

ALASKA STATE LEGISLATURE
HOUSE SPECIAL COMMITTEE ON ENERGY

February 19, 2015
10:22 a.m.

MEMBERS PRESENT

Representative Jim Colver, Co-Chair
Representative Liz Vazquez, Co-Chair
Representative David Talerico
Representative Cathy Tilton
Representative Matt Claman
Representative Adam Wool

MEMBERS ABSENT

Representative Benjamin Nageak

COMMITTEE CALENDAR

HOUSE JOINT RESOLUTION NO. 8

Urging the federal government to empower the state to protect the state's access to affordable and reliable electrical generation.

- MOVED FISCAL NOTE; MOVED CSHJR 8(ENE) 2/17/15

PRESENTATION: XCEL ENERGY INC.

- HEARD

PRESENTATION: ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

- HEARD

PREVIOUS COMMITTEE ACTION

BILL: HJR 8

SHORT TITLE: FEDS ALLOW STATE TO MAKE ENERGY CHOICES

SPONSOR(S): REPRESENTATIVE(S) TALERICO

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|----------|-----|---------------------------------|
| 01/23/15 | (H) | READ THE FIRST TIME - REFERRALS |
| 01/23/15 | (H) | ENE, RES |
| 02/03/15 | (H) | ENE AT 10:15 AM CAPITOL 17 |
| 02/03/15 | (H) | Heard & Held |
| 02/03/15 | (H) | MINUTE(ENE) |
| 02/17/15 | (H) | ENE AT 10:15 AM BARNES 124 |

02/17/15 (H) Moved CSHJR 8(ENE) Out of Committee
02/17/15 (H) MINUTE(ENE)

WITNESS REGISTER

TERESA MOGENSEN, Vice President Transmission
Xcel Energy Inc.
Minneapolis, Minnesota

POSITION STATEMENT: Participated in a PowerPoint presentation by Xcel Energy Inc. entitled "Collaborative Approach to Unified System Operations."

DANIEL KLINE, Director Strategic Transmission Initiatives
Xcel Energy Inc.
Minneapolis, Minnesota

POSITION STATEMENT: Participated in a PowerPoint presentation by Xcel Energy Inc. entitled "Collaborative Approach to Unified System Operations."

CHERYL BREDENBECK, Director Transmission Investment Development
Xcel Energy Inc.
Minneapolis, Minnesota

POSITION STATEMENT: Participated in a PowerPoint presentation by Xcel Energy Inc. entitled "Collaborative Approach to Unified System Operations."

MIKE BLACK, Director
Rural Utility Management Services
Alaska Native Tribal Health Consortium
Anchorage, Alaska

POSITION STATEMENT: Participated in a PowerPoint presentation entitled "Reducing Energy Costs for Water Systems in Rural Alaska."

MICHAEL NABERS, Operations Engineer
Alaska Rural Utility Collaborative
Alaska Native Tribal Health Consortium
Anchorage, Alaska

POSITION STATEMENT: Participated in a PowerPoint presentation entitled "Reducing Energy Costs for Water Systems in Rural Alaska."

ACTION NARRATIVE

[10:22:20 AM](#)

CO-CHAIR LIZ VAZQUEZ called the House Special Committee on Energy meeting to order at 10:22 a.m. Representatives Wool, Talerico, Tilton, Claman, and Vazquez were present at the call to order. Representative Colver arrived as the meeting was in progress.

HJR 8-FEDS ALLOW STATE TO MAKE ENERGY CHOICES

[10:22:51 AM](#)

CO-CHAIR VAZQUEZ announced that the first order of business would be HOUSE JOINT RESOLUTION NO. 8, Urging the federal government to empower the state to protect the state's access to affordable and reliable electrical generation. She stated the committee would move the fiscal note to accompany CSHJR 8(ENE).

[CSHJR 8(ENE) was previously reported from committee on 2/17/15.]

[10:23:14 AM](#)

REPRESENTATIVE TILTON moved to report out of committee Fiscal Note, Identifier: HJR 8 HENE FN 1, to accompany CSHJR 8(ENE). There being no objection, it was so ordered.

PRESENTATION: XCEL ENERGY INC.

[10:23:36 AM](#)

CO-CHAIR VAZQUEZ announced that the next order of business would be a presentation by Xcel Energy Inc.

[10:23:53 AM](#)

The committee took an at ease from 10:23 a.m. to 10:26 a.m.

[Audio from 10:26:01 a.m. to 10:26:28 a.m. not recorded due to technical difficulties.]

[10:26:31 AM](#)

TERESA MOGENSEN, Vice President, Transmission, Xcel Energy Inc., informed the committee that Xcel Energy can provide prospective, experience, and resources helpful to Alaska. The following presentation included a brief background on the company, its understanding of the Alaska Railbelt, its experience in leading collaborative transmission development, and suggestions. Xcel

Energy is a major integrated utility that provides generation, transmission, distribution, gas, and renewable power in portions of the Lower 48 through retail service in eight states and through transmission in ten states. As an energy transmission leader, Xcel Energy also provides wind energy with a focus on energy efficiency, solar power, and voluntary emission reductions (slide 2). Xcel Energy is part of two regional transmission organizations (RTOs) - also known as independent system operators (ISOs) - and additionally serves an area without an RTO. Xcel Energy is part of three National American Electric Reliability Corporation (NERC) regions that govern reliability standards, and is implementing \$4.5 billion of investment. In response to Co-Chair Vazquez, she explained an RTO is a concept of a system operator that has oversight and control of regional functions such as planning, establishes a single transmission tariff for all of its members, and controls dispatch. In further response to Co-Chair Vazquez, she said MISO stands for Midcontinent Independent System Operator and SPP stands for Southwest Power Pool, both of which are RTOs.

MS. MOGENSEN further explained that NERC is the governing regulator of system performance reliability standards for transmission operations, and provides an array of mandatory standards with which utilities must comply. Xcel Energy has the capability to perform all aspects of an investment in transmission such as engineering, construction, design, and planning, and incorporates its partners for materials and services (slide 3). She illustrated the following parallels between Xcel Energy's experiences and situations in Alaska (slide 4):

- establishing ISO or USO = Xcel's experience working with ISOs
- transmission build out = Xcel's build out in New Mexico
- generation diversification = Xcel's array of programs in Colorado and Minnesota
- renewables integration = Xcel's forecasting capabilities to integrate renewables
- conservation & community = Xcel's focus on conservation in community organizations

[10:32:54 AM](#)

DANIEL KLINE, Director, Strategic Transmission Initiatives, Xcel Energy Inc., shared Xcel Energy's understanding of the situation in the Alaska Railbelt: Currently, as a result of individual

utility system planning, the utility system lacks a planned approach; in addition, customers and government leaders are concerned about the cost of energy throughout Alaska. The solution is a regionally planned transmission system with economic dispatch which will result in lower electricity costs, will increase system reliability, and will enable energy supply options for the utilities and their customers (slide 6). Mr. Kline pointed out that the committee has heard from several organizations including the Alaska Railbelt Cooperative Electric and Transmission Company (ARCTEC), and the Renewable Energy Alaska Project (REAP), discussing the USO approach; in fact, the utilities and ARCTEC have made a significant amount of progress toward establishing the foundation for a USO, and the guiding principles are sound. He opined establishing a USO is necessary to deliver certain economic benefits (slide 7). Study efforts by the utilities and the Alaska Energy Authority (AEA), Department of Commerce, Community & Economic Development, have led to the Railbelt Transmission Integration Plan, which identified \$903 million in transmission projects; furthermore, completing these projects and implementing regional economic dispatch would result in benefits 3.4 times the cost of the projects. He said an estimated cost benefit ratio of 3.4 demonstrates that there is an opportunity to "make the Alaska Railbelt energy system function better" (slide 8).

MR. KLINE advised considerations for the legislature include support from policymakers, regulators, and state leaders; in addition, it is important that the legislature ensure that the Regulatory Commission of Alaska (RCA) holds the needed regulatory authority, which is unclear at this time. Historically, state funding has been provided to finance utility projects in the Railbelt region; however, a new financing model is now necessary. Finally, Mr. Kline urged that the legislature review lessons to be learned from endeavors elsewhere in the nation (slide 9).

[10:38:39 AM](#)

CHERYL BREDENBECK, Director, Transmission Investment Development, Xcel Energy Inc., described a region in the Midwest that experienced over ten years of failed efforts to organize transmission development because the affected utilities resisted giving control to a single entity, such as an ISO. In addition, transmission investment decisions in the region were paralyzed, and the transmission system was stressed by business development, area growth, generation diversification, congestion, and reliability problems. At this point, state and

federal regulators sought to stimulate transmission investment (slide 11). In 2004, stakeholders began a collaborative approach to grid expansion, beginning with four utilities and growing to eleven organizations including electric cooperatives, municipal generation and transmission entities, and investor-owned utilities. The collaborative organization covered areas of Minnesota, Wisconsin, North Dakota, and South Dakota. Xcel Energy led the effort, which may have been the first coordinated regional approach in the Lower 48 (slide 12).

[10:41:45 AM](#)

REPRESENTATIVE TALERICO asked whether private power producers were involved in the collaboration.

MS. BREDENBECK answered that there were no independents. She continued to explain that the eleven utilities invested \$2 billion to build 700 miles of 345 kilovolt (kV) transmission and 70 miles of 230 kV transmission; in order to complete these projects, regulators and policymakers came to a "no regrets" agreement that the projects were critical to address common needs and to accommodate future growth in the region. Also, the projects provided transmission capacity to support energy supply options and to implement energy policies (slide 13). The structure for collaboration was for four projects and required that the group of eleven utilities adopt core principles on how to implement the projects. Overarching the projects was a team designated CapX2020, whereby all parties participated in long-term planning and stakeholder management under a committee structure; however, each stakeholder could elect to contribute capital to projects selected by the stakeholder. Participation in each project was not all the same, there was a construction lead on each project, and only Xcel Energy participated in each project in some leadership role. She stressed there was continued collaboration and a committee management structure which led to a group of agreements to administer the projects, including an owner agreement, a construction management agreement, a capacity exchange agreement, and an operation and maintenance agreement. Further, the entities took ratios of ownership in proportion to their investment of capital (slide 14). The expansion's key success factors were the enactment of enabling legislation, such as revenue measures and incentives, and collaboration throughout all phases by the stakeholders. She noted that CapX2020 Phase 1 implementation is nearing completion and its economic impact has been estimated at \$4 billion. In addition, stakeholders continue to collaborate (slide 15).

REPRESENTATIVE WOOL asked whether Xcel Energy began as a power provider and then expanded into a USO.

[10:47:42 AM](#)

MS. BREDENBECK answered that Xcel Energy ultimately became an RTO in the area and performed some of the USO functions as a member of the USO, but was not the administrator. The projects are planned through the RTO planning process, and reviewed through the USO structure, to determine their worthiness. In further response to Representative Wool, she said Xcel Energy is a power provider.

MS. MORGENSEN expressed Xcel Energy's willingness to establish a long-term partnership with Alaska utilities and stakeholders to transform the transmission system in a manner similar to the CapX2020 case study. In the case study, Xcel Energy was one of the utilities and MISO was the ISO, thus Xcel Energy can use its experience to speed implementation in Alaska. Xcel Energy is willing to invest with Alaska utilities to construct identified - and not yet identified - transmission facilities in order to alleviate state funding. Also in a manner similar to CapX2020, Xcel Energy would address system operations and economies of scale (slide 17). The model for implementation offered by Xcel Energy proposes the legislature would set the energy policy for Alaska, RCA would implement the policy, and the function of a USO would be to have independent power system operational oversight and control. She clarified that the USO would not run the system, but would hold governance independent of either generation owners or transmission owners. The transmission owners are invested in transmission assets and run day-to day operations; generation owners provide energy supply options to power plants (slide 18).

MS. MORGENSEN described the tasks undertaken by each entity (slide 19):

- the legislature would define a model for the Railbelt electrical system based on the [forthcoming RCA cost/benefit report due 6/25/15], clarify RCA authority, and incent utility participation
- RCA would define the attributes of a USO, validate and adopt the "Railbelt Plan", set resource planning and reliability standards
- the USO would perform economic generation dispatch, administer transmission tariff and revenue requirements,

run generator interconnection processes and regional transmission planning processes

- transmission owners would construct, operate, and maintain the transmission grid, and the utilities would hold assets
- generation owners would negotiate power purchase agreements, respond to dispatch instructions by the USO, pay tariff
- Xcel Energy proposes to provide assistance to speed implementation, and to become a transmission owner in conjunction with Alaska utilities

[10:56:58 AM](#)

REPRESENTATIVE WOOL surmised that Xcel Energy would invest in transmission system infrastructure and partner with local utilities in owning proportionate shares of the transmission system.

MS. MORGENSEN said Xcel Energy proposes that if the state proceeds with the "Railbelt Plan," Xcel Energy would construct portions of the plan in collaboration with others. Regardless of ownership, all of the assets would be under the governance of the USO. In addition, Xcel Energy proposes to lead the collaborative transmission-owner approach; however, all entities maintain ownership of their assets.

CO-CHAIR VAZQUEZ asked about the membership of the USO board of directors.

MS. MORGENSEN responded that a USO is usually governed by a board of directors - which is independent from market participants - in conjunction with stakeholders, advisory committees comprised of transmission and generation owners, and renewable energy and consumer advocates.

CO-CHAIR VAZQUEZ concluded that utilities would not be voting members of the board.

MS. MORGENSEN said no. In further response to Co-Chair Vazquez, she explained the purpose is to assure independence from market participants and make decisions that seek the lowest cost energy and provide fair and impartial administration of operations.

[11:01:21 AM](#)

REPRESENTATIVE WOOL recalled previous testimony that utilities may have seats on the board of directors, but would not dominate the board.

MS. MORGENSEN acknowledged that organizations often evolve to an independent board.

[11:02:49 AM](#)

The committee took an at ease from 11:02 a.m. to 11:13 a.m.

PRESENTATION: ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

[11:13:21 AM](#)

CO-CHAIR VAZQUEZ announced that the next order of business would be a presentation by the Alaska Native Tribal Health Consortium.

[11:13:25 AM](#)

MIKE BLACK, Director, Rural Utility Management Services, Alaska Native Tribal Health Consortium (ANTHC), provided a PowerPoint presentation entitled "Reducing Energy Costs for Water Systems in Rural Alaska." Mr. Black informed the committee ANTHC is a large organization interested in Native health issues - one of which is sanitation - and in the energy issues of small communities. He advised that energy is a huge issue in rural Alaska; ANTHC builds water and sewer services that require large amounts of energy due to the environment. He stated that ANTHC is comprised of 220 tribes across the state, organized within 12 regional health organizations which serve on ANTHC's board, and direct its policy and activities (slide 1). Within ANTHC, the Division of Environmental Health and Engineering (DEHE) builds sanitation systems, operates and maintains some systems, provides training for local operators, provides environmental health services, builds health facilities and health clinics, and administers the Alaska Rural Utility Collaborative (ARUC) and an energy program. The Alaska Rural Utility Collaborative is a group of 27 communities that have agreed to allow ANTHC to support their water and sewer operations, maintenance, engineering, and management. He advised that working with these communities reveals "the real life opportunity to find out how difficult - and what are - the issues of running water and sewer in rural Alaska." In fact, ANTHC is the only organization, outside of the communities, that operates water and sewer services, and understands the financial picture faced by communities (slide 2).

[11:17:41 AM](#)

MR. BLACK provided a map of ANTHC's active construction projects, projects undertaken in partnership with the state Village Safe Water Program, Division of Water, Department of Environmental Conservation (DEC), and a few projects in partnership with larger municipalities (slide 3). In 2010, ANTHC became interested in developing a program to look at the energy use of operating water and sewer systems. The rise in the cost of fuel affected the cost of water and sewer due to both the rates of electricity, as well as that of heat, that are needed to prevent freezing. The Rural Energy Initiative was created to utilize the experiences of knowledgeable engineers who took the following approach toward energy efficiency improvements (slides 4 and 5):

- audit existing systems
- field analysis led to a work plan
- implement and train
- savings

MR. BLACK, in order to illustrate the value of certain changes, presented a pie chart of the average finances of the Alaska Rural Utility Collaborative based on its [27] communities, most of which are located in cold climates and possess varying levels of technology. He stressed that nearly 40 percent of the total operating cost was energy, either to pay for fuel oil or electricity (slide 6). A copy of a typical bill was presented (slide 7). Mr. Black turned to indications of the value of energy efficiency in water and sewer services: From fiscal year 2012-2014 (FY 12-FY 14), ANTHC has decreased the volume of fuel and the cost of fuel, thereby reducing the cost of water and sewer. Savings are then used to strengthen the operation of the system, or to reduce the cost to customers (slide 8). He advised that ANTHC has used both renewable energy and energy efficiency projects for savings: The approach to savings for renewable energy projects is primarily in heat recovery, biomass, and wind to heat; the approach to savings for energy efficiency projects is retrofit, remote monitoring, and training, which is very important (slide 9).

[11:25:13 AM](#)

MICHAEL NABERS, Operations Engineer, ARUC, ANTHC, said he is Inupiat Eskimo from Wainwright, a Mississippian, and a University of Alaska, Alaska Native Science and Engineering

Program (ANCEP) alumnus. He said ARUC is utilizing biomass by burning wood to heat systems and water, and reduce dependency on fuel oil; in fact, Elim has reduced its demand for fuel oil by 5,000 gallons annually, which has saved the community \$9,000 on utility bills while paying local wood cutters \$15,000 (slides 10 and 11). A biomass system is planned for Kobuk, and any community surrounded by a large wooded area could benefit from this type of renewable energy source.

REPRESENTATIVE WOOL clarified that included in the \$9,000 savings is \$15,000 to purchase the wood.

MR. NABERS confirmed that the total savings was \$24,000, and \$15,000 stays in the community. He turned to heat recovery and explained that diesel generators waste almost 70 percent of the heat that is produced during the generation of electricity (slide 12). In order to use waste heat, heat exchangers store heat and at some installations, boilers to heat water have not been needed since a heat recovery system was initiated. In Deering, residents are saving \$150 per month due to the reduced fuel use, and Minto has not needed to run its boilers except for annual maintenance (slide 13).

CO-CHAIR COLVER asked for further information.

MR. NABERS said heat exchangers are tied into the existing system between the power plant and the water treatment plant, but the systems remain independent. In further response to Co-Chair Colver, he said in Deering, the water plant and the power plant are very close, but in Ambler, the plants are separated by about 1,000 feet. Installation expense can vary, depending on whether the lines are buried and the distance; however, the savings are tremendous and the systems can be paid for in three to five years.

REPRESENTATIVE WOOL questioned whether the aforementioned boilers are located in houses.

[11:30:23 AM](#)

MR. NABERS said in many communities boilers are required at the water plant to keep the water circulation system from freezing, including water storage tanks and distribution systems, and these are the boilers that are no longer required, thereby saving fuel. Mr. Nabers described wind to heat systems, which apply to systems that incorporate wind power: During times when there is excess power from the wind turbines, the power is used

to heat water (slide 14). In Mekoryuk, diverting wind to heat has saved about \$40,000 per year, and systems are under construction in Chevak, Shaktoolik, and Gambell (slide 15).

CO-CHAIR COLVER asked whether battery storage could be utilized.

[11:32:17 AM](#)

MR. NABERS agreed that batteries could be utilized, perhaps by the Alaska Village Electrical Cooperative (AVEC). In general, ARUC focuses on efficiency first by retrofitting a water treatment plant and making improvements. The next step is to install remote monitors that track the operations of the plant and watch for potential dangers in the absence of the main operator. Following that, ARUC provides training for operators so systems are maintained and operated correctly (slide 16). For example, in Selawik a new vacuum pump was installed that was more efficient and required less maintenance, resulting in substantial savings on energy and labor (slide 17).

MR. BLACK directed attention to those who benefit from energy efficiency projects such as the community and the consumer, who save both on fuel and electricity. In addition, the state benefits by savings to the Power Cost Equalization Program, Alaska Energy Authority (AEA), Department of Commerce, Community & Economic Development (slide 18). He closed, noting that ANTHC's energy initiative has many partners, including the state which has funded renewable systems through the Renewable Energy Fund, AEA, and others (slide 19).

[11:37:56 AM](#)

CO-CHAIR COLVER asked how reductions in state funding would impact the ANTHC programs under discussion.

MR. BLACK acknowledged ANTHC is aware that state sources of income may be reduced, and hopes to attain equal federal funding.

CO-CHAIR COLVER requested a list of projects by district that are poised for funding.

MR. BLACK expressed ANTHC's intention to audit an additional 40 communities and to continue to monitor results and provide training (slide 20). He provided a list of ANTHC's projects including completed projects, audits, types of construction, and

types of renewable energy, and offered to provide additional details (slides 21-23).

[11:40:52 AM](#)

REPRESENTATIVE TILTON asked whether \$156 per month is a typical bill.

MR. BLACK said that amount is typical of a northern community, but not of Southcentral, Bristol Bay, or Southeast. In further response to Representative Tilton, he said a typical bill in the more temperate communities would be \$50-\$75 per month, and the \$156 bill was before energy costs were reduced.

REPRESENTATIVE TILTON asked whether weatherization programs were available to consumers.

MR. BLACK said yes; for example, hardware such as heat tape can affect homeowners' costs considerably.

CO-CHAIR VAZQUEZ pointed out that Alaska Housing Finance Corporation has a loan fund for local governments and government entities for the installation of energy efficient appliances.

MR. BLACK was unsure whether that program could be used in individual homes.

CO-CHAIR VAZQUEZ advised the loan fund is currently underutilized.

[11:45:07 AM](#)

The committee took an at ease from 11:45 a.m. to 11:56 a.m.

[11:57:14 AM](#)

ADJOURNMENT

There being no further business before the committee, the House Special Committee on Energy meeting was adjourned at 11:57 a.m.