

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

March 10, 2022  
10:19 a.m.

**MEMBERS PRESENT**

Representative Calvin Schrage, Chair  
Representative Matt Claman  
Representative Zack Fields  
Representative George Rauscher  
Representative James Kaufman

**MEMBERS ABSENT**

Representative Chris Tuck  
Representative Tiffany Zulkosky

**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

**WITNESS REGISTER**

CHRIS ROSE, Executive Director  
Renewable Energy Alaska Project  
Anchorage, Alaska

**POSITION STATEMENT:** Offered a PowerPoint presentation and testified in support of HB 301.

TOM PLANT, Senior Policy Advisor  
Center for the New Energy Economy  
Colorado State University  
Fort Collins, Colorado

**POSITION STATEMENT:** Offered a PowerPoint presentation and testified in support of HB 301.

MARK GLICK, Energy Policy Specialist  
Hawai'i Natural Energy Institute  
University of Hawai'i  
Honolulu, Hawai'i

**POSITION STATEMENT:** Offered a PowerPoint presentation and testified in support of HB 301.

#### **ACTION NARRATIVE**

[10:19:48 AM](#)

**CHAIR CALVIN SCHRAGE** called the House Special Committee on Energy meeting to order at 10:19 a.m. Representatives Claman, Kaufman, Rauscher, and Schrage were present at the call to order. Representatives Fields arrived as the meeting was in progress.

#### **HB 301-UTILITIES: RENEWABLE PORTFOLIO STANDARD**

[10:20:24 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."

[10:20:50 AM](#)

CHRIS ROSE, Executive Director, Renewable Energy Alaska Project (REAP), offered the PowerPoint presentation, ["Support for HB 301, An RPS for Alaska's Railbelt," hard copy included in the committee packet]. He stated that REAP is a statewide nonprofit coalition of diverse energy stakeholders, [listed on slide 2], promoting renewable energy and energy efficiency in Alaska since 2004. He stated that REAP is an education and advocacy group working throughout the state providing a variety of conferences, webinars, and presentations, supporting K-12 STEM [science, technology, engineering, and math] education as well as developing clean energy pathways for jobs [listed on slide 3].

He cited that in 2008 REAP helped develop the legislation that resulted in the Renewable Energy Fund. Referencing [slide 4], he said, since 2008, \$275 million has been appropriated to the fund, and another \$250 million is being leveraged to build 90 renewable energy projects, mostly in rural Alaska. He stated other advocacy efforts include House Bill 306 [passed during the Twenty-Sixth Alaska State Legislature], which created a 50 percent goal by 2025 for renewable energy. More recently REAP has been involved in the reform of the Railbelt grid, specifically with Senate Bill 123 [passed during the Thirty-First Alaska State Legislature], which creates a new form of governance that would help execute renewable portfolio standards (RPS).

[10:23:57 AM](#)

MR. ROSE, [moving to slide 5], explained that energy generation in the Railbelt is "lopsided" because the Cook Inlet natural gas supply generates about 80 percent of all the electricity from Homer to Fairbanks. He said this fuel is about twice the national average. As a result, Alaska has some of the highest electricity costs in the nation. He expressed the opinion that high electricity cost is a problem because it discourages investment and economic activity. He stated that, meanwhile, the Railbelt region has massive renewable energy potential from wind, solar, hydro, geothermal, biomass, and tidal. He expressed the opinion that no energy policy in the state focuses on consumer-based policies and triggers action. He added that 75 percent of the state lives in the Railbelt region, which has a history of inaction [in relation to energy policies]. He pointed out that the graph [on slide 6] shows how quickly the price of wind and solar has dropped over the last 10 years. He explained that the price of wind and solar in Alaska has dropped below the price of gas in the Lower 48, and the price of gas in the Lower 48 is half the price of Cook Inlet gas.

[10:27:28 AM](#)

REPRESENTATIVE RAUSCHER questioned whether the overall drop in costs of renewable energy is because of China's participation. He questioned whether materials have become cheaper and technology has gotten better.

MR. ROSE responded that the price reduction [for renewables] is the result of "all of the above, and I would also add policy ... because it drives markets." He stated that 30 states have RPS, and multiple countries have renewable energy requirements, so

more utilities need equipment. This need increases the volume and the economy of scale. Once the requirement is set in policy, prices come down. He posited that this has happened across the planet for the last 10 years, because more usage drives down prices. He stated that this includes technological innovations. He gave an example of wind technology, explaining that wind towers are getting taller because there is "better wind up higher," and blades are getting bigger, which means it can "sweep more area with the wind turbine." He concluded that technological innovations are driving the prices down.

[10:29:15 AM](#)

MR. ROSE stated that Lazard, a consulting group, created the graph [on slide 7], which shows the unsubsidized costs of different energy technologies in "an apples-to-apples comparison." He outlined the cost comparisons between renewables and conventional energy resources, stating that wind and solar, with the new technology, are cheaper than natural gas. He added that building new nuclear or natural gas plants would be more expensive than building new wind and solar plants. Answering a question from the committee meeting [on 3/8/2022], he pointed out the percentage of wind energy used in different states, [depicted on slide 8]. He noted that Iowa produces 58 percent of all its electricity from wind. He expressed the belief that this is the highest in the world. He referenced Texas, which generates more megawatt hours than Iowa, but Texas has a bigger population. He pointed out other states listed on the slide with high levels of wind-generated energy.

MR. ROSE noted that intermittent wind energy can be stored in batteries and pointed to the graph [on slide 9] depicting the cost of lithium-ion batteries. He explained that the cost of batteries is being driven down by electric vehicles, consumer electronics, and utility-scale energy storage. As the vehicle industry transitions to electric, he expressed the opinion that the economy of scale will drive down the battery prices, which results in another important cost driver for the utilization of wind and solar. He informed the committee that many independent producers in the Lower 48 bid on package deals that include energy generation, battery installation, and a flat price for the power. He mentioned that some of these packages have lower prices than natural gas.

[10:33:39 AM](#)

MR. ROSE stated that [slide 10] graphs the electricity generation in the U.S. He contrasted the graph with the graph that the Alaska Energy Authority (AEA) presented in the committee meeting [on 3/8/2022]. He clarified that this graph includes every type of electricity from different resources produced across the country. Addressing the electricity production in the U.S., he said 20 percent comes from renewables. He pointed out that wind surpassed hydro and solar, moving to 10 percent. He added that nuclear, [which is not considered renewable on the graph], produces about 20 percent of the electricity, coal has dropped dramatically to 19 percent, and natural gas generates about 40 percent. He reiterated that 80 percent of electricity in the Railbelt comes from natural gas.

MR. ROSE stated that [slide 11] shows a map of the states with RPS. He pointed out the 10 jurisdictions with standards at 100 percent by 2040 or 2050. He noted that, to be included on the map, the U.S. Department of Energy (DoE) requires the states' renewable goals to be codified. He identified Alaska as not having codified goals; thus, DoE did not include it on the map. In addressing a question from the committee meeting [on 3/8/2022], he indicated that many states have more aggressive standards than the standards proposed in HB 301, which is 80 percent by 2040.

[10:36:22 AM](#)

REPRESENTATIVE RAUSCHER expressed the assumption that codified states represented on the map would incur a penalty if the appropriate percentage [of renewable energy] was not met. He questioned whether utility companies have been penalized. He referenced the penalty in the proposed legislation and questioned whether it would match penalties in the Lower 48.

MR. ROSE began by reiterating that Alaska's energy goal is not in statute because it is not codified. He answered the question by confirming that states with RPS would enforce the standard through a fine, or an alternative compliance payment. He gave the example that Hawai'i is an RPS state with a fine for noncompliance, but utilities have complied, so the state has never enforced fines. He offered that he does not know whether states have had to enforce penalties on utilities, but he argued that using penalties would be the only way to enforce a standard. He stated the difference would be that a standard would be enforced, and a goal would not be enforced. He opined that the fine written in HB 301 is "much, much lower" compared

to other states, and this would be his only concern with the legislation. He compared the average fine of \$47 per megawatt hour with the proposed legislation's fine of \$20 per megawatt hour, concluding that the penalty in HB 301 is less than half of the average in the U.S.

[10:39:18 AM](#)

MR. ROSE, in response to a follow-up request, assured Representative Rauscher that he would follow up with a spreadsheet of the state-by-state breakdown of standards and fines.

[10:41:11 AM](#)

REPRESENTATIVE KAUFMAN expressed the assumption that RPS in other states are based on an energy mix. He questioned whether states would set renewable goals and let market dynamics arrive at the energy mix based on high reliability and affordable cost.

MR. ROSE responded that some states have a carve out requiring a certain percentage of the renewable energy be from solar, for example. He noted that HB 301 does not have a carve out, and all renewable technologies would be eligible to count towards compliance. Addressing reliability and cost, he explained that the Federal Energy Regulatory Commission and the market would control this. He said that in the Lower 48 there are reliability standards that all utilities have to meet, or they pay fines; thus, they would not purchase or generate renewable energy unless it is reliable.

MR. ROSE stated that, in the Lower 48, independent power producers selling renewable energies generate 40 percent of all electricity. He voiced the opinion that the Railbelt needs competition, as now there is a history of "self-built bias." He explained that all the utilities in the Railbelt have built their own energy generation with very little competition. He suggested that RPS would bring in more companies to compete and drive down the price, similar to the Lower 48. He stated that before the legislature passed Senate Bill 123, the Regulatory Commission of Alaska (RCA) had no preapproval authority over the utilities built in the Railbelt. He expressed the opinion that, before this, the utility companies had not planned together, and many projects were unnecessary and not the cheapest for consumers. He said that reliability and price are taken care of in the Lower 48 [through the market], and this could be the case in Alaska.

[10:45:26 AM](#)

REPRESENTATIVE KAUFMAN reasoned that if the price point is going down for power generated by alternative energy methods, economics would create [a market]. He expressed his lack of understanding why the market would not lower the price point.

MR. ROSE responded in agreement but emphasized that five utilities have operated in "their own little sphere" in the Railbelt, and the market has never been open to competition. He explained that, until Senate Bill 123, each utility had a different interconnection standard, and if an independent company had wanted to sell solar or wind, five different standards for interconnection would be needed. He stated that Senate Bill 123 created a nondiscriminatory, open-access standard. He said another barrier for an open market is that the entire system is not dispatched by one unit. He explained that the utilities are good at balancing supply and demand, but they are doing this independently of each other, not as one unit. He suggested that a portfolio standard would move the Railbelt toward a single-load balancing area, creating "a much better market." He relayed that RCA acknowledges that this would be a good thing for consumers. In agreement with Representative Kaufman, he said a market would do this if Alaska had the same conditions as the Lower 48.

[10:48:42 AM](#)

REPRESENTATIVE RAUSCHER requested an explanation of "reliability." He expressed the opinion that it could have two different meanings: consistent cost of electricity to the ratepayer or consistent availability of hydrocarbons.

MR. ROSE explained that in the electrical industry "reliability" means a standard for making sure system frequency remains constant and supply and demand is balanced perfectly with no flickering or blackouts. He voiced the opinion that Representative Rauscher may be articulating the concepts of resiliency and volatility. He gave examples, and he explained that if there is a reliance on the market price of a commodity, there would be less resilience because of the exposure to volatility.

REPRESENTATIVE RAUSCHER commented that, looking out the window, with reliance on wind or solar today, "it'd be a rough day for reliability."

MR. ROSE explained, if there is a single-load balancing area in the Railbelt, "I could be powering my little office here with wind from 100 miles away." With a larger-balancing area, wind may be in one place but not another. He added that fossil fuels would be a backup, but the goal is to have less reliance on fossil fuels.

MR. ROSE moved to [slide 12], which outlined the dangers of relying on Cook Inlet gas. He said Cook Inlet gas is "essentially under monopoly control," as Hilcorp Energy Company controls 85 percent of the gas, which is twice the price of gas in the Lower 48. He argued that a flat demand, high offshore production costs, and an aging infrastructure are "a recipe for higher and higher and higher costs for gas." He added that there is a dangerous dependence on Cook Inlet gas because production is highly subsidized.

[10:52:14 AM](#)

MR. ROSE pointed out the graph [on slide 13] detailing the change in gas prices in Cook Inlet since 1994. He said the price has changed from \$2 to the current \$8, so this is not "the good old days" with cheap gas. He added that until the recent rise of prices in the Lower 48, Railbelt utilities had been paying three times the price than Lower 48 utilities.

MR. ROSE stated that, in conjunction with introducing HB 301, the governor requested the National Renewable Energy Laboratory (NREL) perform a feasibility analysis, resulting in a 50-page report [hard copy included in the committee packet]. The study found two major things [as seen on slide 14]: 80 percent of renewable energy can be obtained by using the existing hydro with better energy storage, without impacting reliability; and, if there is 80 percent energy from renewables, there would be a savings in natural gas fuel costs between \$4 million and \$5 million per year. He noted that NREL plans to study costs in various scenarios in the future, but because of time constraints, NREL considered only five scenarios.

[10:55:08 AM](#)

MR. ROSE provided background information on Alan Mitchell, who has owned Analysis North since 1986, [as seen on slide 15]. He moved to [slide 16], titled, "Preliminary Benefit/Cost Analysis of NREL's RPS Scenario 3." He stated that this scenario consists of mostly wind and solar and was picked [to review]

because the cost of wind and solar is known. This analysis shows that 80 percent of wind and solar would have a capital cost of \$3.2 billion, with a savings of \$6.7 billion in natural gas over a 22-year period.

MR. ROSE pointed out that in Mr. Mitchell's analysis he used the assumptions listed [on slide 17]. He stated that NREL's fuel savings were based on AEA's fuel-price forecast. He explained that the capital cost is mostly from wind and solar, but it also includes the costs of a 63-megawatt generator, some hydro, and some biomass. The costs of new transmission and energy storage are not included in the analysis because utility companies are already planning [to spend money] on storage and transmission. He referenced the assumption that, for the ease of modeling, all the investments would happen in one year. To determine the assumed cost of wind, he said, Mr. Mitchell accounted for the "Alaska factor" by using the cost of the Eagle Creek project in Fairbanks to determine the cost to build a wind plant in Golden Valley, which is double the cost to build a wind plant in the Lower 48. He stated that Mr. Mitchell used the same type of assumptions for the solar analysis.

[11:00:13 AM](#)

MR. ROSE stated that [slide 18] lists the benefits not considered in the analysis: possible decrease of wind and solar costs, possible increase in future fuel costs, avoidance of a carbon tax, and federal subsidies that could be reintroduced. He said, "This is a fairly conservative back-of-the-envelope analysis." He moved to [slide 19], explaining that since the passage of Senate Bill 123 the Railbelt is required to establish an electric liability organization (ERO) to enforce standards and do regional integrated resource planning. He reiterated that, before this, the Railbelt had no mechanism for executing RPS because utility companies were not mandated to work together with standards. He stated that ERO's first project would be a technical and economic feasibility analysis of renewable percentages for future milestones. He added that the plan would be submitted for approval to RCA. He stated that the last slide presents a summary of the goals of HB 301, as follows: diversify the portfolio by decreasing reliance on gas, utilize local renewable energy, not impact reliability, make the market competitive, create energy independence, move consumers to renewables, create jobs with economic benefits, and - "most importantly" - establish a standard that triggers activity, as there will be a penalty for noncompliance.

[11:05:56 AM](#)

REPRESENTATIVE RAUSCHER indicated that he had four questions. First, he questioned whether ERO is the organization that should be determining the projections and percentages to be attained, asking, "Have we gotten the cart before the horse?" Second, he questioned the projected fuel-cost savings used for the model. Third, he questioned whether the 80 percent was "derived from the current limitations with the system or was that derived from what could be in the future system, if we implement ... transmission upgrades." Fourth, if the upgrades were incorporated in the model, he questioned the cost of the upgrades.

MR. ROSE, in response to the first question, explained that creating ERO would be a first step. The legislature would set the policy, and ERO would implement this in the Railbelt. He said [the stakeholders] did not want to introduce RPS until there was a mechanism for execution. In reference to the second question, he provided that a representative from NREL would explain the numbers obtained from the utilities and modeling in a subsequent hearing. He expressed the opinion that the "gas burn" today is easy to determine, and the price projections came from AEA and are consistent with other projections. In reference to the last two questions, he expressed the belief that "80 percent is not aggressive in the country," but a "happy medium," which is achievable with available technology. He stated that NREL has clarified this with multiple scenarios.

[11:10:01 AM](#)

REPRESENTATIVE FIELDS expressed the opinion that RPS is needed in Alaska, but the Susitna-Watana Hydroelectric Project would not be built, so the majority of renewable energy is not "on the table." He questioned the amount of storage required in NREL scenarios [that do not use the maximum amount of hydro], the location of the pump-storage facilities, and the cost to support 48 percent wind and solar generation.

MR. ROSE responded that this is a good question, but the answer is unknown. He explained that ERO would integrate a resource plan, as the proposed legislation would require 30 percent renewable energy by 2030. He explained that 20 percent is achievable by 2025, because the percentage is almost there. He continued that ERO's resource plan would likely be done by 2025, giving five years of "runway" on how to increase renewables by 10 percent. He stated that the pump-storage locations would be

unknown until the resources are determined. He expressed the opinion that they would be located close to existing transmission and battery storage. He expressed the belief that the utilities in the Railbelt already have plans to build battery storage regardless of the legislation; likewise, AEA and other authorities are planning to build transmission upgrades. He stated that to achieve 30 percent renewables by 2030 requires action. In example, he stated that the Matanuska Electric Association equates to the size of West Virginia and has never prospected for wind. The proposed legislation would require the utilities to seek out resources, and once found, the most appropriate energy-storage scenario would be determined. He stated that 55 percent by 2035 is a big jump, but other technologies, like geothermal and tidal energy, are being considered. The world is making tidal-energy technology cheaper, and he hypothesized that tidal energy in Cook Inlet would produce 50 times the power that is in the Railbelt now.

[11:15:08 AM](#)

TOM PLANT, Senior Policy Advisor, Center for the New Energy Economy (CNEE), in support of HB 301, presented a PowerPoint [hard copy included in the committee packet]. He stated that CNEE collaborates with legislators and governors from all over the country and is a nonprofit part of Colorado State University. He shared that he has served in the state legislature of Colorado and ran the state's energy office. He said that while he worked for the government, Colorado passed its RPS, along with other policies that targeted new energy. Because of its success, other states have reached out for advice on energy policies, which has become the focus of CNEE. He explained that CNEE runs databases for advanced searches on energy legislation, [as seen on slide 2]. He described [the database as a tool to help states understand what is happening across the nation], so ideas can be borrowed for effective energy legislation. He stated that CNEE also runs a yearly academy on clean energy legislation, bringing together bipartisan legislative groups with energy professionals to help craft the best policy for their state.

MR. PLANT, [moving to slide 3], stated that the results of a study by Lazard showed the dramatic decline in costs of wind and solar over the past 12 years. He stated that when Colorado passed its RPS, prices had been higher [for renewable technology]. He stated that Alaska would benefit from lower prices, as the graph shows the cost of wind decreasing by 72 percent and the cost of solar decreasing by 90 percent. He

said, because of "growing pains" in other states, Alaska is in a good situation [to benefit].

[11:20:23 AM](#)

MR. PLANT indicated that the table [on slide 4] lists states with RPS. He explained that most of these states have increased standards and extended expiration dates. He referred to Colorado's process, [listed on slide 5], which began with a citizen's ballot initiative passing renewable standards in 2004. He noted that Xcel Energy was the main opposition to the initiative, with the concerns that costs would increase, engineering would not be possible with the grid, and no resources would be available to meet the standard. The negative assumptions never materialized, and Colorado updated its RPS in 2007 to 20 percent renewables by 2020, and, because technology had become more familiar and improved, Xcel Energy supported the measure. He emphasized that now Xcel Energy has learned to incorporate renewable energy without integration or reliability problems, and it has moved ahead without a legislative mandate [as seen on slide 6]. He said that Colorado's goal is 66 percent renewables [for electricity] by 2030, with an overall objective [of 100 percent] by 2040. He explained that for Xcel Energy to move ahead without requirement was a shift.

[11:26:25 AM](#)

MR. PLANT pointed out [on slide 7] the renewable standard has helped drive down emission levels even while population has rapidly grown. To understand what drives costs, [slide 8] is a graph of data collected from [consumers'] energy bills. He pointed out that plants producing energy from fuel create fluctuation and volatility in an energy bill, and utility companies discovered that the incorporation of renewables reduced the associated risk of the fuel-cost adjustment. He said that the cost of renewable energy is upfront in the capital cost, and this cost would remain flat over time. He explained that even with fuel-cost volatility, electricity rates have stayed below the consumer price index.

[11:30:36 AM](#)

MR. PLANT, addressing the graph [on slide 9], stated that the rural electric cooperatives copied Xcel Energy's approach to renewable energy and reduced their coal assets. Because the costs of renewables are less than the marginal operating costs of the existing coal plants, the cooperatives are projected to

save 8 percent. Concluding the presentation, he said that when Colorado began transitioning to renewables not many states had RPS to use for examples, but results have far exceeded expectations. He remarked that there has been a strong economic response and gave examples of companies that have invested in manufacturing and technology for renewable energy.

[11:34:28 AM](#)

REPRESENTATIVE FIELDS, referencing the differences between Colorado and Alaska, stated that Alaska has very little coal-generated energy, and, unlike Colorado, the Railbelt grid is not connected with other grids. He requested comments on these differences and the issues Alaska may face in relation to storage.

MR. PLANT responded that storage is starting to play a larger part in the various requests for proposals. Even adding storage, the requests for proposals are far below other marginal costs. He stated that a wind-plus-storage project financed at under \$2 per megawatt hour, including incentives, is a "remarkably low price." He noted Colorado is not integrated with the Western grid, as there is not a regional transmission organization like the Eastern Interconnection. He stated Colorado is restrained, but the state is looking at ways to expand regional integration of its resources with other states, and the plan going forward would be using 60 percent or 70 percent renewables, which would require managing these resources over a larger geographic area.

[11:37:17 AM](#)

REPRESENTATIVE RAUSCHER questioned why both presentations listed Alaska as a state with no renewable standard or goal.

MR. PLANT responded that the graph with this information came from the National Council of State Legislators (NCSL), and it examines statutory requirements. He expressed the understanding that Alaska does not have a renewable standard in the statutes; therefore, it is not counted. He stated NCSL obtains information from NREL, so this standard is the same.

[11:39:09 AM](#)

REPRESENTATIVE KAUFMAN, considering the goals of having reliable power and reducing carbon, questioned whether nuclear power, or

other energy, should be considered as part of the overall portfolio.

MR. PLANT responded that different states react differently. He noted that a number of states have defined and established clean energy standards. He stated that, if an objective is the reduction of carbon, nuclear would fit in this, much like natural gas has replaced coal. He added that about 20 percent of the power in the Lower 48 comes from nuclear power. While nuclear is a zero-carbon resource, various states have concerns. He said that each state can propose to meet its objectives differently, and a number of states have transitioned their portfolios to be based on the level of carbon output from the entire system.

[11:42:38 AM](#)

MARK GLICK, Energy Policy Specialist, Hawai'i Natural Energy Institute (HNEI), in support of HB 301, presented the PowerPoint, ["Hawaii's Energy Transition Framework: Binding Commitments and Stakeholder Alliance," hard copy included in the committee packet]. He described Hawai'i as the most isolated and populated land mass in the world. Like Alaska, the state has the challenge of being disconnected from neighboring electrical grids and common supply lines. He said Hawai'i is transitioning from an almost total dependence on fossil fuels to a greater energy self-sufficiency. He offered support for HB 301, and said, "It is the right measure at the right time." He shared that HNEI is a research unit of the School of Ocean and Earth Science and Technology, University of Hawai'i, [as seen on slide 2]. He stated that, combining a diverse staff of experts, HNEI, the Hawai'i State Energy Office, and the Hawai'i Public Utilities Commission (PUC) have been appointed to lead the state's energy transition. He listed multiple organizations he has worked with throughout his career, including organizations in Alaska.

[11:46:05 AM](#)

MR. GLICK, [referencing slide 3], pointed out that the geographical isolation of Hawai'i is central to the evolution of its energy system, and even with the rapid growth of renewables, more than 80 percent of the state's energy mix still relies on petroleum, with the transportation sector using most of the mix. He continued that economics and energy security had been the initial drivers for clean energy plans after the [1973] oil shock, but the plans did not turn into action for 30 years, and

historical reliance on petroleum led to an "inertia" because of the adverse effect on the two local oil refineries. The refineries supplied jet fuel, gasoline, and diesel [to the entire state]. He referenced that the 2008 recession created pressure to move from petroleum because of oil price volatility, and in 2009 the legislature passed 40 percent RPS by 2030.

[11:48:16 AM](#)

MR. GLICK stated that Hawai'i has historically imported crude oil for its electrical power generation and transportation markets. Tourism dominates the economy, with 10.5 million visitors coming to the islands in 2019. He added that after the COVID-19 pandemic the industry is bouncing back. He stated that, according to economic research, the impact of oil volatility on residents and visitors is "profound," [as seen on slide 4]. He pointed out that even though the fossil fuel energy producers gain from high prices, those gains are deceptive, and a study from 2007 showed oil volatility has more of an impact on the economy than slower, steadier oil price increases.

[11:50:04 AM](#)

MR. GLICK moved to [slide 5], which details the economic recession in Hawai'i in 2008. He said because of global factors, fuel prices greatly reduced travel and tourism. He explained that supply chain issues compounded the recession. Explaining the vulnerabilities, [detailed on slide 6], he stated that if any of the [fuel] supply chain is damaged, the entire energy system is at risk.

MR. GLICK pointed out the Hawai'i Clean Energy Initiative [on slide 7], with the essential components being the stakeholder alliance and a body of laws and regulations. He said the agenda works best when all the constituencies and resource partners are at the table with a sense of ownership with the process and the outcomes. He spoke about the history of the stakeholder alliance.

[11:54:51 AM](#)

MR. GLICK pointed out that Hawai'i has two utilities operating six isolated grids. The state's challenges for a renewable energy transition are listed [on slide 8], as follows: Oahu, with the highest population and energy usage, has less landmass for effective solar and wind; no interconnections between the

islands; unwillingness in communities to support the development of large-scale infrastructure projects; real estate's rising prices; and requirements for permitting. Nonetheless, the economics and stakeholder alliance have kept the state ahead of its RPS schedule [as seen on slide 9]. He shared that Hawai'i received international attention when it passed legislation in 2015 establishing an electricity standard of 100 percent renewable by 2045. This target is now the defining objective for all future investments in the state's electricity sector, allowing for a systemic change to a clean-energy future.

[11:57:09 AM](#)

MR. GLICK, [moving to slide 10], stated that deploying renewable energy in Hawai'i depends on competitive bids in purchase power agreements (PPAs). He noted that the "remoteness factor" of Hawai'i and Alaska makes renewable energy more expensive than markets in the mainland U.S. and Europe, and Hawai'i has not experienced PPAs with 3 cents or 4 cents per kilowatt hour. He voiced the opinion that Alaska would not experience this either but expressed hope that neither state would be immune to global trends. He pointed out that the adoption of RPS removed any ambiguity over the intention of Hawai'i to establish a reliable and renewable energy market, and this has created competition in PPAs. He said that, with competitive bids and PUC oversight, solar prices are on a downward trend. He pointed out [on slide 10] seven solar projects with energy storage, making intermittent energy more reliable. He speculated that the Railbelt would have competitive renewable energy because of rising natural gas prices, wind potential, and a large land mass for renewables. He stated that Hawai'i passed its RPS without any clear analytical findings. He expressed the opinion that, while studies should be performed, the absence of these studies should not be a barrier to the urgent action needed to get the transition underway. He expressed the expectation that Alaska would be the benefactor of a long-term global price curve.

[12:00:55 PM](#)

MR. GLICK stated that [slide 11] comes from Hawaiian Electric's 2020-2021 sustainability report. The report details Hawaiian Electric's move from a 12 percent renewable portfolio in 2011 to a 35 percent renewable portfolio in 2020. He provided details on the state's solar installations, which have produced 4.5 percent [more energy] than specified in the mandated target. He briefly reviewed [slide 12], which details the updated status of the state's renewable energy projects. He noted that Hawaiian

Electric reached the current percentage with a combination of biomass, utility-scale solar, battery, rooftop solar, and wind. He added that progress would also be made from the completion of existing projects. Moving to [slide 13], he provided details on the comparison of fossil fuel energy costs with renewable energy costs, over time. He detailed the graph [on slide 14], which depicted the downward-price curve of renewable energy generation from 2010 to 2019. He pointed out the significant savings by avoiding oil cost and the cost of maintaining the associated facilities.

[12:05:19 PM](#)

MR. GLICK stated that HNEI's analysis shows planned additions of solar and solar-plus-wind projects in the state would achieve 70 percent renewable energy by 2030 without significant changes in the existing energy infrastructure. He reviewed the details of this analysis and gave the scenarios that would create a path to 100 percent renewable energy [as seen on slide 15]. He mentioned the Kauai Island Utility Cooperative's pumped-hydro renewable energy project. He stated that this project will help Hawai'i meet 70 percent of electricity sales with renewables by 2030. He said, "While there is not a silver bullet for finding an energy transition, it's critically important to set the agenda with binding commitments that carry the force of law and that are effectively enforced by an oversight agency." He reviewed that transition in Hawai'i was stimulated by decisive leadership during an economic recession with the support of a broad-based coalition of energy stakeholders committed to energy self-sufficiency. He concluded that, given the "great harm done by the dependence on foreign oil and gas," [HB 301] is timely, and HNEI would assist in any way possible.

[12:10:57 PM](#)

REPRESENTATIVE FIELDS requested that Mr. Glick follow up after the meeting with information on the wind-plus-storage project on Kauai.

[12:11:38 PM](#)

CHAIR SCHRAGE announced that HB 301 was held over.

[12:11:49 PM](#)

**ADJOURNMENT**

There being no further business before the committee, the House Special Committee on Energy meeting was adjourned at 12:12 p.m.