ALASKA STATE LEGISLATURE
HOUSE SPECIAL COMMITTEE ON ENERGY
March 6, 2018
10:19 a.m.

MEMBERS PRESENT

Representative Adam Wool, Chair
Representative Matt Claman
Representative John Lincoln
Representative DeLena Johnson
Representative Jennifer Johnston
Representative George Rauscher

MEMBERS ABSENT

Representative Ivy Spohnholz, Vice Chair

COMMITTEE CALENDAR

PRESENTATION: UNDERSTANDING ENERGY IN THE INTERIOR

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

JOHN BURNS, Vice President & General Counsel
Golden Valley Electric Association
Fairbanks, Alaska
POSITION STATEMENT: Presented a PowerPoint titled "Understanding Energy in the Interior."

ACTION NARRATIVE

10:19:41 AM

CHAIR ADAM WOOL called the House Special Committee on Energy meeting to order at 10:19 a.m. Representatives Wool, Johnson, Lincoln, Rauscher, and Claman were present at the call to order. Representative Johnston arrived as the meeting was in progress.

PRESENTATION: Understanding Energy in the Interior

10:20:01 AM

CHAIR WOOL announced that the only order of business would be a presentation titled, "Understanding Energy in the Interior."

10:20:55 AM

JOHN BURNS, Vice President & General Counsel, Golden Valley Electric Association, noted that a color-coded map and a plain paper map which depicted the Railbelt System, as well as a decision by the Regulatory Commission of Alaska (RCA) related to the Delta Wind Farm, had been distributed to all the members [Included in members' packets]. He introduced the PowerPoint, titled "Understanding Energy in the Interior." [Included in members' packets]

MR. BURNS explained that the presentation would be in three parts: Golden Valley Electric Association (GVEA), today; Golden Valley Electric Association, tomorrow; and Golden Valley Electric Association, in perspective. He shared slide 2, "GVEA at a Glance," which listed a membership of almost 35,000, serving nearly 100,000 residents over almost 6,000 square miles. He reported that there were a little more than 3,200 miles of power lines, from Cantwell to Delta. He shared that the latest retail sales were 1.24 billion kWh, about $141 million of power purchases.

10:25:32 AM

MR. BURNS moved on to slide 3, "Where Our Power Comes From," and reported that the fuel supply in 2016 and 2017 had been essentially the same. Directing attention to the 2017 pie chart, he stated that hydro, 5 percent of the total energy, was from Bradley Lake, that coal was the cheapest source, that natural gas was the "economy energy" and was purchased from other utilities, that oil was the dominant source, and that the wind power was from Alaska Environmental Power and Eva Creek.

CHAIR WOOL asked about the anticipated percentage of coal use once the Healy 2 coal power plant comes on line.

MR. BURNS replied that coal use would increase, as it was the cheapest source, with an offset for the use of oil and natural gas.

REPRESENTATIVE RAUSCHER asked about the effect on the consumer.

MR. BURNS explained that it would have a direct, significant impact on the cost of power adjustment (COPA).

10:28:26 AM

MR. BURNS introduced slide 4, "GVEA Generation," which depicted the sources of GVEA power, including Healy Unit 1 & 2, Fairbanks, Eva Creek Wind, North Pole, Delta, and North Pole Expansion. He offered a brief description of each source.

REPRESENTATIVE JOHNSTON asked if gas and diesel were combined at the North Pole Expansion plant.

MR. BURNS explained that the plant was run on diesel although it was convertible to gas. He said there were two turbines, as the one was gas and its exhaust was converted to steam.

MR. BURNS returned to slide 4 and reported that the Delta plant was an emergency back-up, as it was the most expensive plant. He pointed out that the North Pole plant was oil because that was all that was available when it was built. He declared that the Eva Creek wind farm had been a tremendous success, with a 35 percent efficiency.

CHAIR WOOL asked about the cost per MW of the two North Pole plants.

MR. BURNS replied that he was not sure of the cost. He stated that Healy was the cheapest, although at Eva Creek the cost of the power was zero, except for the associated capital costs.

REPRESENTATIVE JOHNSTON asked if battery storage was used in Fairbanks to retain the power from Eva Creek.

MR. BURNS replied, "not the way it's currently configured." He shared that, as the battery technology was now vastly improved, this was being evaluated.

10:34:09 AM

CHAIR WOOL asked if Eva Creek and Delta Power, both wind sources, could share the same spinning reserves to offset the fluctuations and avoid extra costs.

MR. BURNS replied that this underscored the components of renewables: integration cost and regulation cost. He explained

that when Eva Creek was built, it was sized appropriately to optimally absorb the spinning reserve that was regularly run and have no impact on the system. He pointed out that putting more renewables on that pad would have to ensure there was sufficient spinning reserve to capture the regulation. If this was not optimized, it became necessary to bring on additional spinning reserve. He emphasized that utilities were not against renewables, as utilities had an obligation to bring on reasonably priced power.

REPRESENTATIVE JOHNSTON pointed out that this brought the conversation back to the need for storage.

CHAIR WOOL offered his understanding that the battery at Golden Valley was used to quickly supply a lot of power in the case of a power outage, as opposed to a fluctuating reserve.

10:37:42 AM

REPRESENTATIVE JOHNSON asked about the base demand to Golden Valley Electric Association.

MR. BURNS replied that the peak load was 210 [MW], usually in the coldest part of winter. He stated that 281 [MW] was the generating capacity, although, as the cost was so expensive, they did not want to go to full capacity.

REPRESENTATIVE JOHNSON asked if the base load was covered just by coal.

MR. BURNS said that coal could not be used to regulate, as it was necessary to have something that was very responsive. He pointed out that the challenge was to optimally configure a system with generation sources. He declared that it was Golden Valley Electric Association's responsibility to keep the lights on at the lowest cost.

REPRESENTATIVE CLAMAN asked if the peak load was when all the plants were running at full generation capacity.

MR. BURNS explained that load was different than generation. He pointed out that load was demand, how many consumers were drawing on the electricity. He explained that generation was the ability to produce, and that these were different components.

10:40:32 AM

MR. BURNS, in response to Chair Wool, stated that it was the 120 MW North Pole plant.

MR. BURNS moved on to slide 5, "Independent Power Producers (IPP)," and reported that the three largest IPPs were Delta Wind, Bradley Lake Hydro, and Aurora Energy, which was coal fired. He pointed out that these IPPs could connect to the GVEA system, either as a small utility of 2 MW or less through a simplified streamlined process, or as a larger utility of greater than 2MW which required use of the Interconnect Agreements.

MR. BURNS addressed slide 6, "GVEA Supports Renewable Power," and declared that GVEA strongly supported renewables, pointing out that they had the ability to generate up to 20 percent of their requirement with renewables. He added that there was a very aggressive SNAP program, Sustainable Natural Alternative Power. He reported that of the 199 SNAP producers, 96 percent were producing solar power. He called this "net metering" as the excess was sold back to the utility. He spoke about the Eva Creek wind farm, with 12 turbines producing a capacity of almost 25 MW. He added that the wind farm had been running at almost 35 percent efficiency for the past five years. He declared that "it's been wonderful," and he added that the size had been optimized for the system. He shared that most utilities had similar commitments for renewable energy, declaring that "we have to be stewards of our environment." He reported that the initial pledge for renewable energy had been 10 percent of the system peak load, which had been met in 2007, and increased to 20 percent, which had also been met by 2014. He reported that the board, as part of its strategic planning, was currently evaluating the next goal.

CHAIR WOOL asked if the 20 percent was capacity of peak demand.

MR. BURNS explained that when all the available renewals are maximized, that would be 20 percent of the peak. In response to Chair Wool, he said that this included Bradley Lake.

MR. BURNS addressed slide 7, "GVEA's New Solar Project," declaring this to be the newest project and the largest solar array in Alaska, all on a three-acre footprint. He reported that the panels had been ordered and the process would begin in the spring.

10:45:51 AM

REPRESENTATIVE JOHNSTON, noting that the peak was seasonal, asked if this was tied to industrial use.

MR. BURNS stated that GVEA considered this "somewhat of an experimental process." He explained that, although solar worked, it remained to be seen how it would integrate into the GVEA system. He said that it was not tied to any industrial use, as they were still trying to determine how it be integrated. He added that although it was only 0.5 MW, and covered three acres, it reflected the GVEA commitment to renewables. He pointed out that the optimal time for solar in Fairbanks was the spring due to the reflection off the snow and the angle of the sun.

REPRESENTATIVE JOHNSTON asked if [the solar panels] had automatic directional.

MR. BURNS offered his belief that these were stationary.

CHAIR WOOL offered his belief that they would need to be brushed off during the winter.

MR. BURNS reiterated that it would be an experiment.

CHAIR WOOL spoke about a power plant in Colorado which produced power using wind, solar, and batteries and was cheaper than coal.

MR. BURNS, in response to Representative Rauscher, said that the solar project produced half a megawatt at its best. He opined that it would supply power for about 50 residences year-round.

REPRESENTATIVE RAUSCHER asked if there was any rebate.

MR. BURNS explained that GVEA owned the project, although there had been a $250,000 grant for this project.

MR. BURNS, in response to Representative Johnson, said that about 54 residences were served by the half MW, and that he would confirm. He moved on to slide 8, "Power Purchases," and shared that the independent power producer (IPP) Aurora Energy produced 25 MW from coal and the Chugach plant supplied 60 MW from natural gas through the Intertie.

MR. BURNS shared slide 9, "Residential kWh Rate Comparison*" which compared the costs of different energy to the billing

amount for 600 kWh. He noted the savings when GVEA could purchase economy energy, natural gas, to offset the higher cost of fuel oil.

CHAIR WOOL asked whether Homer Electric used natural gas.

MR. BURNS said that he was not sure, although he pointed out that Homer Electric had just installed "some additional facilities" which added to the total cost.

CHAIR WOOL asked where Juneau would fit on the list [on slide 9].

CHAIR WOOL opined that in rural Alaska, after PCE [power cost equalization] and for usage less than 500 kWh, the cost was about $0.25.

MR. BURNS explained that the slide clearly illustrated that the power generation mix correlated to the price.

CHAIR WOOL asked about the cost of transport for power from Bradley Lake to Fairbanks.

MR. BURNS said that he was not sure of the transmission cost. He noted that GVEA owned about 18 percent of Bradley Lake and that it had tremendous potential for regulating variables.

REPRESENTATIVE JOHNSTON explained that there was an issue for transmission with Bradley Lake, opining that the ML&P (Municipal Light & Power) ownership would have sold Bradley Lake as it did not fit into the business plan.

MR. BURNS acknowledged that all the Railbelt utilities were monitoring the Anchorage ML&P proposed sale with Chugach Electric Association to better understand the impact. He declared that the utilities had to take a holistic perspective, as they could no longer operate as islands. He stated that "the Intertie has been a very positive thing."

REPRESENTATIVE JOHNSTON shared an anecdote about early power in Fairbanks.

10:57:56 AM

MR. BURNS moved on to slide 10, "Dispatching Power... by the minute," and he played a video which explained how to optimize the energy mix in real time to save money.

MR. BURNS stated that the goal was to optimize generation in order to minimize costs.

CHAIR WOOL asked whether the Anchorage utilities were calling Golden Valley Electric Association for cheap power.

MR. BURNS acknowledged that they were not calling, even as there "were lots of exciting things that are happening on the Railbelt, and there may be a time when one of our generating units is part of the power cooling agreement."

REPRESENTATIVE JOHNSTON asked if the military efforts to move toward renewable power would affect the power structure.

MR. BURNS said that he was not sure if it would affect the power structure, and he shared that GVEA was also working on renewables to allow the military the benefit for its use.

REPRESENTATIVE JOHNSTON asked about the increase in demand.

MR. BURNS explained that it was a "trickledown effect, as the population increases, service demands increase, businesses multiply, that sort of thing." He said that he was unaware of an analysis for the long term economic impact for Fairbanks or the load increase for GVEA. He opined that, if this came to be, it would be a huge positive. He explained that the next slides would reflect GVEA tomorrow, which he deemed to be "very bright." He returned to slide 11, "The Future Looks Bright," and shared a number of the proposed projects, including the new load at the Clear Air Force Station, additional demand at Eielson Air Force Base, addition of renewable energy sources, and the $7.2 million capital credits refund.

11:05:52 AM

MR. BURNS moved on to slide 12, "GVEA's Rate Case Successfully Completed," and reported that this had just been submitted and approved, contingent upon Healy 2 adding to the base load.

CHAIR WOOL mused that, although the power production cost would be less as Healy 2 would be burning coal, the capitalization cost for the power plant would have to be added, and he asked how that would affect the rates.

MR. BURNS said that there would be a slight impact, although the cost was spread over 30 years. He said that the reduction in

cost of generation would more than offset the cost of capitalization, resulting in a significant decrease in the overall consumer bill. In response to Chair Wool, he expressed agreement that the goal was for a net reduction.

11:08:14 AM

MR. BURNS moved on to slide 13, "Meter Replacement Project," and spoke about the advanced metering infrastructure (AMI), which allowed the consumer tremendous access to data for consumption and costs in real time. He declared that this would improve the system reliability and would allow them to pinpoint the outages and respond more quickly.

REPRESENTATIVE JOHNSON asked if these were smart meters, noting that these were very controversial.

MR. BURNS acknowledged that these meters could be controversial, dependent on the perception, as they collected a lot of data. He pointed out that this was optimum for a utility, as they monitored peak load demands and time of day usage. This would allow for a change to rate structure to offer different pricing at different times. He declared that the intent was to ensure better service, not to have "big government, somebody looking over your shoulder and knowing what's going on."

CHAIR WOOL asked if the current rate was across the board, all the time; whereas , in a more advanced system, there could be a different rate at different times of day dependent on demand.

MR. BURNS explained that very sophisticated utilities had notices to customers for load curves and corresponding costs, and that this was an opportunity to maximize opportunities. He called this a load balancing process.

CHAIR WOOL reflected on earlier discussions for on-bill financing to include the purchase of various devices, such as batteries that could be used to store energy during non-peak hours.

REPRESENTATIVE JOHNSON asked if there was the potential for an opt out on the meters.

MR. BURNS replied, "absolutely."

REPRESENTATIVE CLAMAN mused that this was an issue between "big brother watching them using power" and "saving money."

CHAIR WOOL asked about a communication line from the meter.

MR. BURNS said that it was internet based, although he was unsure for the set-up to the array. He expressed agreement that the data had to be collected and communicated.

MR. BURNS reiterated that the reissuance of this refund was very positive and that it underscores "that as a co-op, members are the owners," slide 14, "$7.2 Million Refunded in Capital Credits."

11:16:52 AM

MR. BURNS discussed slide 15, "Alaska Railbelt - 1980s," which he described as the "holistic overview." He shared the reality that GVEA was intimately connected to the Railbelt, and how critically dependent it was to the other Southcentral utilities.

MR. BURNS directed attention to slide 16, "Alaska Railbelt - 1990s" and slide 17, "Alaska Railbelt - 2000s," which showed the development of the Alaska Railbelt, as prior to this development, GVEA was an island: "When we were out of power, we were out of power." He stated that, as this became a health and welfare issue, Alaska recognized this and created the Alaska intertie. In the 2000s, the Northern Intertie was added, as well as the Battery Energy Storage System, the Ground Based Missile Defense, Alyeska Pump #9, the Pogo Gold Mine, the expanded transmission line from North Pole to Carney, and Clear Air Force Base.

CHAIR WOOL asked about the North Pole to Carney reference.

MR. BURNS explained that it was a transmission line, although he was unclear for its purpose beyond additional power for those areas. He reiterated how important it was for everyone to recognize that everyone was interconnected.

11:22:12 AM

MR. BURNS shared another short video which, he stated, underscored the cooperation among the Railbelt utilities, even though people did not always agree.

MR. BURNS stated that working together was "the only way that we can ensure that we all succeed." He concluded with slide 19,

"Alaska Railbelt Update," and offered his belief that the future looked bright and that decisions could not be made in a vacuum.

REPRESENTATIVE JOHNSON asked about the vision for power pooling in Southcentral Alaska.

MR. BURNS replied that optimally the utilities would work together and use the lowest costs, progressively, to configure all the energy generation. He declared that it would require some cooperation. He added that the utilities were working through some challenging issues, including billing and dispatch.

11:31:54 AM

REPRESENTATIVE JOHNSON asked if GVEA was in favor of formation for the Railbelt Utility board.

MR. BURNS said that he had just read the proposal, and that he was not in a position to respond.

REPRESENTATIVE JOHNSON stated that it was obvious for what needed to happen and questioned if it was possible to coordinate this without an oversight Railbelt utility board.

MR. BURNS offered his belief that the utilities needed to be working through the issues together and that the proposed bill was aspirational legislation that should be looked at to better understand how to internally address the issues. He assured the committee that the GVEA management would review the proposal, and that it would be discussed at the Railbelt management meetings. He said that, although many wanted to pass edicts for a specific direction, this action could result in a more troubling solution than what was being sought. He added that, although the proposed bill provided aspirational aspects for what the utilities ought to be thinking about, he expressed concern for another body that forced an issue which should be accomplished through dialogue.

MR. BURNS, in response to Representative Johnson, reiterated that he had not "had time to digest it."

11:34:52 AM

CHAIR WOOL relayed that this was an issue that had been around for a while.

REPRESENTATIVE RAUSCHER asked if the video showed a connection between Copper Valley and MEA.

MR. BURNS said that he would review the video.

REPRESENTATIVE JOHNSTON stated that it showed it as part of a northern intertie.

11:37:19 AM

ADJOURNMENT

There being no further business before the committee, the House Special Committee on Energy meeting was adjourned at 11:37 a.m.