

ALASKA STATE LEGISLATURE
SENATE SPECIAL COMMITTEE ON IN-STATE ENERGY

February 28, 2013

7:30 a.m.

MEMBERS PRESENT

Senator Click Bishop, Co-Chair
Senator John Coghill, Co-Chair
Senator Peter Micciche
Senator Dennis Egan
Senator Bill Wielechowski

MEMBERS ABSENT

All members present

OTHER LEGISLATORS PRESENT

Senator Fred Dyson
Senator Cathy Giessel

COMMITTEE CALENDAR

PRESENTATION: LONG-TERM PERSPECTIVE ON ENERGY ISSUES

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

BILL SHEFFIELD, representing himself
Anchorage, Alaska

POSITION STATEMENT: Presentation on long-term energy issues in Alaska.

JOSEPH GRIFFITH, General Manager
Matanuska Electric Association
Palmer, Alaska

POSITION STATEMENT: Presentation on long-term energy issues in Alaska.

ACTION NARRATIVE

[7:30:42 AM](#)

CO-CHAIR CLICK BISHOP called the Senate Special Committee on In-State Energy meeting to order at 7:30 a.m. Present at the call to order were Senators Egan, Wielechowski, and Co-Chair Bishop.

CO-CHAIR BISHOP welcomed Senator Dyson and Senator Giessel to the meeting.

PRESENTATION: Long Term Perspective on Energy Issues

[7:31:32 AM](#)

CO-CHAIR BISHOP welcomed Bill Sheffield and Joe Griffith. He explained that former governor Sheffield would provide an overview of an in-state gasline and Mr. Griffith would address the state of the Railbelt electrical system.

[7:32:31 AM](#)

BILL SHEFFIELD, former governor, explained that his appearance before the committee was part of a 28-presentation tour around Alaska. He said his overview would address what could be done for the present and future citizens of Alaska. He said Alaska was on the precipice and many communities were already over the edge of an energy crisis. He explained that too many Alaskan residents were struggling with high energy costs and declared that Alaska's energy crisis would only get worse.

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SENATOR MICCICHE joined the meeting.

MR. SHEFFIELD stated that Bush communities were paying high prices for basic comforts and Fairbanks was burning firewood for heat that was affecting air quality. He said the natural gas production decline from Cook Inlet had caused the loss of hundreds of jobs on the Kenai Peninsula and would drive up domestic and commercial energy costs in just a couple of years.

He explained that the solution was an in-state gas pipeline to tap into the tremendous reserves already proven. He proclaimed that the in-state gasline could happen if Alaskans mustered up the political will to do it. He said the act of building the in-state gas pipeline would benefit both the present population via job creation and future generations through lower energy costs.

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MR. SHEFFIELD said the Alaska Stand Alone Pipeline (ASAP) could provide the following benefits:

- Reduce Fairbanks' air quality problem.
- Allow Flint Hill Refinery (FHR) in Fairbanks to return to full production and eliminate its need to import expensive product; FHR averaged 130 railcar shipments per day, current average was 20 railcar shipments per day.
- Provide affordable energy to the proposed gold mine in Livengood.
- Provide affordable energy to the Donlin Gold Mine.
- Provide affordable energy to Bethel if the Donlin Gold Mine received gas.
- Cut Alaska Railroad's operating costs with lower energy prices and increased FHR deliveries.
- Reopen the Nikiski Agrium Plant. He noted that 325 jobs disappeared when Cook Inlet gas supplies shrank.

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He said barring some future large discovery, Cook Inlet gas supplies would continue to diminish while Southcentral faced the possibility of importing gas within a couple of years. He stated that Alaska had 35 trillion cubic feet of proven gas reserves on the North Slope. He said Alaska had talked about the big diameter gas line for some time, but the advent of fracking had flooded the gas market in the Lower 48 and the project had to be rethought.

He noted that the Alaska Gas Development Corporation (AGDC) had advanced ASAP. He said Governor Parnell and AGDC President Dan Fauske were to be commended for the progress made with ASAP. He stated that ASAP's environmental study showed significant progress, the right-of-way for the pipeline was all but secured, and financing could be arranged one way or another. He recommended that the state pay for ASAP outright in order to reduce tariffs and reduce end user costs. He noted that declining oil production might not allow for the state to entirely pay for ASAP.

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He declared that the longer Alaska avoided making a decision to go forward, the more expensive ASAP would get. He noted that AGDC predicted that every year of delay would raise ASAP's cost by \$200 million. He explained that immediate project approval would involve an additional four years to secure permits, complete engineering, and finalize design before construction could begin. He remarked that delays to proceed with the large

diameter pipeline project had increased estimates from \$25 billion to a high range of \$65 billion.

MR. SHEFFIELD stated that AGDC required the legislation to provide the tools in order to hold a successful open season for solid market commitments, follow through to build ASAP, and provide gas to Southcentral by 2019. He noted that Governor Parnell said in his State of the State Address that AGDC legislation was a priority and legislation would add horse power to AGDC's engine.

He announced that he was not an investor or had any operational interest in ASAP. He said he had been an Alaskan for more than 60 years and cared deeply about the present and future needs of Alaska. He said he believed it was time to quit studying and get on with investing in ASPA to provide affordable energy for Alaskans.

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CO-CHAIR BISHOP asked what the single most important thing to do if the state decided to move forward with ASAP.

MR. SHEFFIELD answered that the most important thing a state could do was build its infrastructure, maintain its infrastructure, and provide education. He said the state should provide the infrastructure to allow the private sector to come in and provide jobs. He stated that gas was for Alaskans and oil was for the state budget. He remarked that ASAP was the most important project that Alaska could do.

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CO-CHAIR BISHOP recognized that Co-Chair Coghill and Senator Micciche joined the meeting.

SENATOR MICCICHE stated that he agreed with Mr. Sheffield and noted that one of the reasons he was in the legislature was due to his frustration with gas. He declared that gas was a key issue for the state and he asked Alaskans to fairly evaluate the options. He said parochialism was a big problem in Alaska and folks had a hard time getting past what it would take to get a gasline going. He remarked that the visionaries that built the Trans-Alaska Pipeline System (TAPS) created the state's current economy. He stated that a number-two industry would be created the second the gasline valve was opened, no matter what pipeline diameter size. He asserted that Alaska was missing the boat and had been for a long time. He explained that like a 401K, a gasline project was not about market timing, it was about time

in the market. He noted that Alaska missed out on some high price opportunities from natural gas commodity prices and would face low price challenges, but a gasline project's average value over thirty or forty years would allow the state to come out on top. He stated that if a large diameter line was going to happen, it would have to happen soon. He declared that not moving forward with the large diameter line would require the state to get behind another option. He remarked that too many Alaskans were in need and too many jobs were being missed. He stated that margins did not work to drive projects with diesel and its negative impact affected mom-and-pop opportunities as well as the large industrial sector. He said he hoped that Alaska could move forward and thanked Mr. Sheffield for his comments.

MR. SHEFFIELD replied that it was important to fund ASAP and get to open season. He said Alaska was never going to know anything beyond what was currently known until open season. He explained that open season was where all of the decisions were made.

CO-CHAIR BISHOP thanked Mr. Sheffield for his presentation.

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CO-CHAIR BISHOP announced that the committee would stand at ease.

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JOSEPH GRIFFITH, General Manager, Matanuska Electric Association, noted that he was also the CEO for the Alaska Railbelt Cooperative Transmission & Electric Company (ARCTEC). He noted that he was Commander at Elmendorf Air Force Base and met former governor Sheffield during his assignment. He revealed that he had worked for Senator Dyson as well. He stated that he spent 25 years in the energy business; 22 years at Chugach Electric Association (CEA) and three years at Matanuska Electric Association (MEA).

He detailed that the Railbelt was made up of four private organizations and two municipal electric utilities. He identified the Railbelt utilities as follows:

- Anchorage Municipal Light & Power (AMLP).
- Chugach Electric Association (CEA).
- Golden Valley Electric Association (GVEA).
- Homer Electric Association (HEA).
- Matanuska Electric Association (MEA).

- Seward Electric System (SES).

MR. GRIFFITH said all of the utilities were not-for-profits, a key factor that affected future power costs.

7:56:07 AM

He explained that the parts of an electrical system were: generation, transmission, and distribution. He addressed transmission as follows:

- Connected all of the utilities together.
- Facilitated economic dispatch of power by bringing the cheapest power online first.
- Power transfer to facilitate constant load shifting.
- Reserve sharing to provide power if generation was lost.

He noted that power transfer and reserve sharing was worth billions of dollars a year to utilities. He said electrical customers would pay higher rates without power transfer and reserve sharing.

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He explained that all of the utilities had or would soon have their own generation capabilities. He said the investment by the utilities was about \$1 billion. He explained the power generation as follows:

- CEA: Beluga Power Plant (BPP), South Anchorage, IGT, Cooper Lake Hydro, and Eklutna Hydro.
- AMLP: Plant 1, Plant 2, and Eklutna Hydro.
- GVEA: North Pole, Eva Creek Wind, Healy Coal, Aurora Coal (contract), Battery Energy Storage System (BESS), Zehnder, and Delta.
- MEA: Eklutna Generation Station and Eklutna Hydro.
- HEA: Nikiski Combined Cycle, Soldotna, and Bernice Lake.
- SES: Seward Plant.
- Note: All utilities participated in the Bradley Lake Hydroelectric Project (BLHP).

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MR. GRIFFITH addressed the Railbelt's energy situation and noted that gas was a problem. He explained that it was critical to never let the Railbelt's gas system fail. He stated that Railbelt utilities were changing their investments and the ability to dispatch power would affect the transmission system

from Fairbanks to Homer. He noted that BPP would no longer be running in load-following mode as a buffer in the middle of the Railbelt and BLHP. He said the BPP change was due to HEA and MEA power plants coming online. He remarked that any successful, modern economy demanded reasonably priced power.

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CO-CHAIR COGHILL asked when the HEA and MEA plants would come online.

MR. GRIFFITH answered that HEA's Nikiski plant was online and their Soldotna facility would be online in six months. He said the real problem would occur when MEA's Eklutna Plant comes online and a portion of BPP shuts down, resulting in the inability to buffer BLHP sales coming north. He said the Railbelt was a year and a half away from having a real problem to deal with and that was inadequate time to fix the transmission system. He stated that the Railbelt would have to do some heroics in response to the changes.

CO-CHAIR COGHILL noted that Healy Clean Coal Power (HCCP) plant would be coming online and asked if that would help stabilize power for the Railbelt.

MR. GRIFFITH replied that HCCP would benefit Fairbanks when 50 megawatts was added.

CO-CHAIR COGHILL asked if HCCP was coming south.

MR. GRIFFITH replied that HCCP's power could come south.

CO-CHAIR COGHILL responded that he wanted to confirm the timing.

MR. GRIFFITH answered that the crisis faced by the Railbelt was fuel and transmission congestion. He stated that the crisis was in the near term, three to five years. He asserted that something had to be done to save the Railbelt.

CO-CHAIR COGHILL asked to verify that the first project was from BLHP going north into Anchorage.

MR. GRIFFITH answered yes. He said the problem was equally problematic from Anchorage to Fairbanks. He explained that it would be a little trickier when HCCP was brought online. He addressed long term issues when the Susitna-Watana Hydroelectric Project (SWHP) came online and the need to transmit a tremendous

amount of power in both directions, something that could not be presently done.

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CO-CHAIR COGHILL stated that transmission projects were big dollar items and noted Anchorage going north would be \$200 million. He asked what Homer to Anchorage would cost.

MR. GRIFFITH responded that resolving the entire BLHP constraint issue in addition to doing a Hydro-Hydro between BLHP and SWHP would be a \$1 billion challenge. He noted that there were cheaper alternatives if load-shed or blackouts were deemed acceptable. He said installing a second underwater high voltage direct-current (DC) line to BPP would provide near 100 percent reliability on the southern sector and allow for servicing without power interruption. He explained that a study conducted last summer advised that a second line be built to BPP.

CO-CHAIR COGHILL asked if the integration cost would be acceptable for installing a DC line to BPP.

MR. GRIFFITH answered yes and noted that a DC line was equivalent to the cost of overhead alternating-current (AC) lines.

CO-CHAIR BISHOP asked if it was Nikola Tesla and George Westinghouse that were arguing over AC versus DC.

MR. GRIFFITH answered yes and noted Nikola Tesla was an AC advocate.

CO-CHAIR BISHOP stated that Tesla was on the right track because you could move more AC based electricity at a lower cost.

MR. GRIFFITH responded that more AC electricity could be moved more cheaply, but AC systems resist movement because of their cyclic problem that created line loss and that added to its cost. He explained that DC did not exhibit line loss and did not require special equipment, but its costs were high and required large facilities on both ends.

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MR. GRIFFITH stated that the Railbelt utilities had a Fuel Situation Mitigation Effort underway as follows:

- Utility group studying potential fixes for the near term, three to five years.

- Costs prohibitive for interim importation fix of natural gas in the near term.
- Alaska Stand Alone Pipeline (ASAP) deliveries by 2019.
- North Slope liquid natural gas (LNG) trucking was a concept that could help with Fairbanks' air emissions and home heating issues, but would not do a thing for Southcentral due to volume limitations.
- SWHP's delivery by 2024 with transmission system upgrades.
- Least cost approach in the near term was to generate with diesel fuel until Cook Inlet gas supplies improved.

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MR. GRIFFITH addressed other short-term mitigations as follows:

- Decongest the transmission system to facilitate optimum use of BLHP energy and capacity, especially during the summer when it could carry the load; ARCTEC and Alaska Energy Authority (AEA) were working on decongesting the transmission system.
- More natural gas storage capability, Cook Inlet Natural Gas Storage Alaska (CINGSA) capacity was 11 to 12 billion cubic feet (Bcf), but more was needed.
- Cheaper diesel fuel could be derived from the state's royalty oil, but there would be constitutional issues.
- Continual state efforts to foster exploration in Cook Inlet and to keep an LNG exportation facility open for expanded market potential.
- Smaller, cheaper importation of LNG from the Lower 48 to aid the gas system in the short term.
- Import low cost propane from Canada.

CO-CHAIR COGHILL inquired if the benefit from BLHP's diversion upgrade would be realized without transmission upgrades.

MR. GRIFFITH answered yes. He explained that the Battle Creek watershed would be diverted with 45,000 megawatt hours added. He said the added power would be drawn from BLHP, but the added powered electricity could not be delivered when needed the most. He said generation would have to be shut down at other locations in order to get the BLHP power out.

[8:16:45 AM](#)

SENATOR WIELECHOWSKI addressed natural gas storage and noted a need at Beluga. He asked if Mr. Griffith was aware of the technical aspects for storage at Beluga.

MR. GRIFFITH replied yes. He said MEA's plant would be on the Beluga side due to the pipeline's location. He explained that he was actively talking to people that had storage capabilities to buy or rent storage to create a buffer.

SENATOR WIELECHOWSKI asked if AMLP and CEA would be helped to have more storage on the Beluga side

MR. GRIFFITH answered that it could because the pipeline could flow in either direction. He said the Cook Inlet Gas Gathering System (CIGGS) pipeline ran between Tyonek and Nikiski. He explained that if a cataclysmic event closed the pipeline, gas could be moved on the east side of the Kenai Peninsula without interruption.

8:20:00 AM

He addressed Independent Power Producers (IPP) and how they fit in the Railbelt system. He noted that he had spent 25 years dealing with IPPs in addition to people who thought that they could produce as cheaply as or better than the Railbelt utilities. He explained that there was a federal law called the Public Utility Regulatory Policies Act (PURPA) that required utilities to accept electrical power output for a combined heat and power facility. He stated that he welcomed any IPP that wished to compete on a head-up basis with a utility. He noted that often IPPs could not compete with the utilities, but they had a right to state that they were going to be a combined heat and power facility to sell power as an avoided-cost. He said there were two kinds of avoided-costs, firm versus non-firm. He explained that firm-avoided-cost meant an IPP had backup reserves and non-firm meant a utility could take what it wanted from an IPP without backup. He detailed that non-firm was less expensive than firm. He said most IPPs say that they would do the combined heat and power approach, a strategy that was a good one if a market for heat was identified. He noted that the federal law's intent was for IPPs to first be a heat producer and secondly as an electricity producer. He disclosed that most IPPs get it the other way around as an electricity producer that uses waste heat, a strategy that was not what PURPA was all about. He said the Regulatory Commission of Alaska (RCA) regulations mimic PURPA and require the same for the state. He stated that the big issue for IPPs was rates of return and the economics. He said investor owned IPPs required a 10 percent return or more to be able to make it. He noted that co-ops struggle along with three to five percent because of possessing a captive market and no shareholders.

SENATOR DYSON disclosed that Mr. Griffith made an effort to use coal as a fuel for MEA's new plant and was stymied by public opinion in the permitting process. He asked if Mr. Griffith could explain what occurred.

MR. GRIFFITH answered that Senator Dyson was correct. He said the intent to use coal occurred 10 to 12 years ago. He noted that he and Brad Evans, CEA's current CEO, conjured up a coal plant philosophy for the Beluga-Mine Moth facility, 25 miles west of Beluga. He declared the coal plant would have worked, but politics got in the way. He stated that if the coal plant would have been built, the current electrical situation would be different. He noted another attempt for a coal plant in the Matanuska-Susitna Valley that failed and ended up being built in Eklutna.

[8:24:44 AM](#)

SENATOR DYSON asked if Mr. Griffith was convinced that the stack discharges were within acceptable limits from the technology currently being looked at.

MR. GRIFFITH answered yes. He explained that coal plants were probably cleaner today due to stricter rules.

SENATOR DYSON addressed a big power generation plant concept on the North Slope that would produce high voltage DC electricity for the Railbelt. He asked if the concept was close enough to being a potential solution for the Railbelt.

MR. GRIFFITH replied that the North Slope power plant was a feasible project that had to be fully fleshed out. He noted that building a transmission line over Atigun Pass would be a challenge and noted that a costly proposal was to tunnel under it. He stated that reserves would be required on the south end and the project would end up being a matter of money. He commented that no power proposals should be taken off the table until something was found that worked.

[8:26:30 AM](#)

SENATOR DYSON asked who should be chosen to study the options regarding risks, costs, and cost-benefits.

MR. GRIFFITH responded that AEA should be the entity, but financial constraints limited their ability to step into the leadership role. He explained that if he were governor, he would have his energy czar sitting at the table with him every day.

CO-CHAIR BISHOP said he shared everyone's frustrations on how to get a single point of command and control structure for Alaska's energy needs. He explained that politics should be out of it with good business practices used to address energy needs and avoid crisis management.

MR. GRIFFITH replied that he would be happy to share his thoughts with Senator Bishop.

[8:29:33 AM](#)

He presented the ARCTEC 2013 request as follows:

- Governor Parnell had \$13.7 million in his budget to eliminate constraints on BLHP.
- Governor Parnell had \$95 million in his budget for SWHP.
- BLHP's Battle Creek Diversion in BLHP did not get into the budget; \$23.5 million would be required to keep the project on schedule.
- Governor Parnell had \$25 million in his budget for AEA's Renewable Energy Grant Fund; an additional \$31 million was required to keep the program going in 2013.

SENATOR WIELECHOWSKI asked about the Battle Creek diversion and the amount of megawatts that would be added.

MR. GRIFFITH replied that Battle Creek did not add any capacity to BLHP and limitations were dictated by the size of the generators. He said 40,000 to 45,000 megawatt hour of power would be added.

CO-CHAIR BISHOP asked to clarify that the term peak-peak meant BLHP would have more water to meet the peak power demand.

MR. GRIFFITH answered yes. He explained that Bradley Lake would have more water, but power capacity was limited by BLHP's generators.

SENATOR WIELECHOWSKI asked how long the Battle Creek project would take to complete if full funding was provided.

MR. GRIFFITH replied that the diversion work could start next summer or fall. He explained that the project was a simple diversion with no drilling required.

[8:32:45 AM](#)

SENATOR MICCICHE asked if Mr. Griffith could quantify his optimism for improvement in Cook Inlet gas supplies. He noted that he was struggling with Mr. Griffith's previous comment.

MR. GRIFFITH replied that he had also struggled with Cook Inlet gas supplies for many years. He stated that many experts had informed him that a lot of gas existed and it was a matter of finding it. He explained that it would take 16 to 18 wells per year at a cost of \$10 million to \$20 million. He said he would remain optimistic if the state continued to foster drilling through a tax arrangement.

SENATOR MICCICHE agreed with Mr. Griffith that not enough wells were being drilled. He stated that three large Cook Inlet fields had supplied the entire basin for 40 years and a fourth was not likely. He remarked that the activity needed to keep up with the decline curve was not happening and the region had a natural gas problem.

MR. GRIFFITH replied that he agreed.

SENATOR MICCICHE stated that he hoped there would be gas discoveries to extend the critical-intersection. He said he struggled with Mr. Griffith's comment that diesel was the best option when its cost was three to four times higher than natural gas.

MR. GRIFFITH replied that a long term solution to use imported gas would easily beat diesel, but that concept would be an anathema for the legislature. He said gas from the North Slope was years away and it was too late for coal or hydro. He stated that diesel made sense in the next three to five year period. He noted that propane would probably beat diesel, but he was working on its feasibility.

[8:36:32 AM](#)

SENATOR MICCICHE asked to confirm that some Cook Inlet utilities were considering importing LNG as a short term option.

MR. GRIFFITH answered yes. He remarked that he was a member of the group considering the imported LNG option. He noted that the turbines for the plant being considered for LNG could seamlessly switch to diesel. He said MEA was also looking for a less expensive diesel fuel supply. He reiterated that all energy options were on the table.

SENATOR MICCICHE responded that he appreciated Mr. Griffith's comments. He stated that assisting Mr. Griffith's efforts was important to the committee.

MR. GRIFFITH thanked the committee.

CO-CHAIR BISHOP thanked Mr. Griffith and Mr. Sheffield for their presentations.

[8:38:13 AM](#)

There being no further business to come before the Senate In-State Energy Committee, Co-Chair Bishop adjourned the meeting at 8:38 a.m.