



ALASKAN NATURAL GAS TO LIQUIDS COMPANY

February 9, 2012

Representative Paul Seaton
State of Alaska
State Capitol Room 102
Juneau AK, 99801

Re: AGDC providing a sub-optimal solution, what can the Legislature do?

Dear Representative Seaton:

- Was AGIA a half billion dollar mistake?
- Could ASAP be another \$400 million mistake?
- Why did AGIA undertake clearly gas producer obligations?
- Will AOGCC allow for the sale of Prudhoe Bay gas? How much?
- Why is the Legislature tethering AGDC's hands?

During the recent Chenault - Hawker HB 9 press conference the comment was made that the current multimillion dollar AGDC in-state gas pipeline analysis would result in a **sub-optimal finding**. No further comment was made on the issue but clearly it referred to the fact that HB 369 placed limitations on Fauske's group. It assumes that the AGIA gas line is built while AGDC is evaluating a gas line route from the North Slope that could only occur if an AGIA gas line was not built. What should the Legislature do to rectify this oversight? The Legislature needs to amend HB 369 to look at two base options:

1. One where an AGIA gas line is built and
2. One where there is no AGIA gas line.

What should the ultimate goal be, in our opinion "*the lowest cost sustainable gas delivery system for the people of Alaska*"!

The people who brought you AGIA say the State cannot support any in-state gas line or any other gas line project that exceeds 500 million cubic feet per day of capacity. Ok, but how is evaluating and determining the best options for the State (its people) based upon today's facts supporting another pipeline? The State needs to find out what is the best option for its people assuming that AGIA does happen and more importantly what is the best option if AGIA doesn't happen. It is clear that a large diameter gas line from Prudhoe Bay to AECO, Canada supplying natural gas to the lower 48 cannot happen



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within the time frame of the AGIA program. The CEO of ConocoPhillips recently said this gas line option is DEAD, won't happen, isn't economic. AGIA lite, now favored by the Governor a gas line to Valdez with an LNG export facility doesn't need 4.5 Bcf/d of gas so why is the in-state gas line still limited to 1/2 Bcf/d?

AOGCC's position has not changed over the years; Prudhoe Bay natural gas is needed on the North Slope to recover the maximum amount of crude oil. Taking 3 or 4 Bcf/d of natural gas from the Prudhoe Bay Unit may result in loss of recoverable crude oil. Why would any rational person commit to spend a half of billion dollars of State funds when it had no assurance that all of the gas needed to support this project would be available?

Just recently an ANGDA member asked the Commissioner of AOGCC was there even enough gas to support an in-state gas line? The Commissioner's response was there appears to be many Tcf's of yet to be discovered natural gas on the North Slope not associated with the current crude oil fields that could support a gas line. Build it (the in-state gas line) and the natural gas developers will come. Sort of puts a whole new prospective on spending \$500 million to support AGIA.

If there is no AGIA gas line can the in-state gas line be economic? Is it possible to combine the need for in-state gas supplies with a GTL export program located in Southcentral utilizing the federal support already approved and still make it economic? We think yes but it won't be easy – consider these five points:

- Federal Loan Guarantee can apply to an in-state gas line GTL option;
- In-State gas line 1+ Bcf/d, single phase \$1.5/mmbtu tariff;
- Producer provided gas cleanup under \$1/mmbtu
- Anchorage jet fuel market 35,000 bbl/d (300 mmcf/d)
- AOGCC can possibly support today up to 1 Bcf/d of sale by 2018

I will show later why these points can make a difference but first a little gas history and supposition.

For fifteen years now ANGTL has pioneered a GTL option for the North Slope. The North Slope is the clear winner for locating a GTL plant period. The North Slope GTL program took into consideration AOGCC's concerns and designed the program in phases never taking more than ½ Bcf per day until the impact on crude oil recovery was known. Possibly the only negative of a NS GTL program is that it does not get natural gas to Fairbanks, to interior mineral locations and down the railbelt. One can only assume this last reason was the driving force behind the Administration and Legislatures support of a gas line project to the lower 48. This State support did



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however cause the U.S. Congress to provide economic incentives assuming the North Slope natural gas was delivered to the Lower 48. While it is clear that the Congress had no intention of supporting a natural gas export program to Asia, that might not be the same with respect to delivering North Slope natural gas to U.S. markets albeit in a different form – say liquid transport fuels.

At times Exxon has also indicated that GTLs may be the preferred route but has never chosen to bring its support or its AGC 21 technology to the table nor for that matter really support a major gas market development program with its own money.

Exxon knows that the North Slope natural gas must be treated to remove excess CO₂ and sulfur before it can be marketed so it took millions of AGIA money to study its options as a Prudhoe Bay gas producer/owner. One need not wonder why Exxon is claimed to be the best run oil company in the world. Yet the State of Alaska claimed that Exxon was supporting a gas pipeline to the Lower 48. Can anyone show me that in writing? We contend that Exxon opted to appear to support the AGIA program to head off the States litigation on Point Thompson. How is that going for Exxon?

ConocoPhillips and BP opted to spend their own money to study a gas line and LNG option mostly out of fear the State of Alaska would try some sort of litigation on the lack of progress towards bringing North Slope natural gas to market. Yet, according to AOGCC, BP as Prudhoe Bay operator has yet to ask AOGCC to approve the sale of 3 Bcf/d or 4.5 Bcf/d of natural gas. You would think AGIA and the gas owners would want to know upfront how much natural gas AOGCC would approve for sale and removal from the North Slope.

The bottom line in our opinion, none of the North Slope oil majors are going to invest tens of billions until they have an absolute iron clad agreement with the State on how their oil, natural gas and incremental capital investments will be treated for tax purposes. When you consider the rules have recently changed with respect to depreciated assets like TAPS, you can see the concern of any Alaska energy investor.

2012 – Now What?

Here we are early 2012; the gas market in North America won't support a gas line from Alaska. Every major gas supplier in the world is evaluating an LNG program focused on Asia. British Columbia has sanctioned two LNG export projects at Kitimat and is finalizing a third for Shell and China. Governor Parnell has found the LNG religion and is claiming the three oil majors are supporting his efforts. Really, this must have come during the closed door meeting. Finally the Alaska Legislature is poised to fund an



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additional \$200 million for AGDC to continue developing (should it be for studying) a **sub optimal** in-state gas line option (Rep Hawkers comment I believe not ours).

AGDC is being forced to develop an in-state gas pipeline option limited to 500 million per day of capacity because the AGIA line to Canada needed 4.5 Bcf/d. However, the AGIA LNG option now favored by the Governor is for only 3.5 Bcf/d. Why is the in-state gas line still limited to 500 million? For that matter why would the in-state gas line be limited to 500 million if the proposed ANGTL market was an export market and not consumed in-state? Worse yet the AGDC evaluation is from the North Slope to Anchorage, a gas line that would only be built if AGIA fails to launch. *So why evaluate a project that assumes AGIA has failed but limit the evaluation to conditions that assume AGIA was successful?* AGDC claims that the Legislature has restricted them to this point even though the AGIA forced limitation is only for supporting a project – it doesn't say anything about evaluating a project to determine options and costs.

It even gets stranger when you consider that the in-state gas line owner, AGDC is undertaking the clear obligation and responsibilities of the gas producers, Exxon, BP and ConocoPhillips to clean up its North Slope natural gas for sale to a pipeline; plus take on the added responsibility of handling North Slope LPGs. Can anyone point to a location in the world where this is not the responsibility of the gas owner unless he owns the gas pipeline? I did not think so.

Before AGDC gets too far down the road with the EIS filing, engineering evaluations it is time for the Legislature to amend its charge to AGDC. We, the people of Alaska deserve the best option, the lowest delivered cost, for an in-state gas pipeline. As a minimum we should know – *“what is the best option if an AGIA gas line is built” and “what is the best option if an AGIA gas line is not built”*. We should also be told “what is the incremental cost of dealing with the North Slope LPGs”. Alaskans deserve better than “well the delivered gas price from Prudhoe Bay to Southcentral is no more than imported LNG”. Really, is that you want to tell your constituents?

Combining an in-state gas line and a GTL export program.

Now back to our original statement; “Is it possible to combine the need for in-state gas supplies with a GTL export program located in Southcentral utilizing the federal support already approved and still make it economic?” Yes but it won't be easy.

If you look at the AGDC report made to the Legislature last July they indicated GTLs were the least economic program. We agree that with \$9 to \$10 delivered natural gas to Southcentral and a 50% equity investment there is no way a GTL program would be



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financeable. But then there is no way an LNG export program can work unless LNG's long term delivered price remains above \$16/mmbtu plus ConocoPhillips and Marathon give up their preferential right to supply the Kenai LNG plant with their own natural gas. We see several faults with the AGDC gas line analysis but let's focus on just four points.

1. The fact that the AGIA gas line proposal to AECO, Canada was terminal was a well-known fact by June 2011. I believe the Legislature clearly saw this development in 2010, when it sanctioned AGDC. Without the \$20+ billion federal loan guarantee the economics of the gas line changed dramatically. The second option, a gas line feeding an LNG project for export at Valdez could not survive a 40% to 50% equity requirement and a gas line to Southcentral with a major LNG plant in the Cook Inlet is outside of the original AGIA program. Remember equity return is 15% to 20%, debt is 5% to 6%.

The 2004, Alaska Gas Line Act is very specific, Alaska North Slope natural gas must flow to the Lower 48 by pipeline and reduce U.S. imports of natural gas. GTLs may be able to get around this issue. A GTL plant located in Southcentral converting Alaska North Slope natural gas (a hydrocarbon) into transportation fuels (also hydrocarbons) and delivering these very clean fuels to only U.S. markets including the U.S. Military, may qualify. Yes, you will need to amend the federal legislation but it will never be amended to support the export of Alaska natural gas as LNG to Asia. If amended, then the gas line leading from the North Slope to Southcentral along with supporting GTL program could qualify for the 80% debt – 20% equity support contained in the Act. A 20% equity position dramatically changes the economics. Also the federal loan guarantee would support an Alaska Tax Free Bond issue and allow for 20 year financing. We still need to get the throughput up to get the tariff down. Many will say the North Slope Oil Majors are not interested in the federal loan guarantee or 20 year financing. They can easily pay off the gas pipeline in 10 years but what is the tariff. Can or will the market support a \$6 tariff when it could be \$3 or lower if financed over 20 years.

2. The in-state gas line was limited to 500 mmcf/d by AGIA. We have discussed this issue above but the bottom line is that since there will be no gas line to AECO, Canada this volume limitation should not be there. Without a gas line to Canada there really is no ready market for the liquids at Valdez and certainly not at Anchorage or Fairbanks. Should AGDC be forced to look at a very high cost dense phase gas line? Has AOGCC determined that the liquids would be better utilized recovering incremental oil for the North Slope?



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Second, it can be argued that since the proposed GTL program is an export program there never should have been a limitation imposed because it's not for "in-state" consumption. This is one of those issues that could be resolved in Court or by allowing TransCanada to build and own a portion of the gas line from the North Slope to Fairbanks in exchange for allowing this initial phase to exceed 1/2 Bcf/d. Is having a piece of something better than having nothing. Of course since they are being reimbursed for 90% of the costs does TransCanada have any incentive to change?

Enstar who did the original in-state gas line cost estimates showed that with a throughput exceeding 1 Bcf/d the tariff would be close to \$1.50 / mmbtu.

3. AGIA made the offer to remove the CO₂ and sulfur, clearly a producer responsibility plus take all the North Slope LPGs. While the capital cost of cleaning the natural gas could be rolled into the cost of the in-state gas pipeline, its operation and responsibility should be solely that of the gas producer. The gas producer owns and operates the existing gas separation plant which will not be part of the in-state gas pipeline project. Shouldn't we do the same for the gas conditioning plant?

The cost of the gas pipeline operating at normal pressures with no liquids separation plants straddling the pipeline at Fairbanks, Anchorage and other delivery points will be far less than currently projected dense phase gas pipeline project according to one of the lead engineering companies working on the AGDC program. Let the North Slope gas producer develop a LPG (propane and butane) market and deliver these products to that market or utilize these LPG fuels on the North Slope for heavy oil recovery.

4. Market demand is critical to any major energy project. Today all gas developers across the world are focused on supplying LNG to Asia, primarily Japan and Korea. Natural gas has been selling for \$3/mmbtu in North America, \$8/mmbtu for LNG delivered to Germany and upwards of \$16/mmbtu for LNG delivered to Japan. We can see the reason for some of the Asian premium price due to the Japanese nuclear plant shut down; however, at no time in history has the value of natural gas across the world had such a wide divergence in price. Low cost gas sellers are chasing these high value markets while these high value markets are seeking lower cost supplies. The two can't help converging somewhat in the near future. Crude oil continues to sell at record multiples to natural gas in North America approaching 30 to 1 while at 9 to 1 in Asia.

Despite claims of low refinery margins, finished transport fuel products continue to command premiums. While many are singing the praise of LNG approaching \$16/mmbtu in Japan, diesel and jet fuel are selling for \$25/mmbtu on the U.S. West

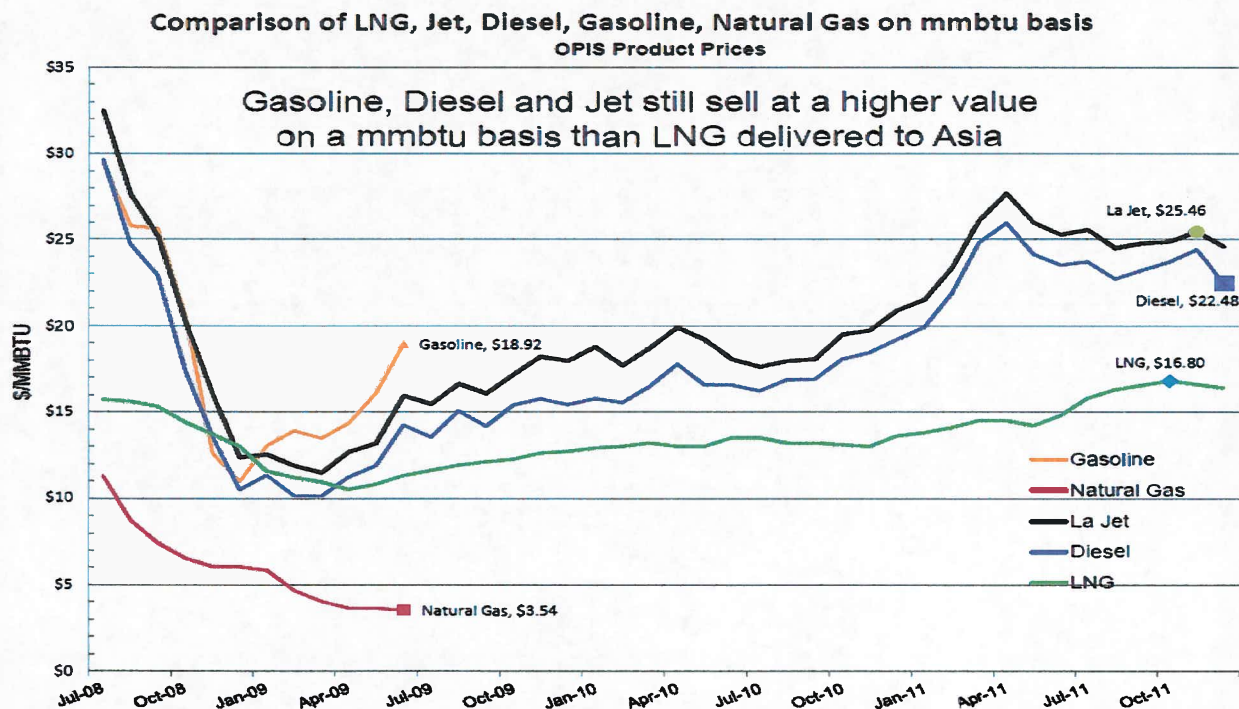


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Coast, even more in Anchorage, Alaska. You can chart this difference for years; finished transport fuels on the U.S. West Coast always sell for a premium against LNG anywhere in the world.

Add to this premium price for finished fuels Anchorage airport now imports more than 30,000 bbl/d of jet fuel for its daily 60,000 bbl/d requirement. A Southcentral GTL plant can replace this imported jet fuel at its back door. Not having to ship at least 30% of your product a great distance improves the net back. It is conceivable that between the Anchorage airport jet fuel requirement and the military demand for F-T fuels, up to 75% of a Southcentral GTL plant products will be sold at the plant outlet adding to the GTL plant netback.

The Chart below illustrates the higher value for transport fuels on the U.S. West Coast. Generally Anchorage transport fuels are 5¢/gallon (\$2/bbl) higher than West Coast prices and as much as 10¢/gallon over Asian prices. (The cost of shipping.)



The AGDC report claimed Alaska liquids were somehow tied to Cushing WTI prices. Really, one of the main reasons to build the Keystone XL oil line was to relieve the bottleneck at Cushing which has caused Cushing to sell at a marked discount to Brent, its traditional parity point. Alaska crude and transport products are tied to West Coast prices not midcontinent prices. Why, because there is no physical way (pipelines) to tie the two locations together.



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LNG will be chasing a limited market. GTLs will be chasing an almost unlimited market in the U.S. There are three GTL plants currently operating in the world. Sasol is looking at two new GTL plants in North America, one in Louisiana and one in Alberta, Canada but both will be feeding markets east of the Rockies. An Alaska GTL program will be the only U.S. based GTL plant capable of supplying the Western U.S., with the highest market value in the world.

At \$9/mmbtu natural gas no GTL plant can be competitive in the world period. However, increase the throughput to over 1 Bcf/d dropping the tariff to \$1.50/mmbtu saves Alaska railbelt customers \$ billions and actually can attract commercial gas customers to Alaska. Amending the Alaska Natural Gas Act of 2004 to allow North Slope natural gas delivered as transport fuels to U.S. fuel markets to qualify for the federal loan guarantee improves the economics of both the gas pipeline and GTL plant, lowers the pipeline tariff plus improves the net back to the well head. Having a local market for upwards of 75% of the GTL plant output adds to the netback and improves overall economics. Having an Alaska based F-T plant is a major plus for serving Pac Rim military needs.

While not the best location for a GTL plant, a targeted Southcentral location can support the need for supplemental gas supply throughout the railbelt, reduce U.S. dependence on imported energy and may not bust any AOGCC limitations on Prudhoe Bay gas used outside of the North Slope. If you expect or want support from the federal level you need to reduce U.S. dependence on imported energy.

There is no market in the Cook Inlet for an EOR program utilizing CO₂. A properly designed GTL plant that converts CO₂ into additional fuels will help satisfy GHG concerns.

The question to answer is will this Administration / Legislature continue to explore a sub-optimal pipeline evaluation when it can amend this charge today. Will the present Administration / Legislature follow the missteps of the previous Administration or Legislature in evaluating a gas pipeline that includes clear producer responsibilities?

Best regards,

Dick Peterson

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