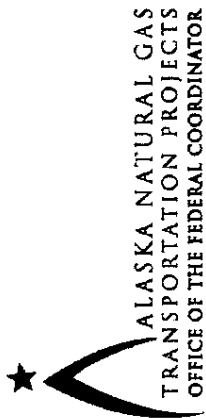


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No shortage of possibilities or problems for Alaska gas

**Larry Persily, Federal Coordinator
Alaska Natural Gas Transportation Projects**

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Everyone has an opinion

- ▶ Former Sen. Ted Stevens
- ▶ Former Govs. Frank Murkowski and Bill Sheffield
- ▶ Soon-to-be-former University President Mark Hamilton
 - ▶ Says gas will never exceed \$6/mcf in 2010 dollars in his lifetime
- ▶ All of the gubernatorial candidates
- ▶ Me too
- ▶ The only thing for certain: **We're probably all wrong**

White House opinion

- ▶ Interested, engaged, involved
- ▶ Elevate focus on the project (but no office move)
- ▶ Alaska gas line is part of a national energy plan
- ▶ Gas = lower emissions, jobs, domestic energy supply
- ▶ White House willing to work with state, project sponsors
- ▶ No specific proposals — that's on my work list

Public frustration

- ▶ So many expectations since 1968
- ▶ So many political promises
- ▶ So close — or sort of close — so many times
- ▶ Pipe vs. LNG, then pipe, then LNG, then pipe, then LNG, then pipe, now either or, or maybe both
- ▶ Meanwhile, Southcentral saw loss of industry and felt the reality of market prices for gas — and they're worried

Don't give up, not yet

- ▶ Pipeline to North America would tap into the largest and natural gas market in the world
 - ▶ North America = 75 to 80 bcf/d
 - ▶ Almost three times China, India, Japan, South Korea, Taiwan
- ▶ Billions of dollars in public revenues for the state
- ▶ Gas for in-state use; possibly propane too
- ▶ Help encourage exploration and extend life of TAPS
- ▶ Open seasons (two) will tell us a lot

Problems with Lower 48 pipeline

- ▶ Construction risk; high tariff; market risk
- ▶ Have to deliver all 4 bcf/d at once; new supply could weaken the market, pulling down prices short term
- ▶ No stopping the flow, even in a down market
- ▶ Producers need long-term sales but utilities are nervous because public utility commissions second guess them
- ▶ There are less risky projects for investors
- ▶ It's all about minimizing, controlling and sharing risk

What would help Lower 48 line

- ▶ Economic recovery and demand build
 - ▶ U.S. gas consumption fell last year, especially industrial users
- ▶ Fuel switching from coal to gas-fired generation
 - ▶ Growth in electrical power is the key
 - ▶ CERA: Power demand 19 bcf/d 2009 to 35 bcf/d in 2030
 - ▶ Little growth expected in industrial, residential demand
- ▶ Promoting natural gas as transportation fuel
- ▶ Federal restrictions on CO2 emissions

The dreaded shale

- ▶ Yes, shale gas production 10% of U.S. supply last year
- ▶ Growing across U.S. and Canada, especially Alberta, B.C.
- ▶ Close to markets; easy to raise and lower production
- ▶ Drilling rig efficiency is up, and up and up
- ▶ States are hungry for revenues and jobs
- ▶ Shale gas will hold down price spikes; no more \$14 gas
- ▶ Like Flubber, it's a perfect product — but is it?

The darker shades of shale

- ▶ Fracking becoming about as popular as an oil spill
- ▶ Water quality concerns
- ▶ EPA review; possible federal legislation
- ▶ More questions as it grows bigger, closer to urban areas
- ▶ One big environmental disaster could change the game
- ▶ Shale needs tens of billions of dollars of new pipelines
- ▶ Steep production decline curve; deeper wells cost more

LNG is an option

- ▶ But we're not alone looking west to East Asia
- ▶ Papua New Guinea, Australia (including coal-seam, Indonesia, Sakhalin, Malaysia and Brunei
- ▶ West African nations, Qatar, Oman, Yemen
- ▶ All either operating or building LNG plants
- ▶ Almost 10% Japan's 2008 spot supply came from Atlantic
- ▶ Floating LNG; Shell's multibillion-dollar order with Samsung will access smaller fields in Pacific Basin

LNG competition is strong

- ▶ New projects totaling 9 bcf/d online in 2009-2010
- ▶ An additional 7 bcf/d scheduled by 2015
- ▶ Once online they don't cut back; need to recover costs
- ▶ Mitsubishi forecasts potential Asia Pacific LNG supply could exceed demand by almost 20% in 2015
- ▶ Uncertain after that, but no shortage of Pacific options at tide water; no need for 800 miles of Arctic pipe

Other supply options for Asia

- ▶ We're not the only country with shale gas
- ▶ Shell signed a 30-year deal to help China unlock tight gas
- ▶ China and India are looking for more domestic gas
- ▶ China has pipeline gas options: Russia, Turkmenistan
- ▶ India looking for pipeline gas, too
- ▶ Tokyo Gas just signed a 20-year deal with BG Group
for Australian gas to supply 11% of its needs

LNG pricing in Asia

- ▶ The market is shifting away from near 100% reliance on long-term sales contracts tied to oil prices
- ▶ Spot market and short-term sales now comprise almost 20% of the volume in the Asia Pacific market
- ▶ Buyers like bargain spot prices in a down market:
China paid \$4.30 for Russian LNG in June 2009 and \$3.48 for an Indonesia delivery that same month

Market size is important

- ▶ Global gas trade in 2007
- ▶ 73% of worldwide gas production was consumed within the producing country
- ▶ 19% of gas production was delivered to foreign customers by cross-border pipeline
- ▶ 8% of gas was delivered by LNG tanker
- ▶ The bigger the market, the more new gas it can absorb

Don't forget the valuable liquids

- ▶ North Slope gas has a high-value liquids stream
- ▶ Don't just think about the methane price
- ▶ Liquids can piggyback on methane for transportation
- ▶ Example: Qatar can sell methane at low price while banking profit from liquids for its petrochemical industry
- ▶ Alberta hungry for liquids to feed existing plants
- ▶ Alaska can keep propane for local use

It's not easy, but it's possible

- ▶ Open seasons for TransCanada/Exxon and Denali an opportunity to gauge market demand for Alaska gas
- ▶ Shippers asked to commit \$100 billion in binding, contractual commitments lasting 20 years or more
- ▶ At some point state, producers, pipeline owner and even the federal government will need to sit down and talk
- ▶ Pipeline to North America is possible if right things happen and if all parties are **willing to contribute**

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