ALASKA STATE LEGISLATURE
SENATE SPECIAL COMMITTEE ON WORLD TRADE, TECHNOLOGY AND INNOVATION
February 18, 2009
5:19 p.m.

MEMBERS PRESENT

Senator Lesil McGuire, Chair
Senator Hollis French
Senator Gary Stevens
Senator Bill Wielechowski

MEMBERS ABSENT

Senator Lyman Hoffman

OTHER LEGISLATORS PRESENT

Senator Charlie Huggins

COMMITTEE CALENDAR

Workforce Development in Alaska
HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record.

WITNESS REGISTER

LARRY LEDOUX, Commissioner
Department of Education & Early Development
Juneau, AK
POSITION STATEMENT: Discussed workforce development in Alaska.

FRAN ULMER, Chancellor
University of Alaska Anchorage
Anchorage, AK
POSITION STATEMENT: Discussed workforce development in Alaska.

CLICK BISHOP, Commissioner
Alaska Department of Labor & Workforce Development
Anchorage, AK
POSITION STATEMENT: Discussed workforce development in Alaska.

FRED ESPOSITO, Director
Division of Business Partnership
Alaska Vocational Technical Center
Department of Labor and Workforce Development
Seward, AK
POSITION STATEMENT: Discussed workforce development in Alaska.

ACTION NARRATIVE

5:19:03 PM
CHAIR LESIL MCGUIRE called the Senate Special Committee on World Trade, Technology and Innovation meeting to order at 5:19 p.m. Present at the call to order were Senators French, Stevens, Wielechowski and McGuire.

Workforce Development in Alaska

5:19:20 PM
CHAIR MCGUIRE announced the agenda today is to hear about workforce development - preparing Alaskans for jobs in emerging careers and alternative energy technologies. The Senate has been working on energy policy. Last year they passed a weatherization package, and the budget and audit committee just approved $100 million in grants through the Alaska Energy Authority for alternative energy projects statewide. Hopefully many of the people working on these projects will be young Alaskans, she said.

CHAIR MCGUIRE recognized Commissioner Larry LeDoux, Commissioner Click Bishop, Chancellor Fran Ulmer, Chancellor Brian Rogers, and Fred Esposito.

5:21:33 PM
LARRY LEDOUX, Commissioner, Department of Education and Early Development (DEED), said he started his career as a technical teacher in electronics communication and he likes to talk about what he used to do. He posited that one of the best things happening today in career and technology education (CTE) is Click Bishop, commissioner of the Department of Labor and Workforce Development (DOLWD). In Alaska today fewer K-12 students are enrolled in career and technical programs than in 1998. DOLWD has developed a number of programs and DEED is attempting to catch up and mesh with them. This is different than in most states. Usually it's high schools or K-12 that takes the lead in career and technical education and beg the department of labor to work with them. It's the opposite here in Alaska and DEED is eager to catch up and work together.

Last year about 17,000 students in Alaska took one career technology course. Approximately 1,000 students took two courses that were related in a career cluster. Almost 3,000 students participated in "tech prep" programs. He'd like more enrollments. Within Alaska there are 172 comprehensive high schools; magnet career technology schools in Fairbanks and Wasilla; career focus programs in Anchorage, MatSu and Nome; construction academies in Anchorage, Fairbanks, MatSu, Kenai, Juneau and Ketchikan; several boarding schools; a learning academy in Galena; a living center in Nenana; and a vocational technical program at Mount Edgecombe High School. A number of other programs exist under temporary grants including the Sitka Career Consortium and a health career program in Bethel.

5:25:34 PM
Expanding K-12 career and technical education to include alternative and renewable energy makes perfect sense and moves in concert with President Obama's stated goal of doubling the use of renewable energy in three years. However, no specific programs have been approved in the K-12 system in Alaska, so any programs that do exist are based on innovations of teachers and principals. For example: the Bristol Bay High School has a program to rebuild a car to make it energy efficient; the MatSu construction program emphasizes energy efficient windows and mold prevention; the Nome JROTC has incorporated the Young Engineers' program; and the Cordova Energy Center developed an interactive website and is exploring ways to generate energy using community resources and ways to conserve energy. It's an exciting synergy that goes on when these kids work together, he said. In Sitka the Alaska Energy Careers was grant funded and in Kodiak students are actively involved in designing energy efficient buildings.

COMMISSIONER LEDOUX said a lot of good things are happening, but there isn't a comprehensive program that connects to programs being developed at AVTEC or the University of Alaska. The challenges of developing a comprehensive program in energy technologies are the same that they face in CTE. They don't have the curriculum, the specialized teachers, the facility space or the funding. Most vocational directors, principals and superintendants would say that when the Legislature went to block funding of career and technical education, the money flowed away from specific programs.

Strengths of the program include DOLWD and UAA. The latter generates hundreds of two-year graduates in career and technical

fields. Industry partnerships are strong and help keep programs alive by contributing money, expertise, materials and space. Potential and developing programs include: the STEM (science, technology, engineering and math) project, the Nome and Bering Straits wind farm, construction academies to train auditors, and the electric coop in Kodiak.

5:31:08 PM
COMMISSIONER LEDOUX said possibilities for the future include: developing a comprehensive and approved K-12 energy curriculum; getting the state to sponsor competitions in renewable energy innovations; developing a tech prep program in renewable energy careers in conjunction with DOLWD, AVTEC and the university; and making available innovative energy renewable mini-grants to schools. The Alaska Science and Technology Foundation used to fund mini grants. "If you ever had a chance to see what young people were able to produce with $5,000 and the innovative research that they were able to conduct, those programs never would have left," he said.

5:32:35 PM
CHAIR MCGUIRE said thank you, particularly for highlighting what the students in Cordova and Bristol Bay are doing.

5:32:56 PM
FRED ESPOSITO, Director, Division of Business Partnership, Alaska Vocational Technical Center (AVTC), Department of Labor and Workforce Development, introduced himself.

CLICK BISHOP, Commissioner, Department of Labor and Workforce Development, introduced himself and thanked Commissioner LeDoux for his kind words. It's a pleasure to work with him and it's also a pleasure to have Chancellor Ulmer here. "I'm a coalition builder … It's a real pleasure to work with the university system and education and we are working closely together," he said.

5:35:07 PM
COMMISSIONER BISHOP paraphrased a letter he wrote to the university to set the tone for where labor, education and the university is going in the field of workforce development and innovations in green technology.

> Dear President Hamilton: I'm seeking your support to develop a strategy for the post-secondary system for career and technical education in this state to ensure that they are aligned to train and educate our

> citizens without needless duplications of programs and investments. Hopefully you will join me in this endeavor to make sure that we position the state of Alaska to be in the right place at the right time with the right programs to assist Alaskans in getting quality jobs in Alaska, maximizing Alaska resident hire overall and reducing the number and amount of wages that are leaving our state.

We're working together to cut out the duplication of services, strengthen programs individually and move forward, he said.

COMMISSIONER BISHOP said he reads a lot and isn't short on vision and he knows that with technology you have to look ahead three to five years. About eight months ago he told Mr. Esposito that he'd seen or heard about wind turbines in Nome, Kotzebue and other villages in Alaska and that to his knowledge nobody was delivering the hands-on training on repair and maintenance of the turbines. He wants to be able to deliver that training in the state. The same applies to hydro technology. In Seward there is the ability to do hydro training.

5:38:20 PM
FRED ESPOSITO said the AVTEC mission statement is "To train a diverse and effective workforce that supports the economic growth and stability of our state." That encompasses looking forward and to the future for technologies that will impact our workforce.

AVTEC is a component of DOLWD and has been providing career training since 1969. It is based in Seward and has distance delivery and a program in Anchorage. Last year about 1,200 students were enrolled in job preparatory and upgrade training programs. For quite some time AVTEC has been partnering with the Alaska Energy Authority (AEA) to provide an eight week training for diesel power plant operators. AEA recruits operators from the communities it serves and AVTEC provides the training in a working power plant that has four diesel generators hooked into a switch gear system. In conjunction with operator training, AVTEC provides bulk fuel plant operator training. It's a good combination because the diesel operator in a community frequently operates the bulk fuel plant as well. Those operators have to abide by OSHA safety rules and make efficient use of their fuel.

5:40:46 PM

Under direction from Commissioner Bishop, AVTEC is looking at what it can do to address the need for alternate energy job training. Some years ago the City of Seward had a small hydro electric plant, but for various reasons it was mothballed. Now AVTEC is working with the city and AEA to find money to clean out the penstock, upgrade the electrical system and return the plant to operation. It will be used in training and to generate electricity.

5:42:00 PM
CHAIR MCGUIRE noted that Senator Huggins had joined the committee.

COMMISSIONER BISHOP said his thought was that getting the hydro plant back on line could lower operating costs in Seward and the savings could be used in other areas where upgrades in tooling and curriculum are needed. He's a big hydro fan.

CHAIR MCGUIRE asked how much power the plant can generate.

MR. ESPOSITO explained that the plant can generate 250 kilowatts, but the available water flow is capable of producing just 100 kilowatts. He noted that when the plant was in operation previously, all training took place at the Hoover Dam. The current program is much more "Alaskanized" and keeps the training and students here.

CHAIR MCGUIRE observed that there might be potential to replicate this model in other parts of Alaska.

MR. ESPOSITO agreed. As more hydro facilities are built they'll learn more about how to integrate those with diesel power generation. Then they can start to talk about the integration of alternative energy sources with standard energy sources. That's where the real benefit will come because communities are faced with not only adding alternative energies but how to integrate two or three sources to make a viable energy system.

5:44:22 PM
About a year ago and working in conjunction with AEA, AVTEC installed a meteorological tower to study wind potential in Seward. Recently they submitted an application for a renewable energy grant to purchase and install a wind turbine on the AVTEC Seward campus. They'll tie in to the existing diesel plant and be able to show and teach integration of two different energy sources. If this project is successful, AVTEC will be able to

provide hands-on training and create a world-class wind-diesel operator training program.

CHAIR MCGUIRE assumed they are watching for ways to integrate with the federal stimulus package. She also suggested they watch for the net energy metering bills because that would probably reduce the overall cost of running the training facility.

COMMISSIONER BISHOP said the possibility of raising revenue for the school was a factor in his wanting to get the hydro plant and wind turbine up and running. President Obama said he'd like to double the number of wind turbines in the U.S. in the next two years. I want Alaska to be on the front end with respect to having a skilled trained workforce to maintain the turbines in the state, he said.

5:47:12 PM
MR. ESPOSITO displayed an overhead view of the AVTEC Seward campus and explained that the proposed site for the wind turbine is next to the existing diesel generation power plant and the switch gear. This will allow low cost integration of the two power sources.

The objectives are:
1) To establish a world-class wind-diesel program that supports the interests of Alaska stakeholders including wind-diesel system owners and operators, the Rural Alaska Electric Cooperatives and the Alaska Energy Authority.
2) To create hands-on education opportunities at an on-campus wind-diesel power plant.
3) To utilize standardized, proven and relevant technologies for Alaskan applications.

As Commissioner LeDoux mentioned, a K-12 outreach program is envisioned. The idea is to get young Alaskans interested in emerging energy technology careers. At this time there are no wind-diesel training programs in Alaska. Previously AEA sent students to Vermont for training. Currently there are about 20 utility-scale wind projects in operation statewide and about 23 percent of the applications for renewable energy fund grants were for wind energy projects.

CHAIR MCGUIRE commented that legislators have been told repeatedly that it’s the fastest growing alternative energy.

5:50:08 PM

COMMISSIONER BISHOP commented that those 20 utility-scale wind projects don't consider the mom and pop setups that are scattered throughout the state, and there are a lot of them. The idea is to share the curriculum they're developing with the university and K-12 systems so residents across the state can learn to service their own turbines.

5:51:32 PM
MR. ESPOSITO outlined some of the benefits of the AVTEC program:
1) Training will take place in Alaska.
2) The program will be based on the existing and successful AVEC (Alaska Village Electric Cooperative) training program.
3) In-state training will cost less and provide opportunity for expanding the curriculum.
4) The estimated savings for not sending students out of state for training is $97,000 per year.
5) Payback is estimated in about 6.5 years if some of the wind turbine energy offsets electrical costs at the campus.

COMMISSIONER BISHOP added that they also have their eye on the stimulus money through the federal department of labor that is grant driven for green energy technology.

CHAIR MCGUIRE asked about geothermal.

MR. ESPOSITO said some folks from Russia have inquired about geothermal training and AVTEC wants to look instate for those opportunities.

SENATOR HUGGINS asked who AVTEC partners with.

MR. ESPOSITO replied AVEC, the existing energy cooperatives, the K-12 system and the University of Alaska would all be potential partners to develop this program.

SENATOR HUGGINS asked if AVTEC is up to the challenge of managing the system integrations.

MR. ESPOSITO replied it really comes down to software. The specific wind turbine AVTEC is looking to install has a smart software monitoring system that will allow AVTEC to mimic what's going on in smaller communities where the integration of wind and diesel is occurring. We'll be able to look at the different situations they'll run into.

5:56:22 PM
SENATOR HUGGINS asked if an Anchorage vender is a player.

MR. ESPOSITO replied the most common installation in rural Alaska is the North Wind 100 wind turbine that's manufactured in Vermont. That's the type AVTEC is talking about installing.

CHAIR MCGUIRE thanked Commissioner Bishop and Mr. Esposito and said the committee looks forward to hearing updates.

5:57:13 PM
FRAN ULMER, Chancellor, University of Alaska, Anchorage, said she will talk briefly about the role the university might play to help the state move into a green job economy, about education and training for the new economy, and the challenges she sees.

The University of Alaska has major campuses in Anchorage, Fairbanks and Juneau and about a dozen community campuses throughout the state. She will talk primarily about UAA, which has 20,000 of the 30,000 total statewide student body.

The emerging green job potential within the state and nationally could have a powerful impact on "growing our own" in a sustainable and renewable way that could cut energy costs. That is a goal and the university can assist in four major ways: 1) as a trainer 2) as an innovator – as a way of transferring knowledge from research into the field 3) as a partner – being able to add and offer technical expertise and 4) as a facilitator – trying to make sure that the various entities reach a common objective.

6:00:01 PM
As a trainer - Training and education is the core of what the university does. It's important that high school students are not only graduating with strong math and science skills but also reading, writing, computer and the ability to learn new skills. The most important thing we can be doing at all levels of education includes the basic building blocks, but it's also important to train and educate people to adjust. The world we see today will change so it's not just specific job training for specific career paths; it's the broader goal of an educated citizenry.

Each university campus has very specific and varied job training career paths. She displayed a chart and mentioned finance, air traffic controllers and culinary arts. The range is from certificates and associate degrees through four year degrees and masters. The point is to make it easy to think about alternative careers, the education/training requirements and the kind of job

you could get. Career pathways are an important part of what the university does.

As an innovator - Research is important at all campuses but UAF has the lion's share. The energy field in particular is something UAF has worked on for a long time. We are hopeful we can make the technology transfer part of decision making.

As a partner – The university partners with various entities including DOLWD, DEED and the administration in general. Those partnerships help everyone do a better job.

As a facilitator – We need to grow entrepreneurs as much as we need to grow nurses, engineers and dental hygienists. We can do a better job focusing on business development and providing competitions to grow the next generation of entrepreneurs. There are institutes and research centers at UAA and UAF and programs at UAS that are working toward this goal, but more work needs to be done.

6:03:46 PM
CHANCELLOR ULMER recapped that there's training and education, there's research, there's entrepreneurial development, there's transfer of innovations and technology to industry, communities, individuals, and there are partnerships. When you talk about the current training and education at the University of Alaska to support a green energy economy, you have to mention that alternative energy jobs will be in construction, installation, operations and management, and economic analysis and research on feasibility of projects. Construction management is a strong program at UAA. Engineering is a very strong program at UAF and UAA. She noted that currently the UA system is graduating about 100 engineers a year at the two campuses and the regents want to double that number. Engineering companies, the oil and gas industry, the mining industry and the construction industry would like even more, but that's the current goal. We're on track to do that, she said. The university capital budget request is $25 million to grow those two engineering programs. Whether you're talking about alternative energy development or the existing oil and gas industry or any number of our resource development economies, we need more engineers and we need to grow our own.

6:05:28 PM
SENATOR HUGGINS asked if those dollars are in the budget.

CHANCELLOR ULMER replied the $25 million is a capital request, which is not in the governor's request. It's in the regent's request to the legislature. It would be for planning and design work for facilities expansion at UAA and UAF. We consider that an extremely important building block for both traditional energy development and alternative energy development. That's an important piece of the puzzle.

SENATOR MCGUIRE asked about attracting and retaining educated intellectually curious people from Outside to come and be trained in these engineering programs.

CHANCELLOR ULMER replied it's always a good idea to attract new energetic people who will help build Alaska's future, but as chancellor her first responsibility is to create slots in the engineering school, nursing school, accounting school, business school, and logistics program for Alaskans. She wants them to get the education and training necessary so they can get these great jobs. About half the engineers currently licensed in Alaska got their training and license Outside. We want to grow our own, she said. Arctic engineering and other things that are taught as a part of the engineering programs at both UAA and UAF are important for the people who are doing business here. We hear from engineering firms that have to recruit Outside that it's expensive and challenging to get those recruits to stay in Alaska. Once they're here they have to learn a lot about doing business and doing engineering in Alaska. It's important to think about how we can build not only the alternative energy economy but also the gas line and a variety of other major projects that we hope will be a part of Alaska's future, she said.

6:08:21 PM
SENATOR FRENCH commented that when he recently met with some UAA engineering students one described a class project he had developed to study small-scale renewable-energy projects in Girdwood similar to what Mr. Esposito described in Seward. People would receive training to install and maintain these systems and they'd take that training into the Bush. He said he couldn't have been more impressed; the work and thought that went into that project was remarkable. This is what this committee is trying to get at, he said.

CHANCELLOR ULMER said she has been briefed on that project; they're trying to work with the municipality to see if there's enough synergy to make something happen. It's early in the process and hasn't been thoroughly vetted by the university, but

the students and faculty are excited about it. There are so many good ideas and it makes no sense to work independently without talking to each other. Forums like this are a good idea to listen and learn from each other. It's good news that there is a lot of open dialog and cooperation at all levels.

6:10:58 PM
CHANCELLOR ULMER said that when there is so much going on it's a challenge to get your arms around it. I don't have the answer here tonight, but there is a phenomenal amount of good things happening in the UA system that I'm very proud of, she said. The logistics center is fabulous and the Masters in Project Management is one of only 18 accredited programs in the world. In fact, Alaska Airlines has contracted with UAA to teach project management to its executives. Project management, construction management, engineering, logistics and a whole array of technical programs are all good news stories that fit together with the alternative energy economy of the future.

She said you should be proud of our strong university that has strong programs throughout the state that are working together to make the most for our students, for your constituents and for the state's economy. She thanked the committee for its best efforts to create the opportunities for everyone to learn from each other, listen to each other and, hopefully, work better together.

CHAIR MCGUIRE thanked Chancellor Ulmer and said this committee means to open the dialog and put legislative support in the right places. She said she agrees that training Alaskans is the number one goal but in terms of long-term planning, it could be that a part of this economy ends up being expertise and training much as you talked about global logistics and project planning. There are other countries that have become experts in geothermic energy and people fly in from around the world to get that kind of training. It's a part of their economy. It's something to think about but we have to get our own trained first, she said. I appreciate that that's where your heart is, she added.

6:14:00 PM
CHAIR MCGUIRE adjourned the Senate Special Committee on World Trade, Technology and Innovation meeting at 6:14 pm.