

ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE

January 25, 2010

3:33 p.m.

MEMBERS PRESENT

Senator Lesil McGuire, Co-Chair
Senator Bill Wielechowski, Co-Chair
Senator Charlie Huggins, Vice Chair
Senator Hollis French
Senator Bert Stedman
Senator Gary Stevens
Senator Thomas Wagoner

MEMBERS ABSENT

All members present

OTHER LEGISLATORS PRESENT

Senator Joe Thomas

COMMITTEE CALENDAR

SENATE BILL NO. 220

"An Act declaring a state energy policy; relating to energy efficiency and alternative energy; establishing the energy efficiency grant fund, an emerging energy technology fund, a renewable energy production tax credit, and an energy use index; and relating to a fuel purchasing cooperative, to energy codes and efficiency standards, to energy conservation targets in public buildings, to a state agency energy use reduction plan, to the alternative energy revolving loan fund, and to the renewable energy grant fund."

HEARD AND HELD

PREVIOUS COMMITTEE ACTION

BILL: SB 220

SHORT TITLE: ENERGY EFFICIENCY/ ALTERNATIVE ENERGY

SPONSOR(S): RESOURCES

01/19/10	(S)	READ THE FIRST TIME - REFERRALS
01/19/10	(S)	RES, FIN
01/20/10	(S)	RES AT 3:30 PM BUTROVICH 205
01/20/10	(S)	Heard & Held

01/20/10 (S) MINUTE(RES)
01/21/10 (S) RES AT 3:30 PM BUTROVICH 205
01/21/10 (S) -- MEETING CANCELED --
01/25/10 (S) RES AT 3:30 PM BUTROVICH 205

WITNESS REGISTER

MICHELLE SYDEMAN
Staff to Senator Wielechowski
State Capitol
Juneau, AK
POSITION STATEMENT: Commented on SB 220.

MIKE PAWLOWSKI
Staff to Senator McGuire
State Capitol
Juneau, AK
POSITION STATEMENT: Commented on SB 220.

CHRIS ROSE, Executive Director
Renewable Energy Alaska Project
POSITION STATEMENT: Commented on SB 220.

CAITLIN HIGGINS, Executive Director
Alaska Conservation Alliance and Alaska Conservation Voters
POSITION STATEMENT: Commented SB 220.

GWEN HOLDMAN Director
Alaska Center for Energy and Power (ACEAP) at UAF
POSITION STATEMENT: Commented on SB 220.

DENALI DANIELS, Sr. Energy Program Manager
Denali Commission
POSITION STATEMENT: Commented on SB 220.

BRIAN HIRSCH
National Renewable Energy Laboratory (NREL)
POSITION STATEMENT: Commented on SB 220.

ACTION NARRATIVE

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CO-CHAIR BILL WIELECHOWSKI called the Senate Resources Standing Committee meeting to order at 3:22 p.m. Present at the call to order were Senators Wagoner, Stevens, Huggins, French, Stedman and Wielechowski.

SB 220-ENERGY EFFICIENCY/ ALTERNATIVE ENERGY

CO-CHAIR WIELECHOWSKI announced an overview of the energy recommendations and invited testimony on SB 220.

MICHELLE SYDEMAN, staff to Senator Wielechowski, explained that she would go over the energy related budget recommendations. She said during the Interim hearings the most frequently received testimony had to do with approval of the existing energy programs such as weatherization, home energy rebates and low-income energy assistance. The committee was repeatedly told about how these programs are helping to cut costs for Alaskan families and they were urged to work towards increased funding for them. The public also expressed support for continued investment in renewable energy and the need to get communities off high-priced fossil fuels and on to locally available sources of renewable energy. Where such resources are available, the committee heard they could provide a more reliable, flat-priced, and sustainable source of energy over the long term.

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A final theme was that investments in energy efficiency result in real savings. She said the Resource committee co-chairs followed up on this testimony and spoke with agency and private sector experts to assess the effectiveness of the programs they heard about most; and a series of draft recommendations was produced addressing the need for increased funding for a discrete targeted set of programs. Those recommendations were contained in the report that the co-chairs released in October. Those were reviewed and resulted in the letter that was sent last week to the co-chairs of the Senate Finance Committee detailing the primary budget recommendations.

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She said that she and Mr. Pawlowski were asked to go over those recommendations today one by one to describe why the co-chairs believed they were worthy of being passed up to the Finance Committee.

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MIKE PAWLOWSKI, staff to Senator McGuire, started by saying the \$25 million recommended for weatherization is very popular, because it is a proven way to reduce energy costs. From the program they have learned that annual household savings average about \$527/year or \$7565 over the lifetime of the improvement. In 2008, \$200 million was appropriated for weatherization and that is likely to be fully encumbered by the end of 2010. The

recommendations include \$150 million for weatherization, but the chair worked with the actual program and found that just \$25 million would keep it going. According to AHFC 27,000 residences in Alaska are still ready to be weatherized.

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The next point was \$175,000 to help Alaskans learn how to lower their energy costs through a statewide public relations and education campaign on energy efficiency. Statistics from the weatherization program demonstrate that Alaskans stand to save millions by making their homes and businesses more energy efficient. Research shows that energy efficiency and conservation are typically 50-75 percent cheaper than building new power plants or buying energy on the open market.

The amount of \$100,000 was recommended to fund a technical assistance program to help business owners learn how to reduce their energy-related expenditures and improve profitability. The AEA plans to use federal stimulus funds to initiate a technical assistance program this fiscal year, but this funding would help it continue.

MR. PAWLOWSKI said the next recommendation was \$250,000 for energy-related job training. Using grant funds, he said the Alaska Vocational Technical Center currently trains power plant managers and bulk fuel operators to maintain reliable and efficient power plants. Unfortunately with weakening federal support for the Denali Commission, this funding is dwindling.

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Finally, he remarked that \$2 million to help Alaskans save money with energy efficient appliances was another recommendation that had a lot of public support. He said that several states already provide rebates to home owners who replace older energy inefficient appliances with ones that are substantially more efficient than federal standards, and the Department of Energy (DOE) reports that last year's savings from energy star appliances were enough to power 10 million homes and avoid green house gas emissions from 12 million cars.

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MS. SYDEMAN reviewed that in 2008 the legislature pledged \$300 million in funding over a five-year period for renewable energy projects. The Renewable Energy Fund provided grants up to \$4 million to eligible projects that can range from feasibility and reconnaissance studies to actual construction. She said the co-chairs believe that continuing to support the fund through 2012,

the original date, will allow the legislature to fulfill its original promise to help communities develop their own renewable energy resources.

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Next, she said, \$8 million was recommended for rural power system upgrades - above the Governor's proposed \$2 million. This helps reduce electrical costs in rural Alaska by helping them upgrade to more efficient power systems. In the last decade the AEA has upgraded about 35 rural power systems resulting in an average increase in efficiency of 26 percent. About 25-30 communities are still waiting for funding for the upgrades. Most of the funding in the past has come from the Denali Commission, but its funding is declining. So if the state is to continue that commitment, it will have to step in with some of its own funding.

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The next recommended item, Ms. Sydeman said, was \$200,000 to provide assistance to those individuals who operate the rural power systems. Right now the AEA has staff travel in the Circuit Rider Program to different villages and work with the operators so they can make maximum use of their systems. Having enough trained people in the AEA to do this training will continue this important work.

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CO-CHAIR MCGUIRE joined the meeting.

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MS. SYDEMAN said the next item is \$4 million to upgrade rural bulk fuel storage facilities. The Governor's budget recognized the need for increased funding here with \$1 million, but their research indicates that about \$5 million is necessary. The reason is that many older systems don't meet federal EPA standards and some communities might be disallowed from using these systems unless they are upgraded. Again, the challenge is the declining Denali Commission funding.

Another item is \$3 million for state matching funds to enable communities to successfully apply for federal funds for public transit systems. Alaska is one of three states that don't invest public funds in road-based state transportation systems. Many people use those systems to get to work, school and homes, and they are clearly used and beneficial. They have heard that several local governments - the MatSu and Kenai - have not been

able to secure federal funding because they can't come up with the state match.

The next proposal was for \$3 million to replenish the Power Project Loan Fund - above the Governor's proposal of \$7 million. The co-chairs thought \$10 million was more appropriate. The fund provides loans to utilities, local governments, and independent power producers to develop or upgrade their power production facilities. Interest rates vary from tax exempt rates on the high end to zero on the low end. The last time she checked, about 47 loans were out for a total of \$26 million; the repayment rate is excellent with only one late loan. Communities are taking good advantage of this fund and are doing their part in paying the loans back, but the balance is almost used up.

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MR. PAWLOWSKI said the next recommendation was \$200 million for long-term Railbelt Energy projects. He explained that the Railbelt's Regional Integrated Resource Plan was recently completed as the guide to developing the region's power systems over the next 50 years and \$2-\$8 billion worth of projects were identified. So, rebuilding the Railbelt Energy Fund would help prepare communities and the state for needed investments.

He said that \$10 million was "broken out" specifically for Susitna/Chakachamna and other hydro projects in the Railbelt. These were identified in the plan as "large hydro projects with important potential in near-term development within the region." This money would carry out the needed geotechnical work, pre-permitting and conceptual design for some of the projects.

The next step was \$3 million for the Emerging Energy Technology Fund (EETF). This idea was sponsored initially by Senator McGuire and included in SB 220, he stated. Most of the other recommendations are based on many existing programs, but little or no state funding is available for research and development of new technologies, and although the state supports renewable energy development, those projects are limited to off-the-shelf technologies. The proposed EETF would encourage innovation and exploration of new sources of renewable energy and match funds provided by the Denali Commission.

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MR. PAWLOWSKI said the next recommendation was \$10 million as an initial capitalization for the Southeast Energy Fund to expand power generation projects in Southeast and help complete the regional electrical grid. Most Southeast communities that rely

on hydro still rely on oil to generate electricity and by-and-large heat; and many of the hydro electric facilities in Southeast are at or near capacity which severely limits the region's growth. Following on that was the recommendation to continue funding for the Southeast Regional Integrated Resource Plan, similar to what was conducted in the Railbelt. The final recommendation was to fully fund the power cost equalization program (PCE) because it is critical as a foundation of Alaska's energy policy.

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SENATOR HUGGINS noted that his last two bullets didn't have a dollar figure with them.

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MS. SYDEMAN responded that their original proposal, based on conversations with legislative staff and the AEA, was that \$700,000 would be needed. The Governor's budget proposes a little bit more than that, and because his budget provided an adequate amount the co-chairs didn't feel that an increase above that level was needed.

MR. PAWLOWSKI said the same thinking went along with the PCE; they are supporting what the Governor is doing.

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SENATOR STEDMAN said he wasn't sure where the cost structure is on the Southeast Integrated Resource study, but \$700,000 seems really high. "Some of these projects have been looked at since the 50s."

SENATOR WAGONER said he is bothered that in looking at the two hydro projects, the smallest one will generate around 330-350 mgW, which is more than is needed in the Railbelt. In addition to that they are looking at revisiting the Susitna project and he didn't know why, because millions of dollars have already been spent and the study is done. "We don't need to do another thing, because I don't think that study is dated and I don't think the Susitna River has changed that much," he said. He also reminded members that the original Railbelt Fund money came from the balance that had been appropriated for the Susitna project study.

SENATOR WIELECHOWSKI said that is an excellent point. But speaking for himself, he said they followed the recommendations of the Integrated Resource Plan; this is what experts in the field are recommending. They don't know that the projects will

work yet; both have potential environmental problems. It's clear that they can't do all of them, but they don't know at this point which one will actually happen.

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MS. SYDEMAN noted that they have invited the Alaska Energy Authority to justify those recommendations of continued funding for both projects in a committee meeting.

SENATOR HUGGINS said they really need to understand what they are buying with this money assuming that even 45 percent of it goes forward. The Railbelt consolidation effort is a huge task and leaves a question mark in his mind.

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SENATOR WIELECHOWSKI said that was another excellent point and the plan is to have the ones who prepared the plan, Black and Veatch, to explain and see what their thoughts were. He agreed that they can't go forward on all three and that they have to decide if they continue moving forward until they figure out which one is correct or just pick one now. It's a good debate to have.

SENATOR HUGGINS reflected that some people are skeptical; for instance, Healy clean coal was given to a couple of operators, but now the report says they shouldn't restart that. He said, "We can't afford those kind of mistakes in what we are putting our money against. So, trial and error is not a good technique - as we're spending this amount of money."

CO-CHAIR WIELECHOWSKI said, "Excellent point."

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CHRIS ROSE, Executive Director, Renewable Energy Alaska Project, said their goal is to increase the production of renewable energy in Alaska. One of their primary objectives is also to increase energy efficiency. They are very happy with the omnibus bill. It is great to have renewable and efficiency energy ideas in one place. He said they would probably support many of them, but they need a chance to look them over.

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He said that he serves on the advisory committee that helps AEA bring recommendations to the legislature and he is happy to see the \$50-million recommendation for the fund this year. The first \$100 million for the program was released last February. So for the length of time they have been working on it, it is moving

ahead quite quickly. He saw some "tweaks" in the legislation that are consistent with what AEA is already doing - things like making sure there is a positive benefit/cost ratio and that an outside firm will do an economic analysis (AEA has contracted with ISER to do that.)

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MR. ROSE said that SB 150, the Emerging Energy Technology Fund, is a priority for this state, because while it currently does a lot for commercial, existing, and mature technologies, it doesn't do much for the emerging technologies. And Alaska has 90 percent of this country's tidal power potential, 50 percent of the nation's wave power potential, tremendous hydro kinetic potential, and it is the only place outside of some remote parts of Hawaii where a demonstration project can be brought in and save people money at the same time. Alaska is the perfect laboratory to test these things.

He said he had been working with staff on potential tweaks to SB 220 to make sure it works as smoothly as possible including adding the National Renewable Energy Lab and the Fossil Energy Office at UAF as members of the advisory committee that would make the decisions about those grants. He suggested putting even more than \$3 million into that fund because they might be able to get more matching funds from the Denali Commission as well as the Department of Energy.

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He said he supported SB 31, the state production tax credit. He stated that the federal production tax credit has been the primary driver of renewable energy development in the US. Congress has been authorizing it for only one or two years at a time, and for that reason it has been an "uncertain policy." States have been doing all kinds of things to incentivize renewable energy including creating their own tax credits. This tax credit would be 15 percent of the retail rate with a range of 2.1-5 cents/kW over five years.

MR. ROSE said they also support SB 121 that provides making all public buildings in Alaska energy efficient, because being efficient is always cheaper than generating the equivalent amount of energy. This language actually promotes the state to use performance contracting, which means the contractor would finance the project and the utility savings would be used to pay back the loan over time - a great way to finance these projects.

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Another recommendation, although it's not in the omnibus, is \$25 million for more weatherization. The \$360 million that came out of the 2008 legislature for both the current weatherization program and the rebate program has paid tremendous dividends in terms of creating jobs and energy savings, he said.

He also supported the Statewide Energy Policy in SB 220 that came from work the House Energy Committee did over the Interim. Having a statewide energy policy that looks at how Alaskans will get energy to light their businesses and heat their homes is a great idea. That will also make Alaska more competitive in the world economy.

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MR. ROSE said they hadn't vetted these ideas yet, but he thought they would support job training because the skills the industry needs have to be developed as well as technical assistance for people who want to continue running the existing and future systems. He thought they would support an energy efficiency grant fund and alternative energy for public buildings. Alternative energy for home owners, in sections 20-23, is an old program that would be revived and he thought it would have pretty high demand. Using more energy efficient appliances makes sense as well as taking the old inefficient ones out. Mr. Rose said it makes sense to have an energy plan like the one developed by Black and Veatch.

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CAITLIN HIGGINS, Executive Director, Alaska Conservation Alliance (ACA) and Alaska Conservation Voters, said she and her members applauded the co-chairs and committee for strong leadership and hard work on these issues. She said that the Alaska Sustainable Energy Act continues to put Alaska on an economically viable, sustainable, stable energy path for the future, a fundamental change that the conservation community has encouraged for a number of years. They strongly supported inclusion of SB 121 that would make state owned buildings more efficient. She was glad to see the state leading by example.

MS. HIGGINS said the Conservation Alliance felt so strongly about intensifying the need to be more energy efficient that they commissioned an energy economist at National Capitalism Solutions to develop a report that shows how the Railbelt could reach its goal for energy efficiency by 2025. The report should be released in the next several days.

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Support including goals for energy efficiency and encourage the committee to consider whether or not to push those forward, especially in uncodified statute. The plans goals would be more achievable and meaningful if they were found in codified language. The same is true of the committee's 50 percent renewable goal.

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They also support the committee's inclusion of SB 150, the EETF, another of the Alliance's priorities this session. They support the potential entrepreneurial and technological innovation created by the fund. Alaska's unique circumstances justify this local research and development effort and they think it can be done effectively and efficiently.

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SENATOR WAGONER asked if they favored the hydro projects.

MS. HIGGINS replied they are developing a hydro paper.

SENATOR WAGONER said that is a tough task, and he thought it may not even be possible.

CO-CHAIR WIELECHOWSKI asked if the ACA had looked at Chakachamna or Susitna.

MS. HIGGINS said they didn't have an official position.

SENATOR HUGGINS asked her what their position was on including nuclear power in this package.

MS. HIGGINS said she would have to take that issue back to her members.

CO-CHAIR WIELECHOWSKI said he wanted to hear their positions on hydro and nuclear power.

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GWEN HOLDMAN, Director, Alaska Center for Energy and Power (ACEAP) at UAF, commended the committee for its hard work on this issue. She said two sections were most important to their interests: the first is additional language in section 8 on the Renewable Energy Fund that mandates long-term data collection and reporting for projects. She said the AEA has done significant work upfront in considering cost/benefit analysis of projects that the fund considers, but following up with technical and economic performance data is need so that

additional long-term funding can be considered for more projects that make economic sense. She explained that ACEAP had been working with the ISER to collect performance data and install capital cost data for wind projects in Alaska and finally came to the conclusion that a lot of the data they were looking for actually just didn't exist because no one is being mandated to collect it.

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The other high priority section she said was section 11 that forms the Emerging Energy Technologies Grant Fund. The Denali Commission has already funded an initial trial run of this program and the Alaska Center for Energy and Power is currently managing it. However, the University would be happy to defer to the House version that designates AEA as providing that service. She explained that the University is really interested in the information on how successful the emerging technologies projects are, so they can use it to make decisions on future funding and conduct research in partnership with private entities to actually get some of the projects off the ground.

She said the Denali Commission has funded 11 projects for a total of \$7.5 million. A higher amount might be also be appropriate for this program, because it has enough projects that provide "real opportunities" and can also leverage federal dollars.

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MS. HOLDMAN said an example of one critical project is the integration of wind and diesel systems to reduce the amount of diesel fuel that is used. They are looking for ways to modify algorithms on Northwind 100 inverters that are part of the turbines that have pretty commonly been installed - primarily in villages - under the Renewable Energy Grant Fund to operate in a diesel off mode. It is not a commercial technology and therefore not appropriate for funding under the Renewable Energy Fund or other existing funding mechanisms. This is critical to Alaska, but not to the national research agenda.

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MS. HOLDMAN also mentioned that ACEAP participated in the House Energy Task Force and helped develop policy language in SB 220 that can set that overall future vision for the state that can provide focus for a lot of planning efforts.

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DENALI DANIELS, Sr. Energy Program Manager, Denali Commission, said that as a federal agency, the Commission typically doesn't weigh in on legislation; therefore her comments would be informational in nature. She said they appreciated the invitation for input on establishing a statewide energy policy.

She said the Commission has a local board agency that consists of their federal co-chair, Joel Neimeyer, and the Governor or his appointee; currently that spot is filled by OMB director Karen Rehfeld. Other members include Julie Kitka with AFN, John MacKinnon, Vince Beltrami, Karen Purdue at the University and Kathy Wasserman representing the Alaska Municipal League.

MS. DANIELS explained that the Commission uses an annual work plan and FY10 is now in draft form. The plan is used for grant making and was developed by an advisory committee within the Energy Program, which is chaired by Commissioner MacKinnon and has membership from Vince Beltrami who serves as chairman of the Renewable Energy Fund.

She said the Denali Commission is 11 years old and their enabling legislation was the result of a number of rural communities being out of EPA compliance with their bulk fuel tank farms (and were at the risk of being shut down by the Coast Guard). Shortly after, it was recognized that energy efficiency could be significantly improved by power plant replacement or upgrades. So the Bulk Fuel Program and the Rural Power System Upgrade (RPSU) have really been "our meat and potatoes," she said, and continues as one the Commission's major priorities.

MS. DANIELS said they have funded 100 bulk fuel projects, seven of which are now under construction, and 58 power system upgrades, 12 of which are now under construction. Funding over the last 11 years for both programs is around \$350 million. Around 60 percent of that is dedicated to the State of Alaska through the AEA; the remaining balance has over time been dedicated to Alaska Village Electric Cooperative (AVEC) and other direct grants to entities that for whatever reason are not under the NEA process. She emphasized that it is important to realize that other entities outside of the state program have substantial needs and are receiving funding from the Denali Commission also; these needs might even be a little bit greater than what they are projecting.

MS. DANIELS said the Commission is in discussions with the US Coast Guard and the EPA regarding the remaining infrastructure needs and ways to take different approaches in rural Alaska.

When the Commission began a lot of projects were at the highest need in terms of replacement or upgrade in the higher performing communities. But now, the most challenging communities are left.

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MS. DANIELS switched to the emerging technology program. She explained that the Energy Policy Act of 2005 established new authorities for the Denali Commission - one of which put the emphasis on alternative and renewable energy; but appropriations didn't accompany that authority. Yet the commissioners elected to dedicate funding to a new program that didn't have a name at the time, but it was the first step to what is now the Renewable Energy Fund under AEA.

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She related that the Commission dedicated \$4 million to identify a few projects outside of that and it has also dedicated close to \$8 million to emerging technologies over the last two years. In the summer of 2009 the competitive process involved a two-phase solicitation. Criteria in it included research, development or demonstration projects in Alaska that had a reasonable expectation to become commercially viable within five years or less. These pilot projects had to be replicatable elsewhere in Alaska.

MS. DANIELS said a review panel was formed and used to vet those projects. ACEAP did not serve on the panel but did observe the face-to-face presentations. She emphasized that ACEAP did not influence the decision making process whatsoever. She said they received 50 proposals totaling \$29 million in funding requests. They narrowed the proposals down to 15; 9 were selected from those; 5 were actually asked to reduce their budgets or to come up with additional match and all 5 were able to do so.

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She stated that the conflicts of interest on behalf of the committee members were handled on a case-by-case basis. Members either abstained from deliberation or in some cases left the room depending on the nature of the decision. The conflicts are documented through minutes. In terms of administration, she said, the Denali Commission remains neutral. It's important that ACEAP remains involved from a data collection and reporting standpoint, and she reported that they were able to keep within the administrative cap of 5 percent.

MS. DANIELS noted that all stakeholders are working together to make this work; the Denali Commission has \$2.24 million

dedicated to the program in its plan. However, the commissioners want the state to see this as a priority or they will reallocate the funding to other programs.

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She said that bulk fuel funding is in the work plan in the amount of just under \$9 million; \$10 million is marked for rural power system upgrades - for a total of \$20 million for energy infrastructure in Alaska.

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SENATOR WAGONER asked what the future for federal funding is for the Denali Commission.

Ms. DANIELS replied that their federal funding is declining. The work plan is based on the most optimistic outcome for FY10 and their budget is only \$60 million - down from \$150 million in 2005 - and it's fair to expect that to continue. So, it's important for the state to be involved.

SENATOR WAGONER asked if they had considered setting up an enterprise fund for the future maintenance of the rural bulk fuel facilities. So if money is not available through a state or federal grant the facility could still be maintained.

MS. DANIELS answered that a business plan is required to receive funding, and that includes a repair and renovation fund.

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BRIAN HIRSCH, National Renewable Energy Laboratory (NREL), reviewed his professional background and credentials in the US and in Alaska. He said that NREL is the nation's premier government-owned laboratory focused exclusively on energy efficiency and renewable energy and it is based in Colorado. Traditionally, it has been research based and focused on high tech solutions. For instance, they are involved in developing sophisticated coatings for solar panels that will ideally become even more cost effective and produce lower-cost power.

He said those inventions have contributed to the US technological lead over the years, but over the last decade or so these kinds of solutions have lacked focus. Now NREL and much of the Department of Energy have refocused on what is called "Integrated Deployment," a fancy phrase for "boots on the ground" to move projects forward.

MR. HIRSCH said that typically NREL doesn't have satellite offices like it does in Alaska. Their Antarctica operation is not a full office, but its technology solutions program is focused on some of the same challenges Alaska faces. But in many ways Alaska is already a world leader in some of these technologies - in particular, activities in high penetration wind/diesel systems, combined heat and power for biomass, enhanced geothermal energy storage of various types, tidal and hydro kinetic energy technologies, and wringing the last possible bit of energy from diesel fuel.

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He drew their attention to a recent federal grant solicitation that provided over for \$1 billion for smart grid technologies to 49 states. The only state that did not receive money was Alaska. The point here is not that anybody was out to get Alaska, but that the challenges are so different here that Alaska didn't really fit their grant criteria and got overlooked. That led him to believe that Alaska needs to take care of itself and solve its own problems.

MR. HIRSCH said at the national level a model for the Emerging Energy Technologies Fund was implemented in February; some know it as the Stimulus Act or the American Recovery Reinvestment Act. In it the "Advanced Research Project Agency - Energy Act (ARPA-E)" was modeled after Department of Defense legislation that funded very experimental technologies that had high risk, but very high potential yields if they were successful - recognizing that these projects wouldn't immediately lower the cost of energy in rural Alaska. Alaska is as extreme as anywhere in the world with its tremendous renewable resources in the summer time, but a lack of them in the winter. So storage is huge for either renewable or non-renewable energy sources, and these are the kinds of opportunities that an Emerging Technologies Fund would be addressing. The ARPA-E legislation has provided \$450 million at the national level to look at some of these high-risk but high-potential-yield technology solutions.

SENATOR WAGONER asked how the Ruby project worked this summer.

MR. HIRSCH replied that it worked well for learning a lot; it had some basic technical problems that had nothing to do with the turbine itself. The underwater power cable that brought the power to shore had a short and didn't produce a lot of energy, but they learned a lot about impacts to fisheries and debris

floating down the river and how to better integrate the power with the existing local diesel grid.

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SENATOR HUGGINS commented that this bill has great elements in it like section 19 on page 13 that talks about the transition fuel, natural gas, and storage is a major component of natural gas. So, he encouraged people to keep an eye on that ball in the near and mid-term, because no matter how much we wish for renewables and wish for them soon, gas is what works now.

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CO-CHAIR WIELECHOWSKI thanked everyone for their comments and finding no further business to come before the committee, adjourned the meeting at 4:55 p.m.