ALASKA STATE LEGISLATURE
SENATE SPECIAL COMMITTEE ON ARCTIC AFFAIRS
January 30, 2025
1:30 p.m.

MEMBERS PRESENT

Senator Cathy Giessel, Co-Chair
Senator Gary Stevens, Vice Chair
Senator Scott Kawasaki
Senator Bill Wielechowski

MEMBERS ABSENT

Senator Donald Olson

COMMITTEE CALENDAR

PRESENTATION(S): TOURING THE ELECTRIC NORTH, ALASKA CENTER FOR ENERGY AND POWER, UNIVERSITY OF ALASKA FAIRBANKS

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

GWEN HOLDMANN, Chief Scientist
Research, Innovation, and Industry Partnerships
Alaska Center for Energy and Power
University of Alaska Fairbanks
POSITION STATEMENT: Delivered a presentation titled "Touring the Electric North."

ACTION NARRATIVE

1:30:30 PM
CHAIR GIESSEL called the meeting to order at [1:30 p.m.] Present at the call to order were Senators Wielechowski, Stevens, and Chair Giessel. Senator Kawasaki arrived thereafter.

PRESENTATION(S): TOURING THE ELECTRIC NORTH
ALASKA CENTER FOR ENERGY AND POWER
UNIVERSITY OF ALASKA FAIRBANKS

1:31:18 PM
CHAIR GIESSEL announced a presentation from the Alaska Center for Energy and Power titled "Touring the Electric North." She introduced Ms. Holdmann and invited her to begin the presentation.

1:32:06 PM
GWEN HOLDMANN, Chief Scientist, Research, Innovation and Industry Partnerships, Alaska Center for Energy and Power, University of Alaska Fairbanks, advanced to slide 2 and gave a brief overview of the Electric North:

[Original punctuation provided.]

The "Electric North"

> The Electric North refers to regions north of the interconnected continental grids of North America and Eurasia.
>
> These areas are electrically served by a combination of regional grids, small distribution grids, or isolated microgrids.

MS. HOLDMANN said that energy type and cost vary greatly among the different grid types within the Electric North, as do utility management and subsidization among the various nations. She opined that there is potential for Alaska to learn from - and share knowledge with - other countries in the Electric North.

1:34:17 PM
MS. HOLDMANN advanced to slide 3, containing a map of the Electric North showing settlements by connection type. She described the various grids and noted similarities and differences. She noted the various energy resources, including hydroelectric and geothermal. She commented on the use of renewable energy resources in remote Alaskan communities. She briefly discussed the use of imported fuels across the Arctic. She noted that all areas of the Arctic utilize subsidies to provide power to remote locations; however, the management of those subsidies differs greatly across the region.

1:36:19 PM
SENATOR WIELECHOWSKI asked how Alaska's prices compare to other countries - particularly in rural Alaska - and what the State of

Alaska can do to lower costs. He also asked Ms. Holdmann to discuss Iceland's electric grid.

MS. HOLDMANN replied that she would be happy to touch on Iceland during the presentation. In terms of energy, she explained that Alaska's delivered cost of energy is higher than most places in the Arctic. She surmised that it is the highest, as Alaska has the lowest subsidy rate. She referenced the Power Cost Equalization (PCE) program and pointed out that this is significantly less and is structured differently than other areas in the Arctic. She noted that the cost for generating power from diesel fuel in Alaska is comparable to other arctic locations. She briefly discussed Alaska's generation efficiency compared to other arctic locations and the potential for improvements to diesel-based power generation. She said that an upcoming slide would address the benefit of adding renewable energy sources.

1:37:46 PM
SENATOR KAWASAKI joined the meeting.

1:38:19 PM
SENATOR STEVENS commented that the geography of the Arctic is fascinating. He described Russia's large geographical connection to the Arctic and contrasted this to Alaska's smaller connection. He briefly discussed the difficulty of traveling the Northwest Passage and opined that viewing the map would help others to understand the challenges Alaska faces.

MS. HOLDMANN agreed and said she could provide printed map posters to those who would like one.

1:39:05 PM
MS. HOLDMANN advanced to slide 4, containing a map of electricity generation by source. She explained that if the Arctic was defined as an energy region by the International Energy Agency, it would be the global leader in the use of renewable energy for power generation (in terms of proportion):

[Original punctuation provided.]

The Arctic region is the global leader in renewable energy development

Primary energy source for electric power generation:

- Finland 39 percent (biomass)
- Sweden 48 percent (hydropower, biomass)

- Norway 99 percent (hydropower)
- Iceland 100 percent (geothermal, hydropower)
- Greenland 70 percent (hydropower)

1:40:39 PM
SENATOR WIELECHOWSKI asked what percentage of Alaska's energy comes from hydropower and how other Arctic countries fund hydropower.

MS. HOLDMANN replied that hydropower makes up 20 percent of Alaska's statewide energy portfolio. She noted that this is inequitably distributed. She explained that hydropower projects are expensive and offered an example of a large dam in Iceland to illustrate how a large hydropower project might be funded using contracts with heavy industries (e.g. aluminum smelters).

1:42:34 PM
SENATOR STEVENS said that he had seen the smelters in Iceland and shared his understanding that the aluminum is imported. He surmised that the smelters operate in Iceland because of Iceland's low energy cost.

MS. HOLDMANN briefly discussed the low energy cost in Iceland. She explained that Iceland has been able to build out renewables at-scale. In addition, Iceland sells significantly more energy per capita than Alaska's Railbelt, which lowers the cost for all users. She explained the role of long-term industry contracts in lowering costs and pointed out that once the industry contracts expire, they will be renegotiated at a higher price.

1:43:52 PM
MS. HOLDMANN advanced to slide 5 and discussed renewable energy production in Norway:

[Original punctuation provided.]

> **Arctic countries are clean technology leaders (example H2/Ammonia in Berlevag, Norway)**
>
> Berlevag hydrogen production from wind; planned 100 MW green ammonia facility in using renewable power from Varanger Kraft’s adjacent wind farm on Raggovidda.

MS. HOLDMANN provided a brief overview of Norway's energy production and challenges. She noted that Norway is weakly connected into the continental grid and therefore has issues with stranded resources. She emphasized the importance of a

strong transmission network to transport renewable energy. She explained that Norway is utilizing stranded wind resources to power green ammonia production. She noted this is one example of how renewable energy might be used to meet needs that are not traditionally covered by electric power. She shared a personal anecdote to illustrate how Norway has disallowed diesel near its fjords and how industry is responding to - and is supportive of - that approach.

1:46:07 PM
MS. HOLDMANN advanced to slide 6 and discussed renewable energy in Greenland:

[Original punctuation provided.]

> **Arctic countries are clean technology leaders Waste to Energy (Nuuk and Sisimiut, Greenland)**
>
> Incinerate municipal waste generated locally and imported from surrounding communities and use it for space heating.

1:47:09 PM
CHAIR GIESSEL surmised that Nuuk must be a consolidated community and asked how the heating reaches the community.

MS. HOLDMANN explained that European cities often utilize district heating systems. She briefly explained that Nuuk is geographically spread out and briefly described the heating system, noting that it is upgraded with additional energy sources over time. She shared an anecdote to illustrate how countries (e.g. Denmark) feed geothermal energy directly into the district heating system.

1:49:40 PM
CHAIR GIESSEL asked a clarifying question. She noted that Utqiagvik has a utilidor system and asked how the heat is transmitted to the homes in Nuuk.

MS. HOLDMANN replied that it is typically hot water heat. She briefly described the process of calculating energy usage in a particular home.

1:50:16 PM
CHAIR GIESSEL wondered about the mechanics of the systems and asked if the pipes are buried or above ground.

MS. HOLDMANN replied that there are many designs for district heating systems. Some are fully above grown, some are below ground, and some are partially above ground. She noted that the utilidor systems in Fairbanks are below ground. She commented that the coal plants in Fairbanks are often thought of as "heat plants" with electricity as a byproduct. She explained that in Russia, the utilidor systems are often above ground due to permafrost issues. She shared her understanding that other areas also utilize above ground utilidor systems.

1:51:28 PM
MS. HOLDMANN advanced to slide 7 and explained that remote communities are largely diesel dependent. Slide 7 contains an image of a diesel power module (foreground) and a shuttered coal plant (background) in Longyearbyen, Svalbard (Norway). Slide 7 highlights that this is the furthest north permanently inhabited settlement in the world. She explained that Svalbard has transitioned from locally sourced coal to imported diesel fuel. She highlighted the flexibility of diesel fuel with respect to integration with renewable energy sources (e.g. solar and wind).

1:52:56 PM
MS. HOLDMANN advanced to slide 8 and discussed the high energy costs that diesel-based communities face. Slide 8 contains a bar chart contrasting the estimated electricity expenditures by Power Cost Equalization Program (PCE) eligibility with those expenditures that are not PCE eligible. Slide 8 also contains a chart comparing the residential electricity prices for Fairbanks, Anchorage, Juneau, and PCE-eligible communities. She stated that one-third of kilowatt hours are covered by PCE; however, this does not mean that one-third of the cost is covered in each community. She explained that PCE covers roughly 15 percent of the cost for generating power in those communities. She pointed out that Alaska has the lowest level of energy price support of all arctic regions.

1:54:53 PM
MS. HOLDMANN advanced to slide 9 and, highlighting Greenland, noted the different strategies and policies used to address the high costs of electric power in the Arctic North:

[Original punctuation provided.]

Varied Price Support for Rural Residents – example from Greenland:

- 70 percent hydro from 5 projects

- "unified rate" is 24 cents/kWh for residents
- Fisheries get a 58.5 percent discount on the local electricity generation costs; equates to rates of 10-24 cents/kWh
- Alaska and Greenland have inverse structures for subsidies – Greenland prioritizes critical industries, Alaska prioritizes residential consumers.

1:56:45 PM
MS. HOLDMANN advanced to slide 10 and highlighted the strategies and policies used to address the high cost of electric power in Canada. She noted the high level of subsidies and how this impacts costs:

[Original punctuation provided.]

Varied Price Support for Rural Residents – example from Canada:

- Canada's utilities are mostly "Crown Corporations." Most use postage stamp rates of some sort.
- Subsidies vary by territory; in Nunavut, for example, low-income residents - who make up approximately 35 percent of the population—pay only $0.06 per kilowatt-hour (kWh) for electricity.

MS. HOLDMANN noted that Canada's high subsidies mean there is less incentive to develop renewables at both the utility and consumer level. To illustrate this, she briefly contrasted wind energy projects in Alaska and with wind-energy projects in Canada.

1:58:20 PM
CHAIR GIESSEL noted that Ontario, Canada has nuclear power and wondered about the cost. She asked whether nuclear power is also subsidized in Canada.

MS. HOLDMANN replied that any nuclear power in Canada is associated with the Canadian connected grid. She provided a brief overview of Canada's nuclear power and noted that Canada's nuclear power resources have been paid off and therefore represent some of the lowest costs on the grid. She clarified

that there is no nuclear energy in the remote parts of Northern Canada.

1:59:16 PM
MS. HOLDMANN advanced to slide 11, containing a chart of the PCE base rate and its components. She explained that the PCE base is the average between Fairbanks, Anchorage, and Juneau. She pointed out that Fairbanks rates greatly exceed the PCE base. Slide 11 states that the PCE base rate is "not the effective rate paid by customers, but the two should be close if eligible costs are close to the residential rate."

2:00:11 PM
CHAIR GIESSEL asked whether achieving postage stamp rates on the Railbelt transmission system would lower the cost of energy in Fairbanks.

MS. HOLDMANN replied that the postage stamp rate only applies to the transmission portion of the cost, which is a small piece of the overall cost. She opined that Fairbanks is more reliant on moving power across an interconnected grid and suggested that a unified transmission rate could result in an increased cost of energy for Fairbanks. She surmised that Fairbanks would benefit from the ability to move cheaper power to Fairbanks. She emphasized the importance of continued construction and Railbelt infrastructure modernization.

2:01:41 PM
SENATOR WIELECHOWSKI opined that the Railbelt needs a large scale (e.g. 500 megawatt or more) hydropower plant. He noted that one opposing argument is that this exceeds the current Railbelt energy usage. He asked whether other countries have seen an increase in industry after building similar large-scale renewable projects - or if it results in excess electricity that is wasted.

MS. HOLDMANN replied that the Pacific Northwest PNW is an excellent example of large hydroelectric projects bringing industry to the region. She noted that those projects guaranteed a postage stamp rate for transmission, to ensure that industry was spread out across the region. She offered Iceland as an additional example of successfully building projects at scale, with industry.

2:03:47 PM
MS. HOLDMANN advanced to slide 12 and discussed Alaska's statewide energy burden. Slide 12 contains a map of Alaska color

coded to illustrate the ratio of average energy costs to median income (household level). She explained that, according to the federal government, energy costs of over six percent of the household income are considered a "high energy burden." She stated that the average household percentage in Fairbanks is ten percent. She noted a few glitches in the infographic and indicated planned updates for the data presented on slide 12. She pointed out that, in some remote areas, average energy costs are 16 percent of the household income. She emphasized that this is high for the country and for the Arctic region.

2:06:04 PM
MS. HOLDMANN advanced to slide 13 and explained that the number of Alaskans for whom energy costs are unaffordable is increasing. Slide 13 contains a bar chart illustrating the results of an Alaska Center for Energy and Power (ACEP) Alaska affordability survey done between 2023 and 2024. She briefly described the survey, which helps illuminate areas of confusion. She then described a series of town hall meetings that provide additional information to the public about those issues. She highlighted a striking increase in the number of respondents in Fairbanks who feel their energy costs are unaffordable. She noted the relationship between the data on slides 12 and 13, which illustrate both the users' perception (slide 13) and the actual energy burden (slide 12).

2:08:14 PM
SENATOR WIELECHOWSKI shared his understanding that, according to slide 12, Matsu has the lowest cost energy burden and asked if this is correct.

MS. HOLDMANN replied that the cost energy burden is lowest for Anchorage area, Matsu, and Southeast. She noted that Southeast is complicated, as there are areas that have a higher cost energy burden. She pointed out that the North Slope also has a relatively low energy burden due to North Slope Borough subsidies.

SENATOR WIELECHOWSKI observed that, according to slide 13, Mat-Su residents feel they have the highest cost energy burden. He contrasted this with the data on Slide 12 and asked Ms. Holdmann to comment on the difference between the perception that Mat-Su residents have high energy costs versus the actual energy burden.

MS. HOLDMANN said that she was somewhat surprised to see the perception of Mat-Su residents and welcomed Senator

Wielechowski's thoughts on the issue. She added that, with the exception of Icelanders, people tend to complain about energy prices. She suggested that the perception of Mat-Su residents could be related to a concern about gas shortages, which means users are paying closer attention to their energy costs. She noted that Southeast (data not included on slide 13) was also trending higher.

2:10:13 PM
MS. HOLDMANN advanced to slide 14 and briefly discussed the Arctic Remote Energy Networks Academy (ARENA):

[Original punctuation provided.]

Alaska leadership in renewables

- Alaska has by far the most renewably powered microgrids of any country in the Arctic.
- Alaska utilities and communities are sharing their expertise in this area (example: Arctic Remote Energy Networks Academy).

2:11:37 PM
MS. HOLDMANN advanced to slide 15 and highlighted the reasons why Alaska utilizes renewables. She briefly commented on Alaska's disaggregated utility structure, which leads utilities to experiment with and develop renewable energy sources. She contrasted this with other Arctic locations which often have a single utility per region. She explained that the Renewable Energy Fund (REF) was a key catalyst for renewables in the state. She offered a brief history of REF. She explained that this program provides funding for projects that do not qualify for federal funding due to the uncommon nature of those projects and the associated risk assessment.

MS. HOLDMAN continued to discuss slide 15. She emphasized that REF funding enabled utilities to demonstrate that renewable energy projects can be done effectively and managed long-term. She highlighted the impact REF has had on projects in rural Alaska. She referenced a chart on slide 15 showing the total operational non-hydro renewable energy projects in PCE-eligible communities alongside annual REF appropriations. She noted that, while REF funding has decreased, the number of installed projects has remained the same. She explained that the number of installed projects in rural Alaska is no longer solely depended on REF funding, as the projects have proven successful.

2:14:05 PM
MS. HOLDMANN advanced to slide 16 and explained that renewables are resulting in lower cost power for users. Slide 16 contains a bar graph depicting cumulative savings from AVEC wind power communities (excluding Bethel and Selawik) (2006-2023). She emphasized that the data on the slide is limited. She explained that wind energy has resulted in significant savings for non-PCE eligible customer classes, along with a significant savings to the PCE endowment. She briefly described the process for savings related to PCE customer classes.

2:15:38 PM
CHAIR GIESSEL asked about geothermal energy. She recalled Ms. Holdmann's work on the geothermal project at Chena Hot Springs. She asked why there is not more geothermal development in Alaska.

MS. HOLDMANN replied that geothermal development and drilling for oil face some of the same challenges. She explained that the upfront exploration costs and associated risk are high. She used Iceland's geothermal drilling fund as an example to illustrate potential risk reduction. She contrasted geothermal risk with wind and solar, which can be measured at the earth's surface.

2:17:36 PM
SENATOR STEVENS asked about the project at Naknek and King Salmon. He recalled a large investment but noted that the project stalled.

MS. HOLDMANN expressed uncertainty about the project. She recalled that experts questioned the decision to drill the well without taking prior, cost-effective steps to determine whether the location held any resource. The utility made an investment of roughly $30 million to drill a well in a location that ultimately did not contain the resource. She commented that that this is a good example of a utility making innovative choices. She explained that utilities in rural Alaska are not rate regulated, which makes these types of innovative decisions possible. She emphasized that the lack of rate regulation can also result in positive innovation and offered a project in Cordova as one example. She briefly described how those projects are approved by the utility board without requiring approval from the Regulatory Commission of Alaska (RCA). She surmised that RCA would not have approve the aforementioned project expenditures at Naknek without a guaranteed benefit. She emphasized that, while this lack of rate regulation sometimes results in failed projects, there are many successful examples.

2:20:18 PM
SENATOR STEVENS commented that the experimental project was highly expensive and has had a lasting impact on the community. He opined that the project's failure holds a lesson about the need for caution and the importance of completing the smaller, investigatory steps prior to drilling a well.

MS. HOLDMANN agreed. She expressed pride in the fact that REF did not fund that project. She pointed out that REF funding requires expert approval, which results in successful projects.

2:21:23 PM
SENATOR WIELECHOWSKI observed that there have been many examples of successful renewable energy projects around the state. He offered Kodiak as one example of wind energy, along with hydroelectric projects in Southeast. He opined that renewable energy in Alaska has not yet reached the tipping point. He asked for ideas and policy suggestions that would help spur renewable energy use in the state. He opined that other countries have benefitted tremendously from renewable energy. He noted that some oil dependent countries are also switching to renewables and offered examples. He surmised that more policy may be needed for Alaska to step further into this field and repeated his request for suggestions.

MS. HOLDMANN replied that, to reach that point, renewables must be at scale. She said Alaska's hydro projects are one example of this. She emphasized that Alaska's disaggregated system makes it difficult to create projects at scale. She highlighted the benefits of innovation and experimentation, which rural communities are doing. She noted discussions to potentially uncouple heating from electric power on the Railbelt grid and opined that the better choice would be to begin heating with electric power. She explained that this would be a long-term goal that requires moving through complex middle ground. She then discussed the difficulties related to cooperation amongst the utilities on the Railbelt, where it is possible to scale projects. She argued that this issue needs to be addressed.

2:24:00 PM
SENATOR WIELECHOWSKI opined that the utilities generally want to find the best solution for their users; however, he agreed that the disaggregation of utilities is a challenge. He wondered if a state policy such as renewable portfolio standards be helpful. He acknowledged that the utilities would likely resist a policy

of this type. He asked for other recommendations if this type of policy would not be helpful.

MS. HOLDMANN shared her perspective that the Railbelt utilities are not opposed to adding renewables, especially if that change is cost-effective for utility members. She explained that the issue lies with the transmission backbone, which needs to be strong enough to move the energy at scale. She offered examples to illustrate this. Currently, smaller projects are piecemealed out to individual utilities and the utilities are not cooperating with projects at scale. She opined that the first step would be to put in the physical infrastructure that would enable the at-scale movement of power between locations. She further opined that a structure that creates a reward rather than a punishment is possible and would be more effective.

2:26:11 PM
SENATOR KAWASAKI noted that funding is limited and asked where Alaska should invest its money for the highest return on investment.

MS. HOLDMANN acknowledged that funding from the State of Alaska is limited and costs are ultimately paid by Alaskans. She emphasized the importance of seeing a return on investment that is related to structural progress and results in a long-term benefit. She agreed with Senator Wielechowski's comment that the utilities are looking after their members' best interest and opined that this is what they should be doing. However, she pointed out that the system is not set up to force utilities to collaborate. She stated that infrastructure improvements are needed to support Grid Resilience and Innovation Partnerships (GRIP) transmission projects. She wondered about the types of requests that would be possible with legislative support for those projects.

2:28:22 PM
SENATOR KAWASAKI recalled recent debate about the small modular reactor at Eielson Airforce Base. He asked Ms. Holdmann to comment on small modular reactors across the state.

MS. HOLDMANN acknowledged that she is biased with respect to nuclear power, as she has been working on nuclear energy since 2008-2009. She noted that this research began at the legislature's request. There have been many advancements since that time. She opined that one challenge is that society in general tends to see the current energy source as the future energy source. Currently, there is a focus on gas for future

energy; however, she opined that Alaska has the potential to become a leader in nuclear energy. She further opined that this could extend beyond microreactors to a size that could power the Railbelt grid. She suggested considering alternatives and options for augmenting proposed solutions. She asserted that nuclear energy will be part of the worldwide energy future. She said the reactors are different from what was used previously and have improved safety features. She opined that nuclear energy is worth considering but acknowledged that it is difficult to find a path forward.

2:30:28 PM
SENATOR STEVENS commented that Alaska has a blend of isolated, rural communities and those that are more centrally located and connected to the Railbelt. He briefly discussed a project in Kodiak that was made possible through funding from the State of Alaska. He said that Kodiak was able to utilize both wind and hydro power and explained how each supports the other. He pointed out that 80 percent of the population is on the Railbelt and opined that addressing the Railbelt is the next big project. He asked for a definition of "disaggregated."

2:31:36 PM
MS. HOLDMANN replied that the state does not have an interconnected grid and is therefore disaggregated in terms of physical infrastructure. The term "disaggregation also applies to the ways utilities are owned and operated. She commented that this is very unusual. She said that, in Alaska, the average number of customers per utility is 2500 and commented that this is a very small number. She noted that some cooperatives are pooling smaller communities together. She said she has been researching the value gained from coordinating across multiple communities. She shared that, in one instance, there is a benefit of nearly $4 million per year.

MS. HOLDMANN opined that pooling resources across communities would provide power and savings; however, Alaska has not done this effectively. She opined that this is a strength and a weakness of the system. She offered Kodiak as one example of an organization that has worked over many years to create a successful system.

2:34:02 PM
SENATOR STEVENS expressed his appreciation and pride for Kodiak's successes. He wondered how to reach the larger population. He pointed out that Kodiak cannot send power to the Railbelt. He commented that island communities are isolated and

noted past mistakes. He opined that the lesson is to practice caution when choosing projects and make good financial decisions.

MS. HOLDMANN agreed but noted the role of risk and reward in these processes. She also noted that delaying projects for too long can result in diminishing returns.

2:35:09 PM
CHAIR GIESSEL turned the discussion to geothermal energy. She recalled that Denmark injected water into soil and derived sufficient heat to be of benefit. She asked whether Alaska could replicate this process.

2:35:29 PM
MS. HOLDMANN shared her understanding that the Naknek project attempted to replicate this. She explained that geology is one major consideration. She shared her understanding about the Denmark project and offered details to illustrate the process. She opined that it is a brilliant strategy; however, Alaska does not have the types of geologic formations that would make that process successful. She pointed out that Denmark used oil and gas discovery mapping to determine the depths for that project. She briefly described the process as she understands it.

2:37:09 PM
CHAIR GIESSEL turned the discussion to clean hydrogen, which Norway has produced. She noted a potential policy that would permit a large wind project to generate hydrogen, which would be turned into ammonia for export. She surmised that, given its location, this project could power a small transmission grid. She asked if Ms. Holdmann is familiar with that project and whether she has any suggestions.

MS. HOLDMANN replied that interconnecting communities and building projects at scale is a strategy that AVEC is pursuing. She said AVEC is building wind at scale (e.g. 900 Kw wind turbines) and sending the energy to multiple communities. She opined that this is a smart strategy. However, the clean hydrogen project is different, as it is a mega-renewables project. She stated that she does not have the knowledge to speak about this in depth. However, she commented that Alaska has previously worked out long-term arrangements with a renewables vendor that ultimately do not turn into developed projects. She briefly discussed her work with carbon capture and sequestration (CCS) and the structure of those agreements. She suggested developing similar agreements that would restrict

timelines and impose penalties. She opined that this would protect the State of Alaska. She stated that there many good examples of large-scale projects that have successfully connected communities.

CHAIR GIESSEL opined that those recommendations are wise. She noted that Cordova Electric will be presenting at a future meeting.

2:41:08 PM
There being no further business to come before the committee, CHAIR GIESSEL adjourned the Senate Special Committee on Arctic Affairs meeting at 2:41 a.m.