ALASKA STATE LEGISLATURE
SENATE SPECIAL COMMITTEE ON ENERGY
February 19, 2015
1:16 p.m.

MEMBERS PRESENT

Senator Click Bishop, Co-Chair
Senator Peter Micciche, Co-Chair
Senator Bert Stedman
Senator Dennis Egan

MEMBERS ABSENT

Senator Lyman Hoffman

COMMITTEE CALENDAR

PRESENTATION: "COLLABORATIVE APPROACH TO UNIFIED SYSTEM OPERATION FOR THE RAILBELT REGION" BY XCEL ENERGY

PRESENTATION: "NATURAL GAS DISTRIBUTION BUILD-OUT" BY ENSTAR

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

TERESA MOGENSEN, Vice President
Transmission
Xcel Energy
Minneapolis, Minnesota
POSITION STATEMENT: Provided an overview of Xcel Energy's electric transmission system.

DANIEL KLINE, Director
Strategic Transmission Initiatives
Xcel Energy
Minneapolis, Minnesota
POSITION STATEMENT: Provided an overview of Xcel Energy's electric transmission system.

CHERYL BREDENBECK, Director
Transmission Investment Development

Xcel Energy
Minneapolis, Minnesota
POSITION STATEMENT: Provided an overview of Xcel Energy's electric transmission system.

JARED GREEN, President
ENSTAR Natural Gas Company
Anchorage, Alaska
POSITION STATEMENT: Provided a natural gas distribution overview of ENSTAR's operations in Alaska and Heritage Gas' operations in Nova Scotia.

JOHN SIMS, Vice President
Corporate Resources and Business Development
ENSTAR Natural Gas Company
Anchorage, Alaska
POSITION STATEMENT: Provided an overview of ENSTAR's natural gas operations for the Anchorage and Cook Inlet area.

ACTION NARRATIVE

1:16:27 PM
CO-CHAIR PETER MICCICHE called the Senate Special Committee on Energy meeting to order at 1:16 p.m. Present at the call to order were Senators Egan, Co-Chair Bishop, and Co-Chair Micciche.

PRESENTATION: "COLLABORATIVE APPROACH TO UNIFIED SYSTEM OPERATION FOR THE RAILBELT REGION" BY XCEL ENERGY.

1:17:42 PM
CO-CHAIR MICCICHE welcomed Xcel Energy (XE) to the committee meeting.

1:18:04 PM
TERESA MOGENSEN, Vice President, Transmission, Xcel Energy, Minneapolis, Minnesota.

1:18:16 PM
DANIEL KLINE, Director, Strategic Transmission Initiatives, Xcel Energy, Minneapolis, Minnesota.

1:18:19 PM
CHERYL BREDENBECK, Director, Transmission Investment Development, Xcel Energy, Minneapolis, Minnesota.

MS. MOGENSEN read an overview statement as follows:

> We understand that Alaska is on a journey to transform and better integrate its electrical energy infrastructure, to be able to extract the full value out of your past investments and pave the way for future growth. We believe we have some perspective and experience in resource that could be helpful to you and our presentation today will cover a little bit about Xcel Energy, our understanding of the Alaska Railbelt situation, our experience in leading collaborative transmission development, and some thoughts on possible next steps.

She explained that XE is a major integrated utility in the Lower 48 and detailed the company's operations as follows:

- Four operating companies that operate in eight retail states.
- Transmission in 10 states.
- Generation, transmission, distribution, and gas services.
- Number one wind energy provider with a strong renewable energy component.
- Top five in energy efficiency programs and emission reductions.

1:21:22 PM
She proclaimed that XE is a leader in transmission and detailed as follows:

- Territory comprises about 19,000 line-miles, 1,200 substations, and assets in 10 states.
- Operate under two Regional Transmission Organizations (RTO): Mid-Continent Independent System Operator (MISO) and Southwest Power Pool (SPP).
- Colorado utility does not operate under a RTO.
- Operate under three North American Electric Reliability Corporation (NERC) regions. NERC is the organization that governs reliability standards performance.

CO-CHAIR MICCICHE noted that the presentation’s title addresses unified system operations. He referenced a slide in XE's presentation and asked what the difference is between Unified System Operations (USO) and Independent System Operations (ISO).

MS. MOGENSEN replied that the concept is essentially the same. She summarized that regardless of who owns the generators or

transmission, the USO or ISO operator governs the overall operation.

1:23:40 PM
SENATOR STEDMAN joined the committee meeting.

CO-CHAIR MICCICHE surmised that a USO has a tendency to make the largest company the strongest and ISO has the ability to put more controls in place so that smaller companies are not disadvantaged.

MS. MOGENSEN specified that the ISO's board members are all independent of the organizations.

She said XE has a significant capability in transmission, construction, operations, and planning. She asserted that XE has large capabilities that include in-house as well as outside materials and services partners. She revealed that XE is currently executing a $4.5 billion investment program. She summarized that XE has the economies of scale and capabilities to bring into play and assist Alaska.

1:25:36 PM
She noted that XE comes from a place of common values and experiences that Alaska is currently focusing and working on. She asserted that XE has the experience to assist Alaska as follows:

- Started up ISO and USO organizations to speed implementation.
- Executed large build-outs similar to the Railbelt by getting participating utilities to collaborate while maintaining autonomy.
- Possesses the ability to integrate renewables.
- Focuses on conservation and community.

MS. MOGENSEN summarized that XE hopes to align with Alaska’s direction and provide some of the benefit from XE’s experience.

1:27:20 PM
CO-CHAIR MICCICHE remarked that Alaska is beginning to investigate whether or not all of the Railbelt entities can work together collaboratively. He noted that this year he had pulled back a bill because he believed work is being done. He said he is encouraging people to get to the table to address generation and transmission infrastructure in order to operate as efficiently as possible. He asserted that starting the

discussion depends on everybody coming to the table somewhat equally and having their own interests protected. He stated that resistance will occur if the little-guy is not included in the discussion.

CO-CHAIR BISHOP asked if XE has done some ISO models.

MS. MOGENSEN answered yes, but noted that XE does not run the ISO.

CO-CHAIR BISHOP asked what the delivery electricity prices were before and after the ISO was set up.

MS. MOGENSEN answered that she does not have the figures.

CO-CHAIR BISHOP stated that the committee would like to see the data and noted the importance in value for customers and electrical utilities.

1:30:08 PM
MR. KLINE remarked that Alaska's Railbelt utility system is essentially the result of individual planning. He explained that utilities have the obligation to ensure that customer needs and demands are met. He asserted that individually planning is not an indictment of methods or the utilities, but a recognition of what the utilities needed to do in the absence of a more coordinated approach.

CO-CHAIR BISHOP pointed out that little independent power producers were needed 50 years ago. He remarked that today is a new day.

MR. KLINE said XE is aware that customers have cost concerns. He noted that some Alaska customers are paying a monthly utility bill that is higher than their mortgage payment. He pointed out that the Governor has also cited concerns with the cost of energy for all Alaskans, citing the Railbelt as well as rural Alaskans. He asserted that the solution is a reliable, dependable, regional transmission system with the dispatch of energy on an economic basis to ensure that the least cost energy is flowing to Alaska consumers.

MR. KLINE said the utilities seem to have begun the formative steps toward establishing or making progress toward some sort of USO approach. He noted that the Alaska Railbelt Cooperative Transmission & Electric Company (ARTEC), a relatively new organization, recently made a presentation to the Legislature

regarding a USO approach in the Railbelt. He remarked that ARTEC presented guiding principles that are sound, reflect the principles that are consistent with XE's experience elsewhere in the country, and reflect a necessary foundation to moving Alaska's energy discussion forward.

1:33:05 PM
He said the USO or ISO approach is a necessary step to ensure economic benefits are realized. He set forth that another necessary step is a reliable and dependable electric transmission system. He noted that study efforts have identified projects that can help address some of the Railbelt's transmission needs. One plan that was conducted by the Alaska Energy Authority (AEA) identified approximately $903 million of transmission upgrades with an aggregate benefit-cost ratio of 3.4 times benefits to costs. He said the study demonstrates that targeted strategic upgrades to Alaska's transmission system can deliver significant benefit to customers.

He addressed support needed from policymakers, legislators, regulators, and other state leaders. He stated that one important fact is to ensure that the Regulatory Commission of Alaska (RCA) is empowered with clear authority to enact the goals that the Legislature establishes.

He noted that historically, some funding for a lot of major energy infrastructure projects has come from state resources. He said considering the state's current budget constraints, new financing models are necessary from non-traditional approaches. He stated that Alaska will and can implement something that is unique to its situation and needs. He asserted that there are lessons to be learned from elsewhere. He summarized that solutions can be unique, but finding the right solution based on other implementations must be found.

1:35:45 PM
MS. BREDENBECK announced that her presentation will be on XE's case study of the CapX2020 Project that was organized in Minnesota, Wisconsin, North Dakota, and South Dakota. She detailed that CapX2020 predated over 10 years ago where all the entities that owned transmission in the specified area were trying to get organized. She specified that the transmission entities knew projects needed to be built by coming together and organizing, but there was worry about giving up control while maintaining their paramount interest in serving their obligations. She stated that XE sees a similar staging in Alaska as what was experienced in the Midwest.

MS. BREDENBECK explained that CapX2020 started out as a collaborative approach with four utilities who tried to figure out how to build projects together without looking for someone else to provide a solution. She said CapX2020 ultimately expanded to 11 and included: electric cooperatives; municipal generation and transmission owners; and investor owned utilities. She stated that XE is trying to bring the lessons learned from CapX2020 forward to Alaska and pointed out that XE played a lead role in getting CapX2020's four projects implemented.

1:38:34 PM
She explained that CapX2020's 11 entities invested $2 billion in 700 miles of 345 kilovolt (KV) transmission and 70 miles of 230 KV transmission. She said there was key alignment with regulators and policymakers to make CapX2020's projects happen. She stated that CapX2020's projects were very critical as the foundation for future transmission. She said there was a no-regrets approach adopted in looking at future scenarios to ensure that the right amount was being built.

CO-CHAIR BISHOP asked to verify that the CapX2020 investment and build-out was over a ten year period.

MR. KLINE answered that the construction investments were made over a five year period and the projects were developed over a period of about a decade.

CO-CHAIR BISHOP asked who was involved with CapX2020's permitting.

MR. KLINE replied that the utilities were all involved, but XE led many of the permitting efforts.

CO-CHAIR BISHOP asked how XE's relationship was with the federal permit agencies.

MR. KLINE answered that he believed that XE's relationship with the federal permitting entities was quite strong. He revealed that one project required a 1.5 mile wide crossing of the Mississippi River in the middle of an avian flyway, which required a great deal of coordination with several permitting authorities in order to accomplish that.

MS. BREDENBECK noted that there was a management committee structure where all 11 entities participated to establish core

principles and project build-outs. Entities selected to be part of one or more projects with each project having its own set of agreements. She noted that there had been ownership of discreet lines in the past, but CapX2020 projects were built similar to a pipeline model where line investment correlated with a percentage of ownership. She specified that there were four types of agreements: ownership, construction management, capacity exchange, operation and maintenance.

1:42:43 PM
She reiterated that CapX2020's key success factor occurred with the 11 entities coming together which smoothed the way with regulators and policymakers to move on with the construction process. She remarked that the entity collaboration continues to pay dividends in the region. She noted that as the projects near completion, a study revealed that CapX2020's economic impact was $4 billion. She revealed that one of the big drivers from the legislative process which helped move CapX2020 along was the passing of the 2005 Omnibus Energy bill, which allowed: authorized return for construction work and progress, writer incentive for the investor-owned utilities, and a forward looking rate recovery.

MS. MOGENSEN stated that CapX2020's collaborate effort addresses Co-Chair Bishop's comment about different sized entities having to come together. She revealed that all of CapX2020's entities ended up with a seat at the table with an ability to invest in pieces of the combined infrastructure.

She detailed that the bulk of CapX2020 will be in service this year and administered under the ISO as part of the regional tariff, running on a system oversight control by MISO. She pointed out that MISO is an example of how transmission can get done in a way that involves all the utilities in the region and meets the goals that are set by the policymakers.

CO-CHAIR BISHOP asked if excess capacity was built into CapX2020 for expansion.

MS. MOGENSEN answered yes. She explained that XE worked with the regulators to authorize additional spending for additional capacity.

1:46:04 PM
MS. MOGENSEN stated that XE has the ability to offer a long term partnership with the Alaska utilities to transform the Railbelt's transmission system and overall infrastructure. She

asserted that XE has a lot of experience in developing ISO organizations and can help speed Alaska's implementation. She disclosed that XE is willing and able to invest with the Alaska utilities to construct the study-identified facilities to help alleviate constraints. She set forth that XE, on an ongoing basis, is willing to own transmission with the Alaska utilities along the lines of the CapX2020 model and also facilitate improvements in system operations.

She said the roadmap to implementation starts with the Legislature, Alaska's energy policymakers that sets policy direction for the state. She stated that the roadmap then moves to a regulatory commission, the RCA, who is the state's policy implementer. She remarked that should the Legislature choose, RCA would create the USO/ISO for operational oversight and control. She summarized that the roadmap also includes the transmission owners who are investing in the transmission assets and running the transmission system in addition to the generation owners who are providing the energy supply options to the buyers.

1:48:46 PM
She explained the Legislature's role as follows:

> From a legislature perspective, you set the policy to define the model that you want to have for Alaska; in this case, the Railbelt electric system. There is a report that will be coming out from the RCA, which is validating whether the savings that were calculated, and the original Railbelt report that came out in 2013, whether those are solid. You would then clarify the RCA's authority to implement the model that you choose and set the utility participation; it would be important for all of the utilities to participate to make that common tariff and common system approach work.

She explained the RCA's role as follows:

> From the RCA perspective, it would be defining the specific attributes and implementing that USO, validating and adopting the Railbelt Plan. You would set resource planning requirements if you chose to go that route and set reliability standards; these two are often tasks, in our experience, that commissions sets.

MS. MOGENSEN explained the USO's role as follows:

> The USO would then perform the economic generation dispatch basically on a hour-by-hour basis, determining which is the set of generators that are going to, together, generate the least expensive power to meet the demand at any given time in consideration of the constraints on the grid for moving power around; that's economic generation dispatch. The unified transmission tariff would be a single cost for moving generation, moving power anywhere on that grid. The USO would also administer the revenue requirements associated with that tariff, so compensating all of the owners for their assets utilization, administer a generator interconnection process, and ultimately an ongoing regional transmission planning process.

1:50:58 PM
She specified the transmission owners' role as follows:

> The transmission owners would construct, operate, and maintain the grid in accordance with whatever requirements were set from a reliability perspective. In the model that we have worked with, all the utilities have an ownership in the assets and have a role in the future transmission ownership.

She explained the generator owners' role as follows:

> The generator owners negotiate power purchase agreements with the buyers and they become a network resource, meaning agree to be dispatched by that USO; they would utilize the grid, pay that single transmission tariff, and respond to the real-time dispatch instructions. From an Xcel Energy perspective, we would be able to provide some of that experience to speed your implementation and also lead the collaborative investment approach to implement the Railbelt Plan with the Alaskan utilities.

SENATOR EGAN asked if the RCA or utilities would be responsible for the transmission build-out requirements. He inquired if the RCA would either be responsible or set the parameters.

MS. MOGENSEN asked if Senator Egan was saying the standards for how the lines are constructed or for which lines are constructed.

SENATOR EGAN inquired if the RCA or utilities would be responsible for all of the applicable transmission requirements.

MS. MOGENSEN answered that usually the RCA would address the transmission line specifics: what line is used, how the line should be built, and then establish that there is a need and direct the utilities to build them. She explained that the utilities would come up with, in general, a standard for how the line should be done to meet whatever capacity that the lines are supposed to meet. She noted that a soon to be released study will identify transmission line specifics that shows potential savings.

SENATOR EGAN noted that the RCA had final approval in the past and asked if the same would apply to the transmission lines.

MS. MOGENSEN answered yes.

CO-CHAIR BISHOP asked for a recap on his request for CapX2020 information that would apply to Alaska. He asked for examples that address power rates before and after the CapX2020 implementation. He conceded that the variables between the Midwest and Alaska will differ, but noted that his intent is to see if Alaska is in the "ballpark" for possible savings.

MS. MOGENSEN replied that XE will supply the information. She noted that savings after CapX2020 are an ongoing value calculation.

1:54:59 PM
CO-CHAIR MICCICHE summarized that he will study the presentation and contact XE. He asserted that he has to see a demonstration for reduction in what ends up going to a ratepayer and not a convenience for utilities. He pointed out that the Railbelt has far too many utilities operating in an area that serves the size of a medium sized, Lower 48 city. He remarked that one day he would like to see one utility operate the system. He said XE's proposal might be a first step. He noted that XE referenced policymakers first in the process and asserted that utilities need to be working together first to see if they can come up with a collaborative path forward where the Legislature helps with policy if needed. He opined that the Legislature has a tendency to move in a direction that is counterproductive to what is best for the ratepayers. He suggested that XE work with the utilities and bring the Legislature a plan. He pointed out that Alaska is different in almost every way, but in some ways

it's not. He summarized that he is looking forward to see what XE can provide and asserted that their approach is the right way to go if it brings the right players in the room, keeps the state out of court, and keeps everybody working.

1:57:15 PM
CO-CHAIR MICCICHE announced that the committee will stand at ease.

"NATURAL GAS DISTRIBUTION BUILD-OUT" PRESENTATION BY ENSTAR

2:00:05 PM
CO-CHAIR MICCICHE called the committee meeting back to order. He announced that the next order of business is a presentation by ENSTAR. He explained that the committee's interest is to understand how natural gas delivery efforts start with ENSTAR.

2:00:54 PM
JARED GREEN, President, ENSTAR Natural Gas Company, Anchorage, Alaska.

2:00:58 PM
JOHN SIMS, Vice President, Corporate Resources and Business Development, ENSTAR Natural Gas Company, Anchorage, Alaska,

MR. GREEN revealed that ENSTAR is an indirect, wholly owned subsidiary of AltaGas LTD. He said AltaGas is a diversified energy infrastructure company with assets focused on natural gas processing, power generation, and natural gas distribution. The company has five different distribution utilities across Canada and the United States. One of the utilities, Heritage Gas, is located in Nova Scotia on Canada's east coast. He said his presentation will address the experiences from the Nova Scotia build-out. He conceded that there will be many differences between Heritage Gas and what Alaska is facing with its Interior energy project, but added that there will be a number of similarities as well. He said the hope is that the presentation can be of assistance and help out the Interior energy project as it proceeds forward.

2:02:37 PM
MR. GREEN stated that he will review the basic economic principles for a rate regulated utility, principles that frame the discussion for the utility economics. He detailed that the utility economics are fundamental for the encouragement of

investment into utility assets and in the cost of service determination for the utility's toll.

He said generally, a public utility is a natural monopoly that is subject to rate regulation. He explained that rate regulation prevents a monopolistic control over the relationship between the utility and their customers. The relationship between the utility and customers has a regulatory body which limits the revenue a utility can charge to what is deemed to be a just-and-reasonable rate. He specified that the regulatory body has a goal to provide incentives for investment as well as trying to not unduly provide preferential, arbitrary, or unjust discrimination. He stated that the goal is for tariffs that are just-and-reasonable. He pointed out that "reasonable" is defined as a rate commensurate with the service being received.

2:04:21 PM
CO-CHAIR MICCICHE asked if there is a typical rate of return range and how the rate is determined. He inquired if rates of return are different in Nova Scotia or southern California versus southcentral or Interior Alaska.

MR. GREEN answered yes. He said there is a large range that ends up being fairly involved with the cost of capital and risk. He detailed that the risk a specific utility faces in their operating environment really drives what is considered to be a fair return on investment. He pointed out that Heritage Gas is still in its "green field" stage where there is a fair amount of risk. He specified that Heritage Gas' return on equity (ROE) during its initial 8 years of operation was 13 percent, a return deemed to be commensurate to the risk of a new utility build-out. He added that 3 years ago, Heritage Gas' ROE dropped by 200 basis points by attracting more customers and reducing its overall business risk as it becomes a more viable entity. He stated that ROE examples for ENSTAR and its utility, Cook Inlet Natural Gas Storage (CINGSA), are commensurate to operating in a northern environment with a larger weather risk and being farther from supply chains.

2:07:12 PM
CO-CHAIR MICCICHE asked if Heritage Gas has a similar regulating agency.

MR. GREEN replied yes. He explained that the Nova Scotia Utility and Review Board is a very similar regulating body to the RCA.

He detailed that utilities can be privately or publically owned. Publically owned utilities include cooperative, municipal, or government owned utilities. He noted that cooperative utilities are owned by its customers. Private utilities are also considered to be investor owned utilities and that is where ENSTAR's role is.

2:08:59 PM
He explained that the regulatory process for an investor-owned utility to determine just-and-reasonable rates is a very involved and transparent process where the commission, in a very public forum, gets to look at almost all of a utility's financial and operating information. He detailed that the regulatory process is a two phase process. The first phase determines the allowable return for an investor-owned utility from a holistic prospective. He revealed that the first phase is very backwards from a traditional private business approach where returns are determined from revenue minus expenses. For rate-regulated utilities, total return is a bottom up approach where an opportunity to earn a fair return on investment is afforded. He noted that how an investment is capitalized, the split between debt and equity, is also taken into consideration. He revealed that ENSTAR's capitalization is 51 percent equity and 49 percent debt, a split that gets looked at very heavily through the regulatory process. He detailed that the capitalization split is compared to entities with similar risk profiles that prevents entities from taking on too much leverage and having over earning capabilities on the equity component.

He said the second phase looks at the customer's perspective. He explained that costs are allocated to the different types of customers and the result is a toll to each of the customer types. He specified that high volume industrial customers require large transmission assets where residential customers utilize service lines and mains. He summarized that fair allocation is based on who is driving the largest cost.

2:14:44 PM
CO-CHAIR MICCICHE noted that someone famous to the capitol building once said, "It's not fish companies that went into the fish business, it's can companies; they just stick a little bit of oil and some fish to sell you the cans." He stated that he was asking a similar question pertaining to natural gas. He said natural gas has a nice return, but noted that the industry does have risks. He explained that understanding the many risks of natural gas might be a way for folks to understand why the potential companies are involved with the state in moving in a

direction that includes the Interior and relative compact utilities like Seward. He asserted that ENSTAR's current return does not really capture a lot of the operational risk.

MR. GREEN explained that a utility's shareholders take into account the risks involved versus the return on equity. He pointed out that risks include attracting additional customers, having an outage in the middle of the winter, and an increase in gas prices where fuel oil becomes a better value. He set forth that a utility does have an economic obligation to serve once the utility franchise is accepted in exchange for a fair return.

2:19:04 PM
He addressed Heritage Gas and explained that AltaGas was an investor since 2002 and sole owner since 2009. He stated that Heritage Gas was a greenfield-distribution utility that occurred when the Maritime Northeast Pipeline was constructed to bring offshore gas from Sable Island to the Boston market. He specified that a lateral line was built to feed Halifax's Nova Scotia Power's Tufts Cove 400 megawatt power plant. He asserted that Heritage Gas would not have started without the pipeline infrastructure that supplied secure and reliable gas.

2:21:45 PM
He revealed that Heritage Gas has invested over $220 million during the past ten years with an annual 6.5 billion cubic feet of natural gas flowing to 5,000 customers. He said Heritage Gas has had decent success on the penetration for industrial and commercial customers, but residential customer penetration has been slower than what was originally expected.

CO-CHAIR MICCICHE asked what the price of heating oil is, were there other options outside of heating oil, and is there an entity that is willing to help with the cost of conversion. He noted that Alaska has the Alaska Energy Authority (AEA) that offers low cost financing for conversion.

MR. GREEN replied that there are some funds from an energy conservation program that are aimed at lowering greenhouse gas usage for homeowner and commercial entities. He conceded that there has not been any government contribution for Heritage Gas' build-out and funding has purely been from investment and tolls paid by customers. He pointed out that AltaGas' Alberta utility build-out in the 1960s and 1970s received significant government contribution for a rural network build-out.

MR. GREEN specified that Nova Scotia's fuel source market consists of: No. 2 fuel oil, electricity, propane, wood, and natural gas. He noted that in 2013, Heritage Gas' 5,000 customers had $73 million worth of savings versus their costs prior to conversion. He conceded that the natural gas conversion cost for residential customers remains as a difficult hurdle. He noted that Heritage Gas' large commercial customers such as hospitals and schools have realized significant savings.

2:26:13 PM
CO-CHAIR MICCICHE pointed out Fairbanks' challenge with emissions and noted that Heritage Gas' conversion saved 220,000 tons of greenhouse gas emissions.

SENATOR EGAN asked if Nova Scotia Power's electricity generation is through natural gas or hydropower.

MR. GREEN answered that the main power generation through Nova Scotia Power is a mix of natural gas, coal, and No. 2 fuel oil.

CO-CHAIR MICCICHE asked if the Maritime Northeast production ever came on as expected.

MR. GREEN answered that Sable Island was producing as expected early on, but production has significantly declined in recent years. He noted that there is some new gas coming into the pipeline from another offshore platform. He conceded that gas may end up having to go south to north instead of its traditional north to south. He explained that Heritage Gas does have supply security by being connected to the North American grid. He conceded that getting gas past the Boston market is extremely expensive.

CO-CHAIR MICCICHE asserted that demand creates a market for exploration and production. He noted that there are some folks in the Cook Inlet that worry about future supply even though the supply outlook improved dramatically in the last couple of years. He pointed out that Fairbanks' dense population and heavy industrial areas are a very attractive market. He asserted that natural gas distribution expansion increases the motivation for exploration and production.

2:29:33 PM
MR. GREEN replied that he agreed. He explained that Heritage Gas' residential rate is $19.24 per 1,000 cubic feet (MCF) of natural gas. He added that a fixed monthly toll charge makes the total residential rate just under $21.00 MCF. He noted that the

toll covers the system build-out costs. He explained that the Heritage Gas' toll is higher than what ENSTAR would have due to pipeline build-out that occurred in the 1960s and 1970s versus the 2000s.

CO-CHAIR MICCICHE stated that Heritage Gas' distribution charges and gas costs are relatively high. He asked to verify that the residential rate is $21.87 MCF and that the commercial or industrial rates are higher.

MR. GREEN answered yes. He explained that the fixed charge is heavily negotiated and takes into account costs, risks, and demand.

2:32:38 PM
CO-CHAIR MICCICHE opined that Heritage Gas' high rate might be part of the problem for conversion.

MR. GREEN agreed that conversion is impacted by the rates, but noted that natural gas has offered significant discounts versus fuel oil and propane. He conceded that the recent drop in oil prices will make conversion more challenging.

SENATOR EGAN asked what the price per gallon for Diesel #2 is.

MR. SIMS answered that he did not know what the price is in Halifax.

CO-CHAIR MICCICHE pointed out that a fair comparison would be to covert to one thousand British Thermal Units (MBTU). He surmised that Diesel #2 is right around $22 or $23 per MBTU.

MR. SIMS replied that he agreed.

2:34:32 PM
MR. GREEN noted that Heritage Gas has looked to expand to communities that are not directly accessible by the normal transmission pipe, communities that are too far away to make a pipeline an economical investment to attach to. Heritage Gas built out a Compressed Natural Gas (CNG) portion of the business. He stated that CNG has been a nice little investment for Heritage Gas to access some of the small communities that do have a core anchor-load. He specified that an anchor-industrial customer is required to warrant the CNG equipment investment. He said the CNG program has been a successful side to the business and its ability to grow out a bit more of the customer base and bring some more natural gas to more people. He noted that CNG

does come with additional cost because of the added facilities and transportation. He stated that applying CNG methodology has been addressed for Alaska. He remarked that ENSTAR may very well look at expanding out to some areas in Alaska where CNG would make sense. He specified that CNG has a limited range because there is not that much energy content per trailer, but it still could be a value proposition to the customer base. He said using CNG comes down to transport and distribution build-out costs.

2:37:28 PM
CO-CHAIR BISHOP asked what the kilometer make-or-break point is for CNG delivery.

MR. GREEN answered 180 kilometers. He noted that the CNG range has recently grown due to advances in tube technology, steel versus composite. He explained that composite tubes are lighter and allow more CNG to be shipped on the roads.

SENATOR EGAN asked what Mr. Green considered to be a small community. He inquired if Juneau would be considered a small community at 35,000.

MR. GREEN opined that he would not consider Juneau to be a small community. He stated that Seward would be an example of a small community, but one that is large enough to warrant facilities and pipelines.

SENATOR EGAN asked if CNG trailers can be transported by barge. He surmised that barge service would allow for CNG to be delivered at greater distances.

MR. GREEN answered yes. He explained that there has been some old gas supply discussions where barged CNG on a larger scale was looked at as a potential supply alternative.

SENATOR EGAN opined that savings could be realized where tugs could be propelled by LNG or CNG.

2:41:06 PM
CO-CHAIR MICCICHE noted that the Legislature has a tendency to pick the wrong direction and throw a lot of money at the same decision for years and get further off base every time. He stated that the committee's hope is for people to pullback and figure out what works best economically for various communities: propane, CNG, LNG, or a pipeline. He asserted that the Legislature gets in the way of energy decisions. He remarked that the Fairbanks market is probably at the point where someone

is probably willing to take on the market if the Legislature would get out of the way and allow for an entity to evaluate the cost and move forward. He said in other communities the Legislature may have to be involved in some subsidies that bring down the cost of energy. He noted that the state has a goal of 25 percent renewable by 2025 and the state was currently in the low 20 percent range. He remarked that discussions that address what works best for communities needs to happen statewide. He explained that his intent in the meeting is to look at a build-out in hypothetical communities that are similar to Fairbanks and the other like Seward. He said the Fairbanks example addresses the Interior and Seward might look a lot like Juneau, Sitka, or other coastal communities that might have coastal deliveries of propane, CNG, or LNG one day.

SENATOR EGAN asked what the average price per kilowatt is.

MR. SIMS replied that the price range is $0.10, but continues to go up.

SENATOR EGAN asked if the average price is the commercial rate.

MR. SIMS answered that the price is the residential rate. He noted that Chugach may be less.

2:43:37 PM
MR. SIMS said Homer was a good example of state and local governments working together with the utilities to serve a community. He explained that in 2009, Anchor Point Energy found a commercial amount of gas in the North Fork Unit. ENSTAR extended its transmission system 21 miles from Ninilchik down to Anchor Point to access the natural gas and make the pipeline to Homer a possibility. Homer and Kachemak City contacted ENSTAR and asked for an estimate to get gas down to the Homer area, which was $10 million. Homer was granted $8.15 million by the state to help go towards a trunk-line. He detailed that ENSTAR estimated that the complete distribution main build out was 70 miles and $15 million for Homer, 9 miles and $1.5 million for Kachemak. Homer voters approved the Homer Special Assessment District (HSAD) where individual property owners are assessed a certain percentage of the project cost. The assessment was estimated to be $3,200 per lot, allowing Homer to obtain a loan from the Kenai Peninsula Borough to pay ENSTAR for the distribution system installation.

2:46:49 PM

SENATOR EGAN asked if HSAD was a Local Improvement District (LID).

MR. SIMS answered yes. He detailed that ENSTAR installed 70 miles of distribution main in two years, total project cost was $12.1 million. He explained that the City of Kachemak decided to pay themselves for the installation of the distribution system: 9 miles, total cost $1.2 million. He added that to drive the conversion rate, Kachemak's residents were paid $500 for service line and meter setup. He revealed that Kachemak's conversion rate was nearly 100 percent. He explained that Homer's conversion rate was very good for a two year time frame, a rate similar to a year-five projection. Approximately 1,300 customers converted out of 2,500. He noted that a number of customers have paid for their service line and meters, but have not converted yet, possibly due to the conversion cost or a shortage of plumbers in the area. He said ENSTAR is anticipating a 60 to 70 percent conversion rate in Homer.

CO-CHAIR BISHOP asked what the burner-tip price in Homer is.

MR. SIMS replied that the rates for Homer are postage-stamp rates, just like anywhere else on ENSTAR's system. He noted that Homer pays for a $1.00 per MCF surcharge that goes to pay off the project's remaining cost. He said Homer is paying about $11 per MCF.

CO-CHAIR MICCICHE asked if the $11 MCF includes the $1.00 surcharge.

MR. SIMS answered yes.

2:49:57 PM
CO-CHAIR MICCICHE noted that Homer's expansion essentially took place in one year.

MR. SIMS specified that Homer's expansion was two years: the city core in the first year, the outer areas and the spit in year two. He said Kachemak City was done in year one.

CO-CHAIR MICCICHE specified that the trunk-line was a one year project that connected Homer with the rest of the system. He asked what the diameter is for the trunk-line.

MR. SIMS answered that the trunk-line's diameter started at eight inches and went down to six inches in Homer down to Kachemak.

CO-CHAIR MICCICHE confirmed that people have reduced their heating bills and the conversion will continue. He asserted that an accelerated conversion to make the project work will depend on natural gas' price being at a point where even senior citizens see the benefit of conversion. He remarked that only converting 30 year olds will make the project's math upside down. He said his intent was to get people to think about all of the little pieces that go into conversion and take into account the costs that make the project mathematically work. He noted that Mr. Green talked about an important fact that industrial users generally pay the bulk of initial service and everyone after that essentially gets a better deal.

2:52:38 PM
MR. GREEN agreed that having a large anchor customer is the underpinning of expansion. He specified that customers coming on are not getting a discount or deal, but they are getting the benefit of the scale that a large customer brings in cost sharing.

CO-CHAIR BISHOP remarked that a project might not even happen without the anchor tenant.

MR. GREEN answered correct.

MR. SIMS added that high schools and shopping malls are looked at in smaller communities that don't have industrial load. He explained that a large customer on the end of an extended main brings service to the other folks.

CO-CHAIR MICCICHE pointed out that bringing the costs down for municipal structures benefits everyone. He noted that during the two years when the project's funds were being secured, the Kenai Peninsula Borough would have saved $2 million just on municipal building fuel costs.

2:54:23 PM
CO-CHAIR MICCICHE remarked that he may have ENSTAR come back to the committee. He stated that his intent is to get all of the players that might take a role in getting a reliable source of natural gas to the Interior. He said he thinks there is an interim way of getting natural gas to the Interior that is permanent and reliable. He stated that he has been pushing pipeline transmission to Fairbanks and the Interior. He reiterated that he may have ENSTAR back to talk about how the pieces might need to come together in the future if pipeline

transmission is going to happen in the Interior. He added that the future discussion will bring some smaller coastal communities and remote places to the table to address conversion to CNG or LNG. He asserted that $3.00 No. 2 fuel oil is not going to stay forever when previous prices ranged from $5.00 to $8.00. He summarized that a reliable and long term solution is needed.

2:56:15 PM
There being no further business to come before the committee, Co-Chair Micciche adjourned the Senate Special Committee on Energy hearing at 2:56 p.m.