**ALASKA STATE LEGISLATURE**
**SENATE SPECIAL COMMITTEE ON IN-STATE ENERGY**
February 21, 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 Cathy Giessel

**COMMITTEE CALENDAR**

PRESENTATIONS: ALASKA INDEPENDENT POWER PRODUCERS

- HEARD

**PREVIOUS COMMITTEE ACTION**

No previous action to record

**WITNESS REGISTER**

DUFF MITCHELL, Executive Director
Alaska Independent Power Producers Association (AIPPA)
Business Manager
Juneau Hydropower, Inc.
Juneau, Alaska
**POSITION STATEMENT**: Provided an overview of AIPPA and the Sweetheart Lake Hydroelectric Project.

MIKE CRAFT, Owner
Delta Wind Farm
Fairbanks, Alaska
**POSITION STATEMENT**: Provided an overview of the Delta Wind Farm.

ETHAN SCHUTT, Senior Vice President

Cook Inlet Region, Incorporated (CIRI)
Fire Island Wind Farm
Anchorage, Alaska
**POSITION STATEMENT**: Provided an overview of the Fire Island Wind Project.

BOB GRIMM, CEO
Alaska Power & Telephone
Port Townsend, WA
**POSITION STATEMENT**: Provided an overview of Alaska Power & Telephone's alternative energy projects.

JOEL GROVES, Project Manager
Fishhook Renewable Energy, LLC
Anchorage, Alaska
**POSITION STATEMENT**: Provided an overview of Fishhook Renewable Energy's hydroelectric project.

**ACTION NARRATIVE**

7:30:02 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 Micciche, Egan, Wielechowski, Co-Chair Coghill and Co-Chair Bishop.

CO-CHAIR BISHOP welcomed Senator Giessel to the committee meeting.

**PRESENTATIONS: Alaska Independent Power Producers**

7:30:48 AM
CO-CHAIR BISHOP announced that the order of business would be overviews from the Alaska Independent Power Producers Association (AIPPA) by the following individuals:

- Duff Mitchell, AIPPA Executive Director and Business Manager for Juneau Hydropower, Inc.
- Mike Craft, Delta Wind Farm.
- Ethan Schutt, CIRI-Fire Island Wind Farm.
- Bob Grim, CEO, Alaska Power & Telephone.
- Joel Groves, Fishhook Renewable Energy, LLC.

7:31:44 AM

DUFF MITCHELL, Executive Director, Alaska Independent Power Producers Association (AIPPA), and Business Manager, Juneau Hydropower, Inc., thanked the committee for allowing AIPPA to provide their insights and understanding from Alaska's leading private power producers. He said AIPPA would share their vision for energy opportunities, challenges, and solutions facing the development of domestic power in Alaska's local economies.

MR. MITCHELL said AIPPA developers and operators invest in Alaska and take the risk away from public utilities. He explained that to date, AIPPA had collectively invested millions of dollars and created hundreds of jobs in Alaska.

7:34:34 AM
He said AIPPA's role was providing private resources, know-how, and hard work to make energy happen. He explained that competitive power created a market force that produced the public-benefit to stabilize and reduce energy prices over time. He said AIPPA's renewable resources were derived from wind, hydropower, tidal, and natural gas.

He said AIPPA helped Alaska by providing private-dollars to assist in the public benefit of developing power for Alaskans. He explained that Independent Power Producers (IPP) would continue to put up the development and risk monies at no expense to the utilities or rate payers. He stated that IPP's actions allowed utilities to use their resources to keep up on maintenance, reliability, and operations. He said IPP had to compete at the wholesale level and therefore had no choice but to understand their local markets to find solutions and wisely invest their monies. He detailed that IPP hired local environmental scientists, permitting personnel, construction employees, and provided operational jobs that paid wages to raise one's families on. He said energy projects typically had a life of 20 to 50 years and IPP had no choice but to understand the long term view of developing Alaska's energy resources to eliminate diesel generation dependency. He declared that AIPPA was a team player with the state and local utilities. He noted that AIPPA was at times the assisters or the drivers in assisting Alaska in meeting an energy goal for 50 percent renewable energy by the 2025.

He stated that Alaska's enormous energy potential was virtually untapped. He said Alaska's resource potential could be unlocked with the right regulatory regime, attitude, and direction. He remarked that Alaska did not have the funds or ability to "do it all" with finite financial resources. He noted that Alaska did

have the ability to encourage private investment and development to help fill the financial gaps. He explained that IPP generated 38 percent of the nation's net power generation, in Alaska it was 3 percent.

7:39:10 AM
SENATOR MICCICHE asked how an independent power producer was defined.

MR. MITCHELL answered that IPP put up their own money and develop their projects with the intent to sell to local utilities at a wholesale rate. He explained that IPP privately competed to entertain what a utility could normally produce themselves. He stated that the burden was on the IPP to produce energy more cheaply than local utilities. He specified that IPP were completely private and allowed to apply for state grants.

He stated that Alaska had some of the nation's highest energy costs and economic potential in resource development could not be realized unless energy prices were reduced. He said high energy costs affected residential, commercial, industrial, and transportation sectors. He remarked that Alaska's industries were electricity intensive and noted electricity accounted for 30 to 40 percent of the mining industry's costs. He said the fish processing industry's energy use for freezing and canning were large operational costs. He noted extensive energy use by government buildings, schools, timber industry, and military bases.

He explained that high cost energy communities had become more and more dependent on government services. He said a community without jobs had no economy and that led to more dependency. He stated that high energy costs sometimes repelled or discouraged economic development. He said the Bush had been ravished by high cost energy and the word "crisis" was appropriate in certain parts of Alaska.

He declared that energy problems were only going to get worse as the state dealt with declining oil revenues and programs such as Power Cost Equalization (PCE) were dependent on funding from oil revenues. He said AIPPA believed that Alaska's economy could be diversified from the oil sector and allow other electrical resources to be developed as a foundation for Alaska's future economy.

He reiterated that Alaska had the resources and IPP had the know-how, private sector funding, and financial capital ready to

develop energy projects if access to markets was available. He stated that man-made problems could be man-solved. He noted that the Chinese word for "crisis" was composed of the symbols for "danger" and "opportunity." He stated that AIPPA did not want to solely point out the dangers of where Alaska was at, but to also point out the opportunities as well.

MR. MITCHELL said Alaska's elected leaders had wisely enacted a State Energy Policy (SEP) to aggressively achieve 50 percent renewable energy by 2025. He explained that Alaska had energy policies that required private energy development in addition to directing fiscal and regulatory regimes to support private energy development.

7:44:06 AM
He said the next opportunity was to transform SEP into state statutes and directives. He stated that consideration should be given for positive actions and steps for updating statutes and regulations to fit the state's aggressive energy policy. He asserted the need for the wholesale energy market to open up via access to publically financed transmission lines.

SENATOR MICCICHE commented that he would like to receive off-line information from Mr. Mitchell on his ideas and objectives for the state's evolving energy outlook in addition to thoughts on how the Regulatory Commission of Alaska (RCA) could be updated effectively. He noted that AIPPA was moving in a logical direction.

MR. MITCHELL responded that he would provide additional information.

SENATOR EGAN asked if AIPPA's companies had any problems dealing with and reaching system tie-in agreements with municipal cooperatives or private entities.

7:46:19 AM
MR. MITCHELL replied that good working relationships were required with the utilities and cooperatives. He explained that RCA could be improved to help facilitate relations. He remarked that IPP only accounted for 3 percent of the state's energy use and that was an indication that room for improvement existed.

SENATOR EGAN asked if AIPPA found that some utilities and cooperatives gave a push-away feeling and required convincing.

MR. MITCHELL answered that there was a little bit of the control aspects. He explained that AIPPA came to the market from an economic aspect to save money and reduce costs. He expressed that a prudent business should be willing to at least listen and engage. He noted that at times if a business entity was not working under market forces, the same motivation might not exist that would otherwise be natural. He stated that he did not want to mischaracterize things, but IPP had to compete in the same way as utilities and cooperatives. He explained that at times IPP had to convince buyers when their power was cheaper.

SENATOR EGAN stated that the Fire Island Complex dealt with initial "pull back."

MR. MITCHELL replied that individuals from Fire Island would be providing their overview in the meeting and could provide additional insight.

CO-CHAIR COGHILL noted that analysis would be done to see if access barriers were built by the RCA or state statutes.

7:49:57 AM
SENATOR GIESSEL stated that a public utility was required to assume responsibility for the power and received a certificate of public necessity and convenience. She said a public utility was held responsible if power went out. She asked what happened to public utilities that agreed to purchase IPP power and the IPP's power generation went down.

MR. MITCHELL responded that contractual obligations would require IPP to prove reliability with engineering backup. He stated that intermittent power like wind and tidal may have different types of power sales agreement with a utility than a "firm power" source from hydro or geothermal. He said IPP would be required to be reliable when contractually obligated.

CO-CHAIR BISHOP asked Mr. Mitchell to include him in his discussion with Senator Micciche.

7:52:09 AM
MIKE CRAFT, Owner, Delta Wind Farm (DWF), said DWF was a project located in Delta Junction and within the Golden Valley Electric Association (GVEA) service area. He explained that he got involved with DWF because he saw an opportunity. He said five years ago he saw the economy starting to fail in Fairbanks, real estate development had dropped and that was what he did for a living. He said he saw renewable energy as an opportunity to

stay engaged in the market. He explained that he partnered with several businessmen in Fairbanks and put together Alaska Environmental Power.

MR. CRAFT said he was a person that looked for opportunities and liked to come up with solutions. He stated that Fairbanks and the Interior were facing an unprecedented energy crisis. He noted that people were leaving the area due to high energy costs.

He said it became apparent to him that once he started to look at DWF, it was going to be a key component to what was happening in the Interior with respect to stabilizing energy costs and creating jobs. He stated that Fairbanks' current energy status had literally become a matter of life and death for a lot of people due to respiratory problems from poor air quality. He stated that Fairbanks did not know if their future energy was going to come from the Dalton Highway, bullet-line, gas generated power from Anchorage, or the Healy Clean Coal Power Plant (HCCP). He noted that Fairbanks would have saved $650 million in rate savings if GVEA was operating HCCP since 1999.

7:56:58 AM
He declared that Fairbanks energy costs were 143 percent higher than the national average. He addressed energy cost's impact on military bases in Fairbanks. He stated that access to low cost energy had a larger impact on the military individuals and families that lived off-base. He said it was difficult for individuals to survive on a military pay-grade in Fairbanks.

He addressed Fairbanks' "brown haze" pollution caused by population density and atmospheric thermal inversions. He said Fairbanks could not dissipate particulates generated by the Aurora Power Plant located downtown, the Fort Wainwright Coal Plant, and the University of Alaska-Fairbanks (UAF) Coal Plant. He noted that Fairbank's coal plants were located within a seven mile area and within the Environmental Protection Agency's (EPA) non-attainment area. He added that GVAE's diesel power plant and the North Pole Refinery also contributed to Fairbanks' pollution issue.

He explained that one of his biggest concerns was that GVEA annexed Livengood to power a gold mine. He noted that Livengood's gold mine would require 100 megawatts (MW) of power with the electricity generated at the North Pole Refinery, a 33 percent increase in production in the non-attainment area. He said one of the reasons GVEA used as a reason for not accepting

the DWF project was due to decreased customers and a shrinking grid, but GVEA was potentially increasing capacity by 33 percent for a mining operation while increasing emission levels.

8:00:59 AM
MR. CRAFT showed the committee a photo displaying a cloud of haze and smoke over Fairbanks.

He stated that when he was looking at renewable energy, no one else was doing it. He said he bought five Skystream wind turbines and placed them on the Parks Highway and referred to it as Windworks 101, an $80,000 class. He explained that the Skystream turbines were erected during the middle of winter and the installation told him that wind energy was totally possible. He noted that he looked at all of the issues with the electricity generated from the Skystream turbines for frequency on the grid, voltage regulation, and dealing with GVEA. He said after the Skystream installation, Alaska passed the Renewable Energy Policy and he interpreted the legislation as a green-light for the private sector to be involved and he created DWF. He said he believed that additional room would be available for DWF to play in the energy market because the RCA was told to develop a regime that would entice the private sector. He declared that the energy market changes he had hoped for did not happen for the private sector.

He explained that the DWF Project was in its fifth year. He said a proposition was made to GVEA in 2011 and the end result would have saved GVEA $80 million over the 20 year life of the contract. He detailed that his proposition offered electricity to GVEA for $0.1250 per kilowatt hour (kWh) for 20 years flat. He noted that GVEA's current average cost was $0.1320/kWh. He explained that GVEA's highest energy cost facilities were the Aurora Plant at $0.3600/kWh and the North Pole Refinery at $0.1950/kWh.

He said DWF was a $54 million project that would create 200 direct construction jobs, provide wind turbine technician jobs, and was fully permitted on a 320 acre site in an industrial area with road access. He disclosed that GVEA turned the DWF proposition down and limited the project to 2 MW, a level where scale of economies did not work.

8:04:30 AM
He explained that one day of 25.5 MW service from DWF would save GVEA $52,000 and conserve 37,500 gallons of diesel fuel. He declared that DWF could add 25.5 MW of electricity to the

Interior, do it immediately, and do it for a lot less than what was being done with oil.

MR. CRAFT explained that Fairbanks was facing an issue that required an EPA Mitigation Plan to be in place by 2014 or serious issues would result with highway funds and other federal support. He asserted that DWF would help with Fairbanks' EPA Mitigation Plan. He revealed that 4 million gallons of diesel per year could be taken out of the environment, saved, and used somewhere else in the market.

He said there was no need to build additional power transmission lines for DWF. He explained that the Jarvis Creek substation was three and a half miles away from the DWF site with an open-bus on the 138 kilovolt line that went straight to Fairbanks. He noted that the added power would maximize the transmission line to Fairbanks and increase efficiency by seven percent without having to upgrade the power lines.

He stated that DWF's ancillary benefits would include bringing materials through the port of Valdez, shipping via Alaska West Express to Fairbanks, procuring 800 truckloads of concrete to build 16 wind turbines, and other indirect service jobs.

8:07:55 AM
He noted that Alaska had already invested in DWF by stating the following:

> When we bought the 320 acre site, we put up a 100 kW turbine on our own, that was when I realized the problems we were going to have with GVEA accepting our project and willingness to do business with us. When HB 152 came out, we decided to get the state involved in this because we felt like what was happening was not right. So we applied for a matching grant for $2 million and put up a EWT-900 wind turbine. We tried to involve the Alaska Energy Authority (AEA) and the Alaska Industrial Development and Export Authority (AIDEA) in the negotiations with GVEA so that the state could get an idea of the difficulties we were facing as an independent power producer coming on line and dealing with a utility. I want to thank the State of Alaska for allowing us that opportunity through HB 152 and the turbines we have developed there. We are using Skystreams, the Northern-100, and the EWT-900; all of that technology has been used in the villages and in remote communities. The technology that we

developed, the manufacturers that we brought to Alaska, all that technology got shared with the rest of the state, so we feel good about that.

SENATOR GIESSEL said she understood that wind turbines operated in a fairly narrow wind speed parameter, if the winds were too slow or high they would shut down. She asked if Mr. Craft had a graph that showed what the wind looked like and what power was reliably generated over the past year.

MR. CRAFT answered yes. He explained that DWF did a three year wind study using a Met Tower and a program called Windographer, a tool used to analyze wind resources. He explained that DWF was looking at a 30 percent capacity factor and that meant an average of 300 kW would come from a 900 kW turbine. He noted that wind turbines were only at 100 percent capacity approximately 3 percent of the year. He stated that electricity was generated on DWF's 900 kW turbines when wind speeds ranged from 6.5 miles per hour to 60 miles per hour. He explained that turbines go into an environmental shutdown when wind speeds exceeded 60 miles per hour. He noted that high wind speeds were not typical in Delta Junction; the average wind speed was approximately 15 miles per hour. He said Delta Junction was different from other wind regimes due to barometric variances from its inland location rather than coastal locations that were influenced by storms.

8:11:55 AM
CO-CHAIR COGHILL said DWF may have a barrier with GVEA due to its energy supply variance. He noted that GVEA would have to run their turbine in the North Pole area to modulate DWF's wind and asked if that was a power agreement hang-up.

MR. CRAFT responded that GVEA required DWF to do an Integration Study (IS). He explained that DWF's $100,000 IS was defined by GVEA and showed DWF's modulation would swing the grid 10 MW in 10 minutes, GVEA's Eva Creek Wind Farm (ECWF) would swing the grid at 25 MW in 10 minutes. He said DWF would be easier to integrate due to a lack of wind variations. He noted that the GVEA's North Pole Refinery would be the perfect swinging reserve because like a car, the power could be throttled up and down. He disclosed that a coal plant would be more difficult to vary due to the need to get temperature and steam pressure up. He pointed out that ECWF would be an excellent complement due to its location in another wind regime, approximately 200 west of DWF. He explained that times when ECWF was not windy, DWF was windy.

He summarized that DWF could be a spinning reserve for ECWF, a point that was brought up in the IS.

CO-CHAIR COGHILL asked if it was cheaper for GVEA to buy power from DWF rather than GVEA producing at a base-load-power.

MR. CRAFT replied yes.

CO-CHAIR COGHILL inquired if GVEA's savings would overcome the cost of maintenance caused by throttle variance at their North Pole Refinery.

MR. CRAFT responded that there would be a $0.0250/kWh variance cost and DWF's total cost would be $0.1500/kWh. He stated that $0.1500/kWh power was less than GVEA's incremental voided cost of $0.1950/kWh in addition diesel fuel conservation.

CO-CHAIR COGHILL asked if DWF was able to get a docket before the RCA to explain the information that was just presented to the committee.

MR. CRAFT answered no. He explained that he had applied for a Certificate of Public Convenience for 25.5 MW and the RCA allowed GVEA to be the gatekeeper. He divulged that GVEA was only willing to provide DWF with a 2 MW capped sales agreement. He asserted that because GVEA would not give DWF a contract, the RCA decided it was not in the public's interest to have 25 MW of wind power in Delta Junction.

8:15:27 AM
SENATOR EGAN asked to clarify that DWF's issue was with GVEA and RCA.

MR. CRAFT answered yes. He said the RCA basically told DWF that the state energy policy decided by the legislature was "aspirational."

CO-CHAIR BISHOP asked if the RCA's comment was in writing.

MR. CRAFT answered yes.

MR. MITCHELL explained that RCA's comment was in a transcript.

SENATOR EGAN asked if the committee could receive the transcript.

MR. MITCHELL clarified that an attorney from a utility made the "aspirational" comment on the energy policy. He said correcting the RCA would require statute change.

CO-CHAIR BISHOP asked that a transcript copy be provided to the committee.

SENATOR EGAN asked if DWF was receiving cooperation from AEA.

MR. CRAFT responded that AEA was not in a position to deal with the situation between DWF and GVEA, but noted that AEA had not addressed the situation. He explained that AEA's job was to find projects.

8:17:41 AM
ETHAN SCHUTT, Senior Vice President, CIRI-Fire Island Wind Farm, addressed the prior RCA discussions. He said the RCA viewed itself as a body that enforced rate making and reviewed rate cases. He explained that the RCA also reviewed propositions for the creation of new utilities or the addition of authority to certificate utilities. He said the RCA only reviewed the fitness of utilities to have a certificate at the initial point and he had never seen the RCA take a case where they reviewed the fitness of a utility to continue to provide service unless there was failure to provide power. He said the RCA viewed its role very narrowly via the statutes that the legislature had passed. He said the legislature would have to change the RCA's responsibilities to address market oversight.

8:21:11 AM
MR. SCHUTT explained the Fire Island Wind Project (FIWP) as follows:

- FIWP produced 18,039 megawatt-hours (MWh) of electricity.
- Caused no electrical system operational issues going to the integration of a commercial wind project.
- Saved Chugach Electric Association (CEA) approximately 196 million cubic feet of Cook Inlet natural gas.

He explained FIWP data from January 2013:

- Produced 6,812 MWh of electricity.
- Average wind speed for the month was 19.0 mph.
- Predominant north wind.

He said FIWP's highlights were as follows:

- 25-year contract with CEA.
- Flat net price of $97/MWh, $0.0970/kWh.
- $65 million of private investment in the Anchorage energy market.

MR. SCHUTT explained FIWP's facts as follows:

- 11 General Electric (GE) XLE 1.6 MW wind turbines with total project nameplate capacity of 17.6 MW.
- Expected to annually generate 51,000 MWh.
- Primary production months would be November through March.
- Annual average for FIWP's net capacity factor was 32.5 percent.

He addressed the Fire Island site selection as follows:

- Wind resource was identified.
- Proximity to grid and load.
- Minimal environmental impacts.
- Lack of conflicting land uses.
- Available land for construction.

8:24:14 AM
He addressed FIWP's history as follows:

- CIRI obtained Fire Island property in the 1980s.
- Wind resource studied in 2000 by a utility group led by CEA.
- CIRI became the project developer in 2005.
- Key permits issued in 2009.
- Federal Aviation Administration (FAA) issues were addressed in 2009.
- Preliminary construction in 2010.
- CIRI received permits with project financing in 2011.
- RCA approval for CIRI's contract with CEA in 2011.

He explained the FIWP layout on Fire Island as follows:

- 11 commercially operating turbines.
- 22 additional turbine sites available for development.
- Additional infrastructure to support the first phase operation and maintenance building, electric power system, and roads.

He addressed FIWP's 2011 project timeline as follows:

- FAA determination of no hazard issued.
- Commercial contracts and Power Purchase Agreement (PPA).
- RCA approval of PPA.
- Project financing closed.
- On-shore transmission line construction.

MR. SCHUTT explained FIWP's 2012 project timeline as follows:

- On-island civil and electrical construction.
- Finished transmission interconnection.
- Erected wind turbines on Fire Island.
- Project commissioning completed and commercial operation began September 2012.

He addressed FIWP's transmission line as follows:

- 3.1 miles of two parallel 34.5 kilovolts submarine cables.
- 8.6 miles of terrestrial transmission lines, 3 miles on Fire Island and 5.5 onshore to get from Point Campbell to the International Substation.

8:26:24 AM
He summarized FIWP construction as follows:

- Delaney Construction Group (DCG) was the Engineering, Procurement, and Construction (EPC) contractor.
- DCG was a Tetra Tech company and constructed utility scale wind projects in Alaska and the Lower 48.
- Significant subcontracts with local contractors, vendors, and service providers.
- Significant activity at Port of Anchorage and Port MacKenzie.

He provided wind turbine information as follows:

- Blade length was 131 feet.
- Hub height was 262 feet.
- Turbine rotational speed was 10 to 19 revolutions per minute (RPM).
- Turbine foundation was steel reinforced concrete.

He presented the committee with a graphic that showed FIWP's turbine height perspective versus Anchorages downtown buildings: FIWP at 262 feet, Conoco-Philips Building at 296 feet, and Atwood Building at 265 feet.

8:30:33 AM
MR. SCHUTT summarized that FIWP was difficult to accomplish, but noted the early operational phase had gone well. He stated that CIRI had a good working relationship with CEA with CEA realizing the value of a non-gas resource within their system. He conceded that FIWP's power was intermittent and not the easiest resource for CEA to handle. He explained that FIWP's intermittent power required coordination for hourly and daily wind predictions. He said CIRI's hope was to build additional projects on Fire Island.

SENATOR EGAN asked when FIWP would pay off.

MR. SCHUTT replied that the debt on FIWP was 20 years with the cash-equity component at nine or ten years. He explained that CIRI had a flat-net price agreement for 25 years and retained operational risk for major maintenance issues. He explained that one of the major maintenance issues pertained to gearbox replacement that was projected to occur a little more than once per turbine. He said gearbox replacement was an expensive maintenance process and CIRI had a capital reserve built up over FIWP's early years to fund anticipated gearbox replacement. He noted that excessive gearbox replacement beyond projections would have a significant impact on CIRI's returns in FIWP's later years. He explained that CIRI's contract with CEA benefited its customers by shifting risk of loss to a private party. He stated that CIRI accepted the major maintenance risk knowingly and based their decision on GE's input. He commented that risk shifting was good for the market place and allowed a utility to avoid rolling risk costs into their rate base.

8:33:32 AM
CO-CHAIR BISHOP summarized that CIRI owned FIWP and sold electricity to CEA for $0.0970/kWh for 25 years.

MR. SCHUTT answered correct.

CO-CHAIR COGHILL stated that another risk factor was related to FIWP's power intermittency for CEA. He asked what the power sales agreement on CEA's cost of ramping up and down to follow FIWP.

MR. SCHUTT replied that CIRI and CEA had a reciprocal intermittency payment of $0.01/kWh. He explained that $0.0970 was a net price to CIRI and the $0.01/kWh was considered additional to cover the integration operational issues to CEA.

CO-CHAIR COGHILL recalled a debate on FIWP's transmission line and the state's contribution towards the project. He asked who had responsibility for other parts on FIWP's transmission line.

MR. SCHUTT answered that the state made a $25 million appropriation to construct FIWP's transmission line from the project to the system. He said CIRI built the transmission line and was in the process of turning over the line to CEA. He explained that CEA would own and operate the transmission line during for the 25 year life of FIWP, the same as the power purchase agreement. He said the transmission line cost was a little more than $25 million and CIRI funded the remaining amount.

CO-CHAIR COGHILL summarized that the state kept the cost from going above $0.09/kWh.

MR. SCHUTT responded correct. He said the state basically built the transmission interconnection and CIRI asked for the appropriation to buy-down the cost of power to CEA. He explained that the state had previously participated with appropriations that were similar to FIWP's transmission interconnection.

CO-CHAIR COGHILL replied that the state also participated in the transmission line for GVEA's northern end. He noted that access was one of the problems with DWF and asked if access was a problem for FIWP.

MR. SCHUTT answered that access was not a problem. He said FIWP's transmission line came into a substation that was jointly owned by CEA and Anchorage Municipal Light & Power. He noted that the substation puts the power from the new Southcentral Power Project (SPP) into the grid. He explained that the legislature also participated in GVEA's wind project by effectively building their interconnection substation.

CO-CHAIR BISHOP noted that everyone was interested in how to save either natural gas for Cook Inlet or fuel oil in Fairbanks.

8:37:37 AM
BOB GRIMM, CEO, Alaska Power & Telephone (AP&T) Company, addressed creating an IPP market with access to domestic and

export markets. He said IPP required the transmission system to be open-access with a level playing field in order to provide an energy cost benefit for Alaska.

MR. GRIMM said AP&T was unique due to being an independent power producer and a regulated utility. He explained that AP&T was investor owned with the majority owned by 123 employees. He explained that AP&T consisted of experienced project identification people with 17 years of operational experience on newly built hydroelectric projects. He said AP&T's professional engineering staff consisted of an aggregate 199 years of energy industry experience. He noted that AP&T had been operating in Alaska for 55 years and started in Skagway in 1957.

He stated that AP&T demonstrated its ability to identify, design, and build cost competitive hydroelectric projects. He said AP&T had built and operated two storage and two Run-Of-River (ROR) hydroelectric projects using the IPP model with additional projects planned for the future. He detailed that AP&T's energy mix started at 95 percent diesel and was currently at 70 percent renewable hydroelectric in just 16 years.

He addressed AP&T's future IPP projects as follows:

- 5 MW project near Hydaburg on Price of Wales Island, a joint venture between AP&T and Haida Corporation.
- 9.6 MW Mahoney Lake Hydro Partnership of City of Saxman, Cape Fox Corporation, and AP&T. He said the intent was to have the project sell into the Southeast Alaska Power Agency (SEAPA) system.
- 77 MW project near Hyder with the intent to be the first project in Alaska to connect to the North American electricity grid and export power out of Alaska.
- AP&T was performing development work on Kootznoowoo's Thayer Creek Hydro project in Angoon.

8:41:38 AM
He addressed a study by UAF's Alaska Center for Energy and Power (ACEP). He said ACEP's study was funded by the National Renewable Energy Lab and published in June 2012. He said the study's subject was on stranded renewable energy in Alaska and quoted the following:

> Alaska is home to significant renewable energy resources. Geothermal, wind, tidal, wave, hydro, solar, and biomass resources have the theoretical potential to not only meet the majority of Alaska's

> in-state needs, but also provide tremendous economic and strategic opportunity for the state and the nation. Despite the many opportunities for developing these resources, there are also significant barriers. Foremost among these challenges is the fact that many Alaska renewable energy resources are stranded, just like our natural gas on the North Slope. The study went on to identify that Alaska had 677 megawatts of geothermal. Alaska has the largest amount of class-seven wind, which is the best. In the United States, Alaska possesses 90 percent of the tidal potential and 50 percent of the wave energy potential of the nation. Alaska also has tremendous hydro power potential with a well-researched amount that is developable.

MR. GRIMM said an important observation was that the renewable resources were currently stranded. He explained that Southeast's resources were unique due to its shared boundary with Canada and power connections currently existed. He noted Southeast's road connections to Canada via Haines, Skagway and Hyder. He revealed that Hyder was served by British Columbia (BC) Hydro and had the lowest rates in Alaska. He divulged that an undeveloped transportation corridor had potential near Wrangell due to a nearby transmission extension by BC Hydro. He stated that the barrier to un-strand Southeast's renewable resources was timely and affordable.

8:44:29 AM
He summarized that Southeast had significant energy resources that were documented. He said the barrier to development of the stranded renewable energy resources were small compared to the other areas within the state. He explained that a new renewable industry would diversify Southeast's struggling economy and create new green jobs.

CO-CHAIR BISHOP said the day's overviews had touched on Interior, Southcentral, and Southeast. He stated that each region had its own assets to lower energy costs, but there were no silver-bullet solutions.

8:46:49 AM
JOEL GROVES, Project Manager, Fishhook Renewable Energy (FRE), addressed the Fishhook Creek ROR Hydroelectric Project (FCHP) in Southcentral.

MR. GROVES explained FRE's background as follows:

- A limited liability company formed in 2006 for the sole purpose of pursuing FCHP.
- Owners consisted of five long-time Alaskans and professional engineers who specialized in small hydro development.
- An aggregate of over 100 years of experience in designing, building, and operating renewable energy systems.

MR. GROVES addressed FCHP's hydro experience as follows:

- ROR hydroelectric project in Seward, a 5 MW project on Fourth of July Creek located behind the Spring Creek Correctional Facility, currently in the feasibility stage.
- Consulting on Indian River in Tenakee Springs.
- Consulting on Packers Creek in Chignik Lagoon on the Alaska Peninsula.
- Design and upgrade of Pelican Creek on Chicagof Island.
- McRoberts Creek, the first independent power producer on the Railbelt near Palmer, a 100 KW ROR hydro project that has been in operation since 1991.
- Design for Chuniisax Creek in Atka that was commissioned in December 2012, a 250 KW project.
- Several FCHP owners also owned South Fork Hydro Project, another Railbelt independent power producer project in Eagle River, a 1.2 MW project currently under construction that was scheduled to be operational by the summer of 2013.
- FCHP owners had worked on 20 projects throughout Alaska involving engineering work, reconnaissance studies, feasibility studies, permitting, design, construction, operations, and regulatory compliance.

8:49:20 AM
He explained the proposed FCHP as follows:

- 24-inch, 7,800 foot long penstock with 1,000 feet of vertical head.
- 2 MW installed capacity that would provide full electrical service to approximately 1,000 homes.
- Power would be sold to Matanuska Electric Association (MEA) to offset their existing and future natural gas fuel needs.

He explained that FCHP would be located in the Talkeetna Mountains' Hatcher Pass, approximately 60 miles northeast of Anchorage. He said Fishhook Creek drained the basin where Independence Mine was located, Mile 16.5 on Hatcher Pass Road.

MR. GROVES explained that the FCHP's penstock route would follow Fishhook Creek for several thousand feet and then head overland down to the historic mouth of Fishhook Creek where the powerhouse would be located with a half-mile underground power-line extension to the existing MEA power-line.

SENATOR MICCICHE addressed Alaskans talking about the move to renewable sources for energy throughout the state, yet two projects were stymied because of environmental concerns on streams that did not have anadromous fish. He asked how FCHP received their permits and what struggles were possible in moving forward with hydro in the future.

MR. GROVES replied that FCHP was still in the permitting phase. He noted that permitting with fish for ROR hydroelectric plans were project specific. He explained that projects could be large with minimal fish impact or small with significant fish impact. He said an example was the Indian River Hydroelectric Project (IRHP) in Southeast near Tenakee Springs. He explained that IRHP had proven to be a real win-win for the community in providing low cost renewable energy. He noted that design changes were made to IRHP's fish-pass to enhance the coho salmon fishery. He noted on the other end of the spectrum was the Packers Creek Hydroelectric Project (PCHP) in Southwest Alaska with a very small population of resident Dolly Varden fish. He said PCHP was having difficulty with the Alaska Department of Fish and Game in obtaining a fish habitat permit due to the resident Dolly Varden.

8:53:43 AM
He addressed the FCHP schedule as follows:

- Initial studies completed in 2006.
- Filed permit applications in 2007 and 2008.
- Project was entering its fifth year while permitting continued.
- Project was a combination of easements and leases with the state and Matanuska-Susitna Borough, none were in place. He noted that the Alaska Department of Natural Resources (DNR) had never leased state land to an independent power producer before and there had been a lot of delay in trying to get the project moving forward.
- Final design and financing completed in the fall of 2013.
- Construction during the summer of 2014.
- Operation by October 2014.

MR. GROVES addressed IPP opportunities in Southcentral as follows:

- 50-plus MW ROR-hydro potential in Southcentral that was environmentally, politically, technically, and economically viable.
- Potential ROR projects would be greater than 25 percent of MEA's existing load.
- Private sector would take the development risk off utility books.
- Stable and long term competitive pricing.
- Sustainable renewable energy resource.
- Supply geographic and fuel diversity.
- Local construction, management, and operational jobs.

He explained IPP needs as follows:

- Predictable and timely regulatory environment.
- Access to public infrastructure and markets.
- Fair pricing and contract terms.

8:56:20 AM
SENATOR MICCICHE stated that he was a big fan of renewable energy projects. He noted that people demanding a higher proportion of renewable energy were often the very same people that were opposing hydro projects. He said it was a little bit frustrating as Alaska moved forward and it was a tough stakeholder exercise with each case being unique. He stated that some of the renewable projects were helping people to understand that energy in any form did not come without impact and working together was important.

SENATOR EGAN asked if the committee was going to invite Mr. Mitchell back for a presentation on the Sweetheart Lake Hydroelectric Project (SLHP) in Southeast.

CO-CHAIR BISHOP replied yes.

MR. MITCHELL stated that he was a developer working on SLHP, a 19.8 MW facility south of Juneau. He said he was working on licensing with the intention of supply energy to Juneau by 2016. He thanked the committee for the opportunity to show what the private sector was trying to do to help resolve Alaska's huge problem of bringing reliable and lower cost energy to the state.

CO-CHAIR BISHOP thanked AIPPA for their presentations.

8:58:38 AM
There being no further business to come before the Senate Special Committee on In-State Energy, Co-Chair Bishop adjourned the meeting at 8:58 a.m.