

**ALASKA STATE LEGISLATURE
HOUSE SPECIAL COMMITTEE ON ENERGY**

March 17, 2022

10:21 a.m.

MEMBERS PRESENT

Representative Calvin Schrage, Chair
Representative Matt Claman
Representative Tiffany Zulkosky
Representative George Rauscher
Representative Zack Fields

MEMBERS ABSENT

Representative Chris Tuck
Representative James Kaufman

COMMITTEE CALENDAR

HOUSE BILL NO. 301

"An Act relating to the establishment of a renewable portfolio standard for regulated electric utilities; and providing for an effective date."

- HEARD & HELD

PREVIOUS COMMITTEE ACTION

BILL: HB 301

SHORT TITLE: UTILITIES: RENEWABLE PORTFOLIO STANDARD

SPONSOR(S): RULES BY REQUEST OF THE GOVERNOR

02/04/22	(H)	READ THE FIRST TIME - REFERRALS
02/04/22	(H)	ENE, L&C, FIN
03/08/22	(H)	ENE AT 10:15 AM BARNES 124
03/08/22	(H)	Heard & Held
03/08/22	(H)	MINUTE(ENE)
03/10/22	(H)	ENE AT 10:15 AM BARNES 124
03/10/22	(H)	Heard & Held
03/10/22	(H)	MINUTE(ENE)
03/15/22	(H)	ENE AT 10:15 AM BARNES 124
03/15/22	(H)	Heard & Held
03/15/22	(H)	MINUTE(ENE)
03/17/22	(H)	ENE AT 10:15 AM BARNES 124

WITNESS REGISTER

BRAD JANORSCHKE, General Manager
Homer Electric Association, Inc.
Homer, Alaska

POSITION STATEMENT: Co-provided a PowerPoint presentation, discussed proposed amendments, and answered questions on HB 301.

BRIAN HICKEY, Chief Operating Officer
Chugach Electric Association, Inc.
Anchorage, Alaska

POSITION STATEMENT: Co-provided a PowerPoint presentation, discussed proposed amendments, and answered questions on HB 301.

DANIEL HECKMAN, Regulatory Analyst
Golden Valley Electric Association
Fairbanks, Alaska

POSITION STATEMENT: Co-provided a PowerPoint presentation, discussed proposed amendments, and answered questions on HB 301.

ACTION NARRATIVE

[10:21:02 AM](#)

CHAIR CALVIN SCHRAGE called the House Special Committee on Energy meeting to order at 10:21 a.m. Representatives Claman, Rauscher, and Schrage were present at the call to order. Representatives Zulkosky and Fields arrived as the meeting was in progress.

HB 301-UTILITIES: RENEWABLE PORTFOLIO STANDARD

[10:21:38 AM](#)

CHAIR SCHRAGE announced that the only order of business would be HOUSE BILL NO. 301, "An Act relating to the establishment of a renewable portfolio standard for regulated electric utilities; and providing for an effective date."

[10:22:26 AM](#)

BRAD JANORSCHKE, General Manager, Homer Electric Association, Inc. (HEA), thanked the committee and introduced the co-presenters.

[10:22:54 AM](#)

BRIAN HICKEY, Chief Operating Officer, Chugach Electric Association, Inc. ("Chugach"), thanked the committee and expressed interest in Renewable Portfolio Standards (RPS) and the decarbonization of the economy.

[10:23:17 AM](#)

DANIEL HECKMAN, Regulatory Analyst, Golden Valley Electric Association (GVEA), thanked the committee and expressed his support for a sustainable, renewable standard for the Railbelt.

[10:23:52 AM](#)

MR. JANORSCHKE began the Railbelt utilities' PowerPoint presentation [included in the committee packet] on slide 3, which showed a brief overview of HB 301. He shared that the Railbelt utilities sent a letter to the governor in January [2022], relating their support of diversifying the energy mix. As 85 percent of Railbelt electricity comes from natural gas, he expressed the opinion that, from a business perspective, none of the Railbelt utilities want to be dependent on one resource. In example, he referenced that Harbor Electric requested bids three years ago for a five-year natural gas contract. He emphasized that there had been only one bid to meet 85 percent of members' needs. He said that when a fuel component represents one-third of the electric bill, "it is hard to look a member in the eye and say, 'I got you the best deal possible.'" He expressed appreciation of the supplier, but from a business perspective, "it is putting a lot of eggs in one basket." He explained the biggest challenge would be the lack of transmission in the system. He stated, with support, a more robust transmission system could be built, which would enable diversification of the generation portfolio to include other resources. He expressed the opinion that the only way forward, so the ratepayers are not carrying all of the burden, would be participation from the state.

[10:27:11 AM](#)

MR. JANORSCHKE referenced slide 4, which addressed specifics of the proposed legislation. He pointed out the importance of having achievable goals. He stated that transmission constraints are one of the largest hurdles for the utilities and the independent power producers, who need to put power on the grid without upward pressure on rates. He argued that using economies of scale would be the only way not to pressure rates upward while incorporating renewable energy. Economies of

scale, whether wind or solar, mean a large number of resources are in a single location. He emphasized that the current transmission system could not handle this.

[10:29:14 AM](#)

REPRESENTATIVE RAUSCHER expressed the opinion that some "lofty" goals have been set out in HB 301. In regard to 80 percent renewables by 2040, he questioned the percentage [of renewables] HEA is currently using.

MR. JANORSCHKE responded that HEA is using about 15 percent renewable energy. He clarified, while renewable energy is referred to as non-firm energy, hydroelectric is considered to be firm energy. He indicated that 15 percent of HEA's needs are met by the Bradley Lake and Battle Creek facilities. He expressed the opinion that most utilities "love hydropower."

[10:30:35 AM](#)

MR. HICKEY stated that [slide 5] summarizes [the focus of the proposed amendments that the Railbelt utilities submitted to the governor]. Highlighting some of the points in the list, he began by expressing the opinion that caps on costs and reliability should be incorporated in the proposed legislation. To stop consumer costs from becoming too high, he maintained that the Regulatory Commission of Alaska (RCA) should be able to suspend RPS if costs exceed a certain threshold. Directing attention to another point, he voiced the opinion that targets and timelines should be based on analysis and achievable. Referencing the results from Senate Bill 123 [passed during the Thirty-First Alaska State Legislature], he stated, since that time, "thousands of hours" have been spent developing a Railbelt Reliability Council (RRC). He indicated that RRC has been incorporated, and an application for certification has been completed and will be submitted to RCA, with the intention of making RRC the electric reliability organization (ERO) for the Railbelt. He voiced that, in this role, RRC would vet the pathways forward into a "decarbonized" future, with the work done through a consensus process. He explained that, to pass an integrated resource plan, the consensus would entail an agreement between utility members and stakeholders. As there has only been one application, he expressed the belief that RRC would be ERO for the Railbelt, and this organization would be active as early as this fall.

MR. HICKEY, making another point, mentioned that RPS milestones should be coordinated with the planned replacement of the existing Railbelt generators. He expressed the expectation that most of the generation in the Railbelt will be "rolled off the books by 2060," depreciating current assets by 2030 or 2060. He suggested that coordinating the targets with depreciation would eliminate the prospect of "stranded investment" and the associated cost. He stated that because the utilities are cooperatives, costs would go right to the consumers. If there are events outside the control of the utilities, he said, RCA should be required to take this into account and allow the utilities to skip targets.

[10:34:28 AM](#)

MR. HICKEY gave examples of the challenges for the utilities concerning the timelines in HB 301. He stated if specific timelines are required, the utilities would need help from the legislature to fast-track permits. In terms of compliance, he argued that the collected fines should be used to invest in infrastructure supporting renewable energy. In terms of compliance difficulties, he emphasized the following points: the Railbelt grid is small and isolated, utilities make the only electricity available, and limited transfer capability exists between Kenai to Anchorage. In his next point, he maintained, if the wind implemented in Fairbanks is to be used in Homer, transmission interconnections would need to be enhanced. He estimated that this would need billion-dollar investments. He then addressed his opinion that HB 301 leans toward the use of purchase power agreements (PPAs), which would enhance the development of resources outside of the utilities. He expressed the opinion that this could be cost effective, but he reasoned it may be more cost effective to do this internally. He said, "The legislation should be balanced as to whether the asset is developed within the utilities' structure or purchase power arrangements with other entities."

MR. HICKEY moved to [slide 6], which began the listed amendments presented to the governor. He stated that [Amendment 1] would shift the [RPS] requirement for each utility to a regional requirement. He explained that a target for individual utilities would create competition for resources; otherwise, the resources would be developed together, generating economies of scale. Because of the permitting and the design issues, he expressed the opinion that the 2025 target in the proposed legislation would not be achievable. He stated that [Amendment 2 on slide 7] would remove this, and other targets would be

adjusted. He maintained, [per Amendment 3 and Amendment 4 on slide 8], that PPAs and internal development should be done "on an equal footing."

[10:38:13 AM](#)

MR. HICKEY, in response to Representative Rauscher, explained that in 2010 the upgrades to the transmission system in the Alaska Energy Authority's (AEA's) resource plan had been estimated to be around \$900 million. He voiced the opinion that the current cost would be closer to \$2.5 billion. He said bringing this amount to the utilities and the ratepayers would be a "bridge too far."

[10:39:22 AM](#)

MR. HECKMAN, beginning on slide 9, stated that Amendment 5 addresses concerns on costs and reliability in the proposed legislation. He explained that it would give RCA oversight over RPS. If RCA finds RPS to be contrary to the public interest, RCA will have the ability to suspend RPS, in whole or in part. He continued, if the cost to comply [with RPS] exceeds a certain percentage, RCA would be allowed to stay a requirement to comply with RPS. He informed the committee that the definition of "public interest" exists in statute and commission precedent. He said this [amendment] pivots back to the idea that ERO would be the proper mechanism for RPS considerations. In making the decision to stay a requirement to comply with RPS, he stated, RCA would take into consideration impacts to reliability, resiliency, and security.

MR. HECKMAN, [moving to slide 10], stated that [Amendment 6], would change language in relation to noncompliance issues. He explained, in relation to an RPS noncompliance issue, RCA would be required to consider events and circumstances outside of the control of the load-serving entities. He stated that [RCA] would be given no discretion, but it would have the ability to revise and expand these options through its judicial process, which is currently in statute.

MR. HECKMAN, [moving to slide 11 and Amendment 7], stated that currently the proposed legislation would not allow for the cost of noncompliance fines to be included in load-serving entities rates. He explained the Railbelt is made up of electrical cooperatives which are entirely different business models than investor-owned utilities, and the consumers eventually pay for the cost of electricity. Language would be modified so the

noncompliance fine must be used, either through the Renewable Energy Fund (REF), or another fund, to invest in the renewable energy infrastructure in the electrical region of the utility.

[10:43:34 AM](#)

REPRESENTATIVE ZULKOSKY questioned the capital needed to implement the proposed legislation and whether the state would be expected to invest. She expressed the understanding that the utilities would need some level of investment, likely from REF.

MR. HECKMAN stated that the amendment did not express this; although, there are significant capital costs which would be incurred in order to comply with RPS. He added that the National Renewable Energy Laboratory's (NREL's) study did not address these costs. He expressed uncertainty whether funds would come from REF. He deferred to his colleagues.

MR. JANORSHKE expressed agreement with Mr. Heckman, as significant investment would be needed for transmission issues. He mentioned Mr. Hickey's reference to over \$2 billion for improvements in a transmission plan. He expressed the opinion that if the utilities have to fund these improvements, "they're never going to happen," as most of the utilities are sensitive about rates. He acknowledged that some comments have been made which convey that the utilities had overbuilt in recent years. He argued that those in the industry, who run the systems, "know there is nothing further from the truth." He described the three load-serving areas as separated by avalanche chutes, vast mountains, and public lands. Between these areas, he said, "We have a simple extension cord," so utilities have to be independent and produce their own power, as the power "never goes out when it is 60 above, it is always 30 below when the power goes out for a long period of time." In example, he referenced an older power system, which has been retained in the event of a local active volcano producing fly ash. The older system would be used as a reserve to save the newer system. He said the older system "may burn a lot of fuel ... but with fly ash in the area you don't care, you save your good stuff ... and run the old stuff."

[10:47:18 AM](#)

REPRESENTATIVE ZULKOSKY, with a follow-up question, mentioned AEA's initial presentation, and its reference to \$261 million in transmission line and energy-storage projects for the proposed legislation. She suggested that [these funds] could also help

achieve some other projects and goals. She questioned the utilities' involvement in the assessment and the timeframe for capital projects needed to achieve the goals of HB 301.

MR. JANORSCHKE responded that there have been discussions between Railbelt utilities, AEA, and the Bradley Project Management Committee. He said the utilities concur with AEA's analysis on the transmission upgrades, pointing out the bottleneck between Soldotna and Anchorage. He described HEA's Tesla batteries, which would help provide frequency stabilization for the Bradley Lake facility. He added that the batteries also help with real-time reserves and create an opportunity in the future to integrate non-firm resources. He said, "There is a lot the state can do to help the utilities resolve some issues and make some of the milestones ... in this proposed legislation a reality."

[10:50:41 AM](#)

MR. HICKEY, also responding to Representative Zulkosky's question, expressed the belief that [\$261 million] would not be the final amount, as the numbers AEA provided were step 1 and step 2 out of the 14-step process to build assets in the Railbelt. He stated that this sum would only provide a [transmission] line halfway from the Bradley Lake facility to Anchorage. Listing other projects, he stated that Kenai needs a new line, the central region of the Railbelt needs improvements, and a line from Anchorage to Healy needs to be built. He estimated that \$2.5 billion would be needed. Per Mr. Janorschke's other point, he said, in a power-pool arrangement, Chugach and the Matanuska Electric Association are constructing a 70-megawatt battery in Anchorage designed to provide reliability and correct frequency-control issues concerning the Bradley Lake facility. He emphasized the necessity to repair this problem. He added that this battery fix could also integrate more renewables and reduce the fuel burn.

REPRESENTATIVE ZULKOSKY, after hearing the details of achieving the goals in HB 301, expressed the realization that this would take decades of work.

MR. HICKEY responded in the affirmative.

[10:54:05 AM](#)

REPRESENTATIVE RAUSCHER questioned [GVEA's] current percentage of renewables.

MR. HECKMAN responded that he does not have the exact numbers. He stated that GVEA has a 26 percent carbon-reduction goal. He offered to follow up after the meeting with the requested information.

REPRESENTATIVE RAUSCHER, directing a question to Mr. Hickey, asked whether the Fire Island Wind Farm goals were achieved. He requested any details Mr. Hickey may have.

MR. HICKEY responded that slide [19] in the presentation shows the actual cost of the various non-dispatchable renewables on the Railbelt grid. He explained that the Fire Island Wind Farm was built as a "hedge" on the projection of rising fuel prices, but fuel prices have not risen as projected. Noting that a part of the graph's legend is missing, he indicated the brown line in the middle of the graph represents the Fire Island Wind Farm's cost going back to 2013. He stated that Chugach's avoided cost is below this and is depicted as the red-dotted line.

MR. HICKEY, in response to a follow-up question, stated if a "hedge" is bought and prices rise, this would be considered a "win." He explained that because the price of fuel has not risen as fast as projected, the [Fire Island Wind Farm] is costing money; however, risks for potential higher [fuel] cost have been mitigated.

REPRESENTATIVE RAUSCHER commented that the discussion of [HB 301] has been based on projected-fuel [prices], not capital costs. He stated that the Fire Island Wind Farm [was built] on projected-fuel cost, but the results "came up different." He pointed out the difficulty in basing the proposed legislation on a projection, and he posited whether this "is a good idea."

[10:58:01 AM](#)

REPRESENTATIVE FIELDS commented that Mr. Hickey has already partly answered his question. Continuing, he questioned the difference between shovel-ready projects in the Railbelt, which would total \$995 million, and projects that "we actually need" that are not shovel ready. He expressed the assumption that some projects, which are not shovel ready, are actually needed for integration and renewables. He questioned the projects which would require further planning. He expressed the belief that Mr. Hickey anticipated around \$2.5 billion in transmission costs for integrating intermittent energy sources in the Railbelt.

MR. HICKEY expressed the understanding that Representative Fields was correct. He pointed out the change in the value of money between 2010 and 2022, which represents a large amount of the costs. He gave examples of Chugach's increased costs. He explained that the cost to build transmission in the Railbelt would be about \$1 million per mile. He described the various components in the process to build transmission and said the \$2.5 billion is a "very, very rough" estimate, but not "off the charts."

[11:00:04 AM](#)

MR. HICKEY moved to slide 12, which compares the Railbelt and the Lower 48. He indicated that the state produces an estimated 35 million metric tons of carbon per year, and the Railbelt produces 7.7 percent of this. He expressed the opinion that the decarbonization of the economy would require a decarbonized-electric grid. He expressed excitement concerning the challenge, referring to [part of the challenge] as balancing rates in a cost-effective way. He described a key issue as the transition away from natural gas in Cook Inlet. Depending on the utility, he said, 70 percent of the electricity produced [in the Railbelt] is generated from Cook Inlet natural gas. He said, "None of us like that, but that is the reality." In addition to this, he said, most of the home heating in the Matanuska-Susitna Borough and the Municipality of Anchorage is from this source. He stated that moving away from Cook Inlet natural gas could impact home-heating prices. He said, "I think we have to look at it from a holistic perspective - of how we move off of this, and how we don't get too far away from what we need - to keep the lights on and heat homes in the wintertime."

MR. HICKEY reiterated that the Railbelt utilities are cooperatives, with no shareholders, so the costs go directly to the ratepayers. He addressed the issue concerning redundancy in the Railbelt grid, expressing the opinion that the grid does not have redundancies. Concerning isolated grids in Alaska, he stated that these do not operate the same as grids in the Lower 48. He explained that the things which happen over hours on large grids would happen within seconds in the Railbelt. He referred to [electrical] frequency as the primary operating variable; when there is rapid change [in frequency], blackouts happen. As a last point, he said, "As we move into this decarbonized future, I think we have to be very careful. I think that technology is going to advance rapidly over the next 10 or 20 years." He continued, stating that [new] power could

come from small nuclear, electro fuel, or hydrogen based, as billions of dollars are being put into research. He reasoned that, while Alaska needs to move forward, the state does not need to be locked into a 20- or 30-year investment when other technology becomes viable. He expressed the opinion that the Susitna-Watana Hydroelectric Project ("Susitna-Watana") may have to be built, but this should be put off as long as possible, as other technologies may be developed. He moved to [slide 13], pointing out the "great work" in NREL's study; however, the study was only the first step of many steps which need to be completed.

[11:05:51 AM](#)

MR. JANORSHKE, in closing the presentation, thanked the committee. As the longest serving utility manager on the Railbelt, he voiced excitement for the new collaboration in the Railbelt. Concerning HEA, he related that many investments over the years have been made to utilize natural gas more efficiently; however, he stated that "it does make me nervous" when 85 percent of the energy comes from a single supplier and resource. He concluded that, as a result, the Railbelt utilities are actively trying to reduce risk, improve the system with non-firm and renewable options, maintain the quality of service, and not raise rates. He expressed appreciation for the committee's support.

[11:08:02 AM](#)

REPRESENTATIVE FIELDS referenced the testimony in a previous committee meeting which conveyed that the grid in Colorado is isolated. In relation to an isolated grid, he questioned whether the Railbelt learned from Colorado's operations.

MR. HICKEY expressed his understanding that, while Colorado has isolated power plants that replicate Alaska, its grid is heavily connected at the Four Corners to the Western Interconnection. He stated that some of the events in Colorado have been studied but only in the isolated areas.

REPRESENTATIVE FIELDS, with a follow-up question, related that Colorado has intermittent sources of energy. When these sources are not "cranking-out" energy, he questioned whether Colorado is pulling energy from across the West.

MR. HICKEY responded in the affirmative.

REPRESENTATIVE FIELDS expressed shock at the drop in costs in the Lower 48 for wind-plus-storage and solar-plus-storage [installations]. He questioned the cost of this in Alaska. He suggested that the cost margin would be geographically driven.

[11:10:11 AM](#)

MR. JANORSCHKE deferred the question to Mr. Heckman and Mr. Hickey.

MR. HECKMAN explained that GVEA has not issued a request for proposals (RFPs); rather, it has issued a request for information (RFI). He stated that this was issued with the intention to get project proposals from different vendors to help meet carbon-reduction goals, while not impacting reliability or rates. He described GVEA as being at the northern end of the Railbelt. He stated that none of RFIs "moved the mark" with the carbon-reduction goals, so no action has been taken. He added that this has not stopped the process, and GVEA is still looking to integrate these sources. He speculated that, depending on the interconnection and the fuel source, the costs could be high.

REPRESENTATIVE FIELDS, with a follow-up question, asked whether any of the providers stated a cost.

MR. HECKMAN responded that he is not at liberty to speak to this specific information.

[11:12:13 AM](#)

MR. HICKEY explained that Chugach had recently collected responses to its RFP. Per the prices, he directed attention to [slide 19] and the green line at the top of the graph, which represents pricing of PPAs for wind and solar in Hawaii. He compared this with the brown line at the bottom of the graph, which represents PPAs in the Southern U.S. He stated that the reason for the price difference is financiers are unwilling to take on the avoided cost in Hawaii because it has no market. He deduced that Alaska would have the same challenge. Comparing the [lower] prices in the Southern U.S., he stated that Chugach has received RFPs, but they are unregulated, and regulation in Alaska can double the cost of projects. He stated that Chugach received a broad range of prices from 13 proposals, with 3 proposals being from outside of Alaska. He offered that Chugach has not acted on any of them.

REPRESENTATIVE FIELDS questioned whether Mr. Hickey was at liberty to talk about the price range he has experienced.

MR. HICKEY responded that the price is somewhere between Chugach's avoided cost and the current cost of the Fire Island Wind. He pointed out that the areas [outside of Alaska] started small and "got their feet under them." He opined that the [Railbelt] utilities perform competently, and "if our directive is to make this happen, we will make it happen."

[11:16:08 AM](#)

REPRESENTATIVE ZULKOSKY offered her appreciation for the candid conversation. She stated that the testimony has underscored the lack of resiliency and redundancy. She expressed the opinion that rural Alaska is years behind the Railbelt. She underscored the need for capital projects to build the grid out in an equitable way. She referenced the number of years the Railbelt utilities have taken to come into alignment with [Senate Bill 123]. Concerning the implementation of HB 301, she mentioned the significant investment Mr. Hickey's testimony addressed. She said, "What we see in rural Alaska is that renewable energy is certainly not a magic silver bullet for affordability." She stated that renewables had been sold with this idea for a number of years. Considering the required capital projects, the actual cost, and the economies of scale, she said [implementation of the proposed legislation] would need to be done in a thoughtful way, even in urban Alaska. She offered her appreciation for the consideration of the unique demographics in the state in the pursuit of energy diversification. She reiterated her appreciation of the "thoughtful, candid" presentation.

[11:19:01 AM](#)

REPRESENTATIVE FIELDS, voicing agreement with Representative Zulkosky, stated that it is important to approach this in a thoughtful way. He expressed hope that the administration would make capital investments. He shared that he had done the math on the transmission cost, and, as a ratepayer, he voiced the opinion that the cost would be reasonable. He allowed that some [ratepayers] may not be able to absorb the cost. He expressed the opinion that the oil-revenue windfall could be used to pay down transmission costs, for example. Concerning intermittent energy generation and the need for storage, he referenced NREL's study and assumed that Susitna-Watana would not be built. He expressed the belief that gas generation would be kept online when renewables are not being produced. He questioned whether

the only backup energy would be gas and pump storage. Given the latitude and isolation of the grid, he questioned whether there would be other alternatives.

MR. JANORSCHKE voiced agreement with Representative Fields' comments and responded that there are some options. He provided the opinion that, considering implementation of RPS, gas would be relied on for "many, many, many years to come" because wind and solar are not reliable in the winter. He pointed out that the Dixon Diversion Hydro Project is an opportunity which should be considered. He voiced the opinion that the storage capabilities of the Bradley Lake and Battle Creek facilities are "fantastic" but easy to discount. Referring to lightweight gas units currently in use, he said that because they can be backed-off easily, they are considered efficient storage units in real time. He voiced the opinion that storage hydro is another alternative, and, since 2004, batteries have had a positive impact on GVEA's grid. He stated that the Railbelt utilities are continuing to invest in batteries. Comparing the Railbelt's grid to large grids in the Lower 48, he explained that when a unit is tripped in the Railbelt, every utility is immediately aware, creating a panic; however, when a unit trips in an extremely large plant, it is hardly detectable in the grid's frequency. Referring to the Railbelt, he said, "It is a very tightrope we are walking right now."

[11:24:05 AM](#)

MR. HICKEY pointed out the importance of the distinction between energy and capacity: energy is used in kilowatt hours, while capacity is the amount of energy available for delivery in a given moment. Every year, on an energy basis, the Railbelt uses about 4,800 gigawatt hours, while Fire Island Wind produces about 50 gigawatt hours, Bradley Lake produces about 400 gigawatt hours, and Dixon Creek produces around 200 gigawatt hours. He postulated, if Susitna-Watana were built, it would produce 2,800 gigawatt hours every year. Concerning the magnitude of replacing [the entire Railbelt's] energy generation in 18 years, he expressed the opinion that there needs to be an understanding of the amount of wind actually there and its cost. He acknowledged that he did not answer the question and requested Representative Fields to follow up.

REPRESENTATIVE FIELDS responded with a follow up: notwithstanding gas and developing technologies, he inquired whether there are other practical options available to provide reliability with intermittent generation.

MR. HICKEY responded that there has been a large amount of interest in pump storage. He said that, generally, the economics of pump storage are effective. He stated that very large power plants cannot be shut down below the minimums, so a pump-storage facility would be built to utilize the [residual] energy. Qualifying this, he stated that pump storage losses can be significant, and the Railbelt does not have large enough units to explore this. He allowed that RPS requirements, or a carbon tax, could change the economics for building pump storage. He added that the utilities are still looking at pump-storage options.

[11:27:41 AM](#)

REPRESENTATIVE CLAMAN expressed his understanding of the importance of RPS and needing a consensus among the utilities. He stated that while a consensus is being worked out, significant markets focused on other renewables [could be considered]. Considering the legislation may take a few years and the idea that the gas supply is limited, he questioned the most viable alternative to incorporate into the system.

MR. Hickey responded that building a big hydro [plant would be the solution].

MR. HECKMAN responded in the affirmative regarding the implementation of big hydro.

MR. JANORSCHKE agreed with the solution of big hydro. He added that to accommodate big hydro a robust transmission system would need to be built, with some battery storage; this would be the only way to get the economies of scale to drive down the cost to benefit everybody. He referred to Mr. Heckman.

MR. HECKMAN responded in the affirmative. He stated that this level of hydro would not be possible without a big transmission system to accommodate the power and integration of more renewables.

CHAIR SCHRAGE commented on the unity within the utilities.

[HB 301 was held over.]

[11:29:50 AM](#)

ADJOURNMENT

There being no further business before the committee, the House Special Committee on Energy meeting was adjourned at 10:30 a.m.