulations and EPA

- Anything that helps drive the nation to clean-burning natural gas would be good for Alaska project
- New EPA regulations could boost gas demand
- Utilities see possible new federal regulations, but don't know what or when — they're nervous
- They are factoring that uncertainty into their long-term power plant investment decisions now
- Politics could help, or hurt, natural gas demand

Demand growth is key

- Electrical demand grew from 14 billion cubic feet per day in 2000 to 19 bcf per day in 2009
- CERA: Electrical utility demand for gas could almost double 2009 - 2030; an additional 16 bcf/day
- Interstate Natural Gas Association of America: Replacing half of oldest, least-efficient coal plants would require 5.5 bcf of gas per day
- It's not taking from coal, but going after new plants and replacement of older, costlier coal plants

And don't forget vehicles

- Congress unlikely to pass comprehensive energy legislation (carbon limits), but may approve incentives for natural gas-powered vehicles
- Just 110,000 gas-powered vehicles in the U.S.
- Pakistan leads the world with 2.3 million vehicles
- Argentina, 1.8 million; Iran, 1.7 million
- Public transit, delivery truck fleets with central fueling stations good candidates to switch fuel

It's not easy, but it's possible

- Wood Mackenzie: **“Whether the project proceeds ... depends on if the producers and the state can reach agreement on the applicable tax terms and, ultimately, what the producers believe to be the long-term value of natural gas in the North American marketplace.”**
- At some point everyone needs to sit down and talk
- Alaska needs the gas line to help replace declining oil revenues and spur North Slope development

Federal assistance

- Accelerated depreciation for pipeline
- Tax credits for gas treatment plant (world's largest)
- Federal loan guarantee would reduce cost of borrowing, therefore the cost of pipeline tariff
- Expedited permit review; 18-month EIS deadline
- But only for a gas line to serve Lower 48
- No federal aid for an exclusively in-state line or an exclusively LNG export project

Getting the most for Alaska

- Growing interest in a state-subsidized, small line from Prudhoe Bay to Fairbanks to Southcentral
- Hypothetical: For a multibillion-dollar state subsidy in a small in-state gas line, Alaska could get:
 - ***Gas to Fairbanks, and also gas to Southcentral (but with a heavy subsidy to match today's prices)***
 - ***Few hundred million dollars a year in taxes & royalties***
 - ***Too small of a gas volume to justify new North Slope development that could stem decline in oil production***

There is a better option

- Take those billions, negotiate and look at what could be done to help a large line to North America
- Merge the mainline and in-state pipeline projects
- The state could get for its money:
 - ***The lowest cost gas for in-state consumers***
 - ***\$2 billion a year or more in taxes and royalties***
 - ***Moving so much gas would start an immediate push for new exploration to keep the line full for decades***

Thank you

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