

South-central Alaska Natural Gas Storage/Supply Issues: A Ratepayer's Review of Our Gas and Electric Challenges

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Today I'll be speaking with you as a private citizen, a ratepayer, who has some background as a regulator and a little as an employee of oil and gas production and transmission companies. I will focus on communicating with you about the very serious (even the perilous) natural gas storage and supply challenges we encounter right now, and make observations about the players and potential solutions.

Background

Let me first back up and make sure we're all on the same page.

An old friend of mine, [Bill Bishop](#), first identified where Richfield Oil should drill for Kenai Peninsula oil and the Swanson River discovery eventually led 1) to statehood 50 years ago, 2) to growing prosperity for Southcentral Alaska in the 60s and, 3) even to the Prudhoe Bay discovery. You heard Dr. Scott Goldsmith yesterday report that 2/3 of Alaska's economic growth since statehood stems from oil and gas.

In those early days, gas was a byproduct of oil exploration and there was neither an LNG export market nor any market for industrial, commercial or residential gas use. As the gas markets began to evolve

in the 60s, gas discoveries proliferated. With low demand for gas compared with plentiful supplies, the price remained lower than in other gas consuming areas for decades. We benefitted from low prices and increased our dependency on gas. Then over the decade of the 70s we increased taxes and regulatory burdens on producers; we increased risk for them to achieve benefits for citizens. Now, if Alaska wants a new generation of gas exploration it will have to compete—for investor dollars—with other oil and gas provinces.

You're aware that Trans-Alaska Pipeline System (TAPS) throughput (which fuels government tax and royalty revenue) is declining at a rate of about 6% annually; but citizens would be more shocked to know that the Cook Inlet basin gas production upon which they depend for jobs and home heating and electricity is declining at an annual rate between 8-14%. Remaining gas reserves today are only about 20% of Cook Inlet's total known reserves of about 9 Tcf. So, the general South-central scenario we face is a depleting gas supply...and an increasing demand...by a population that has tripled since the late 1960s. In this atmosphere of change, it is no surprise that citizens are complaining about prices, commercial and industrial customers are complaining about supply, utilities are fighting with each other at ratepayer expense, regulators are trying to hold prices down, producers are deciding whether to make capital investments in Alaska or choose opportunities elsewhere, and politicians are attempting to demonstrate relevance through investigations, hearings and proposed legislation.

As we will now find, a relatively one-dimensional gas storage and supply challenge has become entangled in a multidimensional web of complexity involving a Gordian knot-like collection of public and special interests.

Let's Look at the Issues

Southcentral utilities are facing an era of energy shortages which leads to storage and pricing challenges the various players now face and the Regulatory Commission of Alaska (RCA) is square in the middle of those challenges.

1. **Enstar Natural Gas** is the principal natural gas supplier for Southcentral Alaska and claims to face an immediate crisis in serving its nearly 350,000 Alaskan customers (128,000 meters). The RCA became immersed in the crisis during 2006 via Docket No. U-06-02. That docket dealt with Enstar's request for approval of a long-term gas supply agreement (GSA) with Marathon Oil Company, known as APL-5. Enstar sought approval of the contract which would have provided it with 60 Bcf to meet shortfalls by January 1, 2009 and maintain all customer commitments through 2016. A member of the Commission at the time, I dissented against the majority's action to reject APL-5. I will not reargue with you the virtues of the dissent I wrote to Order U-06-2(15), but will reaffirm to you my belief that the Commission—however well intentioned--tragically erred when it rejected APL-5 which would have begun providing Enstar customers with some of the lowest cost Cook Inlet gas available in 2009 and beyond. That 2006 rejection led to Enstar's filing of two new, shorter-term gas supply agreements this year—with ConocoPhillips Alaska and with Marathon Oil Company. Those APL-6 GSAs would have provided for Enstar's 1.9 Bcf shortfall beginning on January 1

and continue providing supply through 2013. In contrast to the 60 Bcf offered in the 2006, APL-5 contract, the new APL-6 contracts, combined, offer less than 38 Bcf. These 'APL-6' agreements were argued and adjudicated in Docket No. U-08-58 and were accepted by the Commission's October 31 order, but only if certain conditions were met by December 1. On December 1, Enstar informed the Commission that the producers would not accept the conditions but that it would elect an option to acquire supply from the producers at a price lower than its existing Weighted Average Cost of Gas (WACOG) for 2009 and 2010. It sought RCA approval for this approach, "...to recover from its customers the commodity costs incurred...." Enstar reported that it would have word from Marathon by December 8 (yesterday) on that producer's position and it reported the result in its 12-8-08, second compliance filing, a revised agreement with Marathon for a 'below WACOG' arrangement. The AG (RAPA), and Chugach Electric have objected to the revisions on the general basis that though Enstar might achieve a 'below WACOG' price result, using the revised APL-6 vehicles involve terms other than price that require further adjudication. Please note that the new, 'below WACOG' alternative left to Enstar, obviously provides for less supply, less security over a shorter period.

This ratepayer notes that even if the two APL-6 GSAs are ultimately agreed to in some form, they do not provide Enstar customers with security of certain supply for years following 2011. And, Enstar must now provide for supply security by

acquiring storage capability to meet peak demand beginning in 2011, in contrast to APL-5 in which the producer would have guaranteed a long term supply.

In its U-08-58(8) order, the Commission justified its conditional approval of the APL-6 GSAs in large part on the ‘Market Power’ possessed if not proven to be exercised by the producers (p. 18). A non-aligned ratepayer observer might observe that producer activities are not economically regulated; that anyone with a brain has known for a decade that Southcentral gas demand *and price* are growing with the population as supply is diminishing; that producers are not obviously taking undue advantage of some ‘market power’ concept until their pricing becomes noticeably oppressive from a North American market perspective. Also, it should not be surprising if ponderous regulatory schedules have given gas sellers an advantage as we approach a January 1 Enstar deadline, now uncomfortably within sight. Finally, I do not recall that Order U-06-2(15) upon which I dissented in 2006 used ‘market power’ of producers as a featured argument.

Another of Enstar’s challenges worth mentioning is that to use its gas, Enstar gas customers need electricity to operate space heating systems. When electric service is in jeopardy, so is gas service. So from the perspective of a customer of both Enstar and Chugach, I hope both utilities begin to work together as cooperatively as possible to avoid ‘mutually assured destruction’.

2. **Chugach Electric Association**. The original program stated that I would discuss some dispute over the use of line pack in natural gas fields. A similar matter—if not that one—is being generally litigated now in RCA Docket P-07-09. In Order No. P-07-09(9), the RCA ordered Chugach to detail, “...actions taken as well as the status and results of such actions, to ensure that it will be able to provide reliable electric service to Southcentral Alaska in the event of a compressor failure,” referring to a Beluga Gas Field compressor whose failure could shut down Chugach’s power generation. In its September 11 filing, Chugach documented nine compressor outages since August of 2007. To accommodate outages, Chugach and producers and Enstar have developed a Gas Assurance Plan (GAP). However, the GAP is being revisited and other options considered, including back-up gas supplies, high-pressure storage and various contractual obligations for gas delivery to the Beluga Power Plant. And, yes, there is tension among the parties as to how gas taken for Chugach’s Beluga turbines during Beluga Gas Field compressor shut downs, is accounted for.

Ratepayers should more deeply appreciate Chugach’s own set of supply and storage challenges. When the Agrium fertilizer plant was operating the Cook Inlet basin produced well over 200 Bcf of gas per year. The annual production is now moving closer to 150-175 Bcf, and will continue to drop even more precipitously in the next few years. (Anyone who says, “There

is plenty of gas in Cook Inlet; it's just a matter of price," may not be fully appreciating the obvious trends.) Southcentral's gas and electric utilities split about a third of production and Chugach is the largest power generator. About half of its gas supply contracts are with Marathon, concluding in 2010, with the balance of gas supply contracts binding ConocoPhillips, Chevron, ML&P into 2011, with possible future contracts to be developed with those same producers. Its three hydropower sources provide nearly 10% of Chugach's requirements and are reasonably dependable but cannot handle peak demand or substitute for lost, gas-powered generation. While the peak natural gas requirement for Chugach's generation is less volatile than the peak requirement for Enstar (a fundamental difference between heating and lighting), the peaks nevertheless tend to occur at the same time, once again emphasizing a symbiotic relationship between the two utilities. (Also note that while we won't go into all the challenges today of all the South-central electric utilities, most purchase the lion's share of their own power at wholesale prices from Chugach).

So what is Chugach doing to secure long term supply? Public documents suggest that in addition to seeking new gas supply, Chugach is working to install new, more efficient gas generation, obtain some wind generation, obtain some new hydro resources and investigate coal generation. Chugach views future gas supply as coming from new discoveries, LNG imports and the North Slope.

One notes that a few weeks ago, on November 20, Chugach's board of directors passed a resolution requiring that the utility move dramatically away from gas fired power generation. It opines that because of the rising cost of Cook Inlet gas, its alternate electric generation portfolio should move from 10% to 90% by 2020. This ratepayer and other observers, I am sure, will be pleased to hear how alternative energy sources can supply power more cheaply than gas powered generation. The details, as yet, are sparse, though. Other public interest considerations include the impact of Chugach's planning on other electric utilities that have in the past relied on it for wholesale power.

Unlike Enstar, Chugach could benefit by participation in a Susitna- or Chakachamna-type hydro project, many years from now. Like Enstar, Chugach would still require peak gas supply for power generation. Like Enstar, Chugach could benefit from a North Slope gas spur line project, years from now; however, its gas supply contracts will have to be extended until an ANS supply is available at a time when its Board has resolved to move from gas dependence to 90% alternate energy primacy. Like Enstar, Chugach can benefit from developing storage capabilities, but less so if it becomes only 10% dependent on gas-fired generation. In general, it seems logical that Chugach can best capitalize on storage opportunities by cooperative work with Enstar and with producers. And it could best capitalize on shared investment in generation by cooperative

efforts with other electric utilities. And, it could best assure dependable gas supply by cooperating with gas producers.

- 3. Other Gas Users.** One would not want to minimize the challenges faced by other utilities. ML&P might have certain power generation challenges but it also has a significant advantage through its Beluga gas field ownership and government bonding capability; and, some experts believe that up to 50% of Beluga's full gas potential has yet to be developed. Both ML&P and Chugach should be mindful that whether a taxpayer of Anchorage is served by one or the other he still has reason to wish them both to be healthy.

Seward's electric department maintains a fairly independent system but one that could suffer from lack of local grid support. It has recently improved reliability with a \$1.5 million upgrade to a 12470 volt system.

Homer Electric Association (HEA), like Matanuska Electric Association (MEA), seeks to be free of dependence on wholesale power from Chugach, relying on its effort to salvage lower cost power from the Healy Clean Coal Plant by negotiating an appropriate settlement between Golden Valley Electric Association and the Alaska Industrial Development and Export Authority.

Last June 9, MEA signed a memorandum of understanding with the Alaska Native Village corporation, Eklutna Inc., involving

the potential acquisition of nearly 70 acres of property for the purpose of building a natural gas power plant, adjacent to an existing electric substation. A June 25 document announcing this development did not contain information on sources of natural gas that such a facility would require.

4. **The Producers.** On November 25 the Alaska State Senate Judiciary Committee held a hearing regarding a November 10 notice Enstar sent to Aurora Power customers. The notice referred to an earlier notice from Aurora that it would be terminating service to these customers on December 1. Enstar warned customers that while it would provide service through year-end, it might terminate service to these customers on January 1, absent RCA approval of the two GSAs. Needless to say, the gas customer witnesses who appeared were furious and frightened. Enstar explained that it didn't have the gas absent RCA's approval of the GSAs. Marathon's witness, Carri Lockhart, noted that, "...we are once again working with Enstar, for the third time, to reach an agreement that will be acceptable to the RCA..." She continued, "...I would be remiss if I left you with the impression that all is well. It is not. The process of reaching closure on gas contracting has become very troublesome. The lack of well defined standards has made negotiating a contract difficult, with much uncertainty for the utilities, for the gas producers and for the area citizens." While sympathizing with the uncertainty faced by others, Ms. Lockhart gave pithy insight into the challenge her own company faced. She said, "For Marathon, we face an

investment commitment in order to ensure this high reliability yet at the same time we must strive to find ways to manage subsurface technical risk, operational risk and escalating cost of operations, as well as the market volatility and uncertainty. These all must be managed in a way that enables projects in Cook Inlet to effectively compete with other global projects in our portfolio for finite funding—especially in the challenging economy that we are facing today. It is imperative that all parties to these discussions understand the potential unintended consequences of meddling with such a delicate commercial balance.”

5. **The NGOs.** Alaska can be truly proud of its many non-governmental organizations working hard to facilitate solutions to the challenges noted above. These include the Anchorage Economic Development Corporation whose members have always kept a close eye on natural gas supply issues for South-central Alaska. The Anchorage Chamber’s 2007 South-central Energy Task Force took testimony and clarified energy challenges with its principal findings that, “Hope is not a strategy”, energy supply and price is reaching crisis proportions, the state has no fiscal plan and no energy policy. It went on to recommend—as the Northern Institute’s Transition Meeting did in Talkeetna in 2006—that a cabinet level position be established to deal with energy issues. This year, a Tri-Borough Commission proposed an energy policy for Southcentral Alaska which carefully reviewed the current energy supply/price conditions. It found that Alaska lags in

energy related activity and energy planning when compared with other similarly situated western states. It went on to recommend a proposed, “State of Alaska Energy Policy”, including reliance on, “...market forces to drive prudent development and use of energy resources....” The American Association of Retired Persons (AARP) should be praised for intervening in a number of the RCA’s utility rate cases over the last few years as a public interest advocate. The weekly and annual meetings of the Alaska Support Industry Alliance, Resource Development Council for Alaska and the Alaska Miners Association provide members and attending media representatives with a steady stream of credible, timely perspectives and data on energy issues from educators, politicians, economists, energy professionals and utility managers. Commonwealth North has also contributed to the body of knowledge with its own energy policy studies. The Alaska Oil and Gas Association organizes an annual meeting in cooperation with the Anchorage Chamber of Commerce to provide an accurate, professional projection of energy trends.

6. **Government organizations.** The Alaska Oil and Gas Conservation Commission conducted a conference on Southcentral Alaska’s energy situation in September of 2006. The University of Alaska’s Institute of Social and Economic Research produced a widely distributed report on the Conference, which carefully illustrated the natural gas supply, demand, storage and pricing scenario that is now unfolding.

The Alaska Natural Gas Development Authority under Harold Heinze's leadership is without NGO or government agency peer in energy planning. It has diligently researched Southcentral and total Alaska energy challenges and proposed professional, well constructed projects. One project includes a small diameter natural gas transmission line from the North Slope Foothills gas producing region to Fairbanks (370 miles) and then via the Alaska road system to Southcentral Alaska (i.e. using either the Richardson or Parks Highway, 395 and 320 miles respectively). Enstar estimates the project costs to be about \$3.3 billion. Some—including Enstar and Governor Palin—have advocated using the Southern conduit to supply Fairbanks with dwindling Cook Inlet gas supplies. Its 'line pack' could also provide storage for peak demand use by Southcentral utilities (i.e. line pack available is the difference between a spur line's own 2,500 psi capacity and Enstar's 600-700 psi minimum requirement and Chugach's 400 psi Beluga requirement). When a large diameter gas pipeline or smaller bullet line is constructed to bring ANS or Foothills gas to meet the pre-built spur line in Fairbanks, the southern spur line flow could then be reversed, moving ANS gas to Southcentral Alaska and could make storage challenges moot for a time. This factor, obviously, impacts the critical thinking of potential Cook Inlet gas exploration and storage investors.

7. **Storage Regulation.** Since 1991 the Alaska Oil and Gas Conservation Commission (AOGCC), has exercised jurisdiction re: gas storage. It routinely issues reinjection orders for

recycling, enhanced recovery, pressure maintenance. The AOGCC has issued 6 storage injection orders, affecting Point McIntyre (1-15-91), Swanson River Field (6-15-01), Swanson River Field (6-5-02), Pretty Creek Unit (9-12-05), Swanson River Field (10-31-05), Kenai Gas Field (4-19-06). In 2007, Senate Bill 109 was enacted into law, revising the Alaska Oil and Gas Conservation Act to specifically allow jurisdiction over underground storage of natural gas. The AOGCC exercises this authority on a case-by-case basis now but expects to promulgate regulations during the first half of next year. Various gas storage issues that might be embraced by the regulations and applications for storage could include things like:

- Engineering evidence reflecting the competence of a receiving reservoir.
- Clear identification of the reservoir, the proposed injection depth, the specific location of the receiving reservoir.
- Integrity of an injection well. Since injection could involve a well that one time was used to produce gas and now will be used to receive gas, what mechanical integrity testing might assure absence of corrosion, well integrity, working condition of valves, certainty that once gas gets into a reservoir it will remain there. What pressure and what volume are in play? Define the zone of influence affecting the crossing of boundary lines, property lines. When does a state of underground trespass appear, wherein an operator may have put a great volume of gas into a reservoir which then migrates into land owned by another?

- Related AOGCC considerations which the agency and commenters might consider could involve safety and conservation. What gas goes down must stay down. If someone proposes to inject gas near an oil reservoir could it be done without impinging on oil recovery?

8. **Storage Leases.** Different states view storage leases differently. Suffice to say here that a landowner may view an extraction lease differently than she views a lease for storage purposes. The first provides the landowner with rents, royalties and bonuses, potentially. What should the second provide the landowner? On November 24, the Division of Oil and Gas Petroleum Manager, Nan Thompson, sent a letter to various Southcentral utilities and producers. In it, she asked questions about gas storage leases in an effort, “to better assess the needs of industry and to formulate our policy....”

9. **Conclusion.** The Anchorage Chamber of Commerce had it right: “Hope is not a strategy”. The Tri Borough Commission had it right that market forces should lead to prudent energy outcomes. Steve Haagenon and his Alaska Power Authority have it right that energy objectives should include sustainable communities and a move from entitlement to independence. Alaska energy consultant Steve Pratt has it right that Alaskan fuel costs—particularly in rural Alaska--can be stabilized by using financial derivatives and hedging transactions.

Back to Southcentral challenges, the current gas supply and price scenario should be no surprise to anyone. We have heard the warnings and seen gas supply/demand/pricing charts, projections and scenarios for years. Most have been reasonably accurate. If current circumstances are not a surprise, one would expect responsible boards of directors and utility managers to successfully and cooperatively plan in such a way that surprises and crises do not dictate emergency action. Enstar and Chugach ratepayers have a right to expect a more cooperative working relationship with fewer litigation costs included in ratepayer bills.

With all due respect to the many minds in this room representing hundreds of years of background, training and advocacy I offer these closing perspectives as a ratepayer.

- ❖ With Chugach scheduled to lose half its gas supply by 2010 and the other half a year later it claims to be negotiating extended supply contracts with Marathon and the Beluga owners. I don't therefore understand why we ratepayers are paying for Chugach to challenge Marathon and ConocoPhillips' LNG export license extension. Does that action endear Chugach to producers and improve relationships in such a way that the producers will be more inclined to provide Chugach with continued gas supply? Or is our Chugach management using this technique to intimidate producers in such a way that they will feel forced to extend Chugach's gas supply agreements? Either way, I

think it would be to Chugach's benefit to clearly communicate to its ratepayers how much it is spending to oppose the export extension and for what purpose.

- ❖ For some like me who are ratepayers of both Chugach and Enstar it feels a little illogical and wasteful for my dollars to be spent on Chugach attacking Enstar's Gas Supply Agreements in U-08-58, which causes Enstar, in turn, to spend my dollars defending itself against Chugach. Or, should ratepayers assume Chugach is again trying to endear itself to Marathon and ConocoPhillips by challenging their gas sale to Enstar? Or, is Chugach—now perilously close to being without gas—attempting to intimidate producers into supplying their needs? Will fighting Enstar's gas supply efforts make Enstar more likely to cooperate with Chugach on storage or bullet line projects? Or is there other reasoning? In any case, those paying the bills should be fully informed, if not fully supportive, and ratepayers deserve to know how much Chugach is spending to fight Enstar and how much ratepayer money Enstar is forced to spend defending itself.
- ❖ On December 4, and to its credit, the RCA opened docket No. U-8-140 to investigate Chugach's gas supply. In part, the order recounts that, "Chugach stated that it generates ninety-three percent of its electricity from natural gas; its contracts for natural gas supplies will expire in 2010 and 2011, and despite over two years of negotiations it has not yet entered into new supply contracts. Chugach stated that it is uniquely vulnerable to higher gas prices and shortages, and has no significant alternatives to Cook Inlet gas. Chugach emphasized that any problems with its supply of

fuel will affect all railbelt electric utilities from Homer to Fairbanks.”

My first reaction to a reading of this order was to speculate as to whether Enstar will petition for intervention in this Chugach docket. The saying, “what goes around comes around,” came to mind. I hope Enstar does not intervene in this investigation. Enstar has enough on its plate and should not interfere with Chugach’s gas supply efforts just as Chugach seems to have had no business wasting ratepayer resources and the limited time of its staff on non productive, anti-producer, anti-Enstar litigation over the last year.

- ❖ The Attorney General of Alaska (AG) wears many hats. For our purposes here, one hat belongs to Alaska: the landowner, the lessor, the royalty owner, the taxing authority. Wearing that hat, the Attorney General defends the State’s several financial interests, also assuring protection of the Constitution’s Section VIII natural resource interests for all Alaskans, not just ratepayers. Another hat the AG wears has a big patch on it embroidered with the word “Public Interest”. Its firewalled, Regulatory Affairs and Public Advocacy (RAPA) office represents the public interest in RCA proceedings. In both the current Enstar GSA contract docket, U-08-58, and in the earlier Enstar GSA docket about which I dissented (U-06-2), the AG proudly wore his Public Advocacy hat. ***The Citizens’ interest in achieving appropriate leasehold royalty and tax income for the longest period of time was vulnerable and unprotected in both dockets.*** The AG wore only his RAPA hat, attempting to defend ratepayer interests in Southcentral Alaska, unconcerned with state revenue and citizen interests elsewhere. Even there, the AG failed, for it assisted the RCA

in tipping the scales of justice toward government decreed gas prices for certain **ratepaying interests**; it should have represented the **public interest** by more carefully balancing marketplace price negotiations with incentives to industry for providing long term supplies to future generations of Alaskans. No one likes higher energy prices, but left with the choice of government mandated, low prices now and no gas supply later, an objective tribunal with wiser support of the AG might provide more balance between price and supply objectives than current litigation suggests.

Indeed, the AG closed his December 4 response to Enstar's Compliance Filing by drawing a conclusion not even supported by the docket's record. He cavalierly opined in closing that, "At the Senate Judiciary Committee hearing on January 25 (Sic.), no producer claimed Cook Inlet gas supply was unavailable to meet local needs. The only thing discussed was price. The Commission's determination on what price is fair is unimpeached." That childlike potshot was misleading and irrelevant. The purpose of the November 25, 2008 hearing was for Legislators to gather information regarding the Enstar/Aurora Power controversy and the several hundred business customers whose interests are immediately affected. Certainly, no party at the Senate Judiciary Committee hearing would have attempted to fully explain the complex matter of supply or criticize the RCA price decision. That Legislative/political forum was neither the time nor place to litigate Enstar's gas supply agreements, nor did the committee invite all of the U-08-58 parties and affected entities to testify before them.

In the future, *I would hope* our AG could represent citizen beneficiaries of the Constitution's Section VIII, whether they live in Ketchikan, Anchorage or Barrow. *I would also hope* the AG could represent the public interest in a way which weighs the importance of long term gas supply for the next generation as heavily as it weighs current market pricing for today's ratepayers.

I guess I've just admitted that, for me, *hope is* a strategy, if not a solution.

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