

ALASKA STATE LEGISLATURE
HOUSE COMMUNITY AND REGIONAL AFFAIRS STANDING COMMITTEE

February 21, 2012

8:04 a.m.

MEMBERS PRESENT

Representative Cathy Engstrom Munoz, Chair
Representative Neal Foster, Vice Chair
Representative Alan Austerman
Representative Alan Dick
Representative Dan Saddler
Representative Sharon Cissna
Representative Berta Gardner

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

HOUSE BILL NO. 312

"An Act creating a low-interest loan program for homeowners who convert their homes to natural gas-fired heating; and creating the natural gas home heating conversion loan fund."

- MOVED CSHB 312(CRA) OUT OF COMMITTEE

HOUSE CONCURRENT RESOLUTION NO. 10

Encouraging the state, municipalities of the state, and private organizations in the state to weigh the benefits and costs of waste-to-energy technology and to consider waste-to-energy technology to help meet the energy and waste management needs of the state, municipalities of the state, and private organizations in the state.

- MOVED CSHCR 10(ENE) OUT OF COMMITTEE

PREVIOUS COMMITTEE ACTION

BILL: HB 312

SHORT TITLE: NATURAL GAS CONVERSION PROGRAM/FUND

SPONSOR(s): REPRESENTATIVE(s) T.WILSON

02/03/12	(H)	READ THE FIRST TIME - REFERRALS
02/03/12	(H)	CRA, FIN
02/14/12	(H)	CRA AT 8:00 AM BARNES 124

02/14/12 (H) Heard & Held
02/14/12 (H) MINUTE(CRA)
02/21/12 (H) CRA AT 8:00 AM BARNES 124

BILL: HCR 10

SHORT TITLE: ENCOURAGING WASTE-TO-ENERGY TECHNOLOGY

SPONSOR(S): REPRESENTATIVE(S) PETERSEN

03/18/11 (H) READ THE FIRST TIME - REFERRALS
03/18/11 (H) ENE, CRA
04/05/11 (H) ENE AT 3:00 PM BARNES 124
04/05/11 (H) Heard & Held
04/05/11 (H) MINUTE(ENE)
02/07/12 (H) ENE AT 3:00 PM BARNES 124
02/07/12 (H) Moved CSHCR 10(ENE) Out of Committee
02/07/12 (H) MINUTE(ENE)
02/10/12 (H) ENE RPT CS(ENE) 3DP 2NR
02/10/12 (H) DP: PETERSEN, SADDLER, FOSTER
02/10/12 (H) NR: OLSON, PRUITT
02/21/12 (H) CRA AT 8:00 AM BARNES 124

WITNESS REGISTER

REPRESENTATIVE TAMMIE WILSON

Alaska State Legislature

Juneau, Alaska

POSITION STATEMENT: Spoke as the sponsor of HB 312.

BRANDON BREFCZYNSKI, Staff

Representative T. Wilson

Alaska State Legislature

Juneau, Alaska

POSITION STATEMENT: During hearing of HB 312, answered questions on behalf of the sponsor, Representative T. Wilson.

STACY SCHUBERT, Director

Governmental Affairs & Public Relations

Alaska Housing Finance Corporation (AHFC)

Department of Revenue

Anchorage, Alaska

POSITION STATEMENT: During hearing of HB 312, answered questions.

JOHN ANDERSON, Weatherization Officer

Alaska Housing Finance Corporation

Department of Revenue

Anchorage, Alaska

POSITION STATEMENT: During hearing of HB 312, answered questions.

KATIE KOESTER, Community & Economic Development Coordinator
City of Homer
Homer, Alaska

POSITION STATEMENT: Testified in support of HB 312.

REPRESENTATIVE PETE PETERSEN
Alaska State Legislature
Juneau, Alaska

POSITION STATEMENT: Spoke as the sponsor of HCR 10.

DAVID DUNSMORE, Staff
Representative Pete Petersen
Alaska State Legislature
Juneau, Alaska

POSITION STATEMENT: During hearing of HCR 10, answered questions.

TED MICHAELS, President
Energy Recovery Council
Washington, DC

POSITION STATEMENT: During hearing of HCR 10, answered questions.

ACTION NARRATIVE

[8:04:28 AM](#)

CHAIR CATHY ENGSTROM MUNOZ called the House Community and Regional Affairs Standing Committee meeting to order at 8:04 a.m. Representatives Austerman, Dick, Saddler, Gardner, and Munoz were present at the call to order. Representatives Foster and Cissna arrived as the meeting was in progress.

HB 312-NATURAL GAS CONVERSION PROGRAM/FUND

[8:04:53 AM](#)

CHAIR MUNOZ announced that the first order of business would be HOUSE BILL NO. 312, "An Act creating a low-interest loan program for homeowners who convert their homes to natural gas-fired heating; and creating the natural gas home heating conversion loan fund."

[8:05:28 AM](#)

REPRESENTATIVE AUSTERMAN moved that the committee adopt Amendment 1, labeled 27-LS1301\A.5, Nauman, 2/20/12, which read:

Page 1, line 2:

Following "**gas-fired**":

Insert "**, propane-fired, biomass, or electric**"

Following "**the**":

Delete "**natural gas**"

Page 1, line 6:

Delete "**Natural Gas**"

Page 1, line 7:

Delete "**Natural gas home**"

Insert "**Home**"

Page 1, line 10:

Delete "wood, or other non-natural gas-fired"

Insert "or wood"

Page 1, line 11:

Delete "heating device"

Insert "**, propane-fired, biomass, or electric heating device or district heat**"

Page 2, line 4:

Delete "heating device"

Insert "**, propane-fired, biomass, or electric heating device or district heat**"

Page 2, line 6:

Delete "heating device"

Insert "**, propane-fired, biomass, or electric heating device or district heat**"

Page 2, line 16:

Delete "natural gas"

Insert "**the energy source fueling or powering the new heating device**"

Page 2, line 18:

Delete "**Natural gas home**"

Insert "**Home**"

Page 2, line 19:

Delete "natural gas"

Page 2, line 20:

Delete "natural gas"

Page 2, line 27:

Delete "a natural gas-fired heating device"

Insert "the new natural gas-fired, propane-fired, biomass, or electric heating device or district heat"

Page 2, line 31:

Delete "natural gas"

Page 3, line 2:

Delete "heating device"

Insert ", propane-fired, biomass, or electric heating device or district heat"

[8:05:57 AM](#)

REPRESENTATIVE GARDNER objected for the purposes of discussion.

[8:06:04 AM](#)

REPRESENTATIVE TAMMIE WILSON, Alaska State Legislature, speaking as the sponsor of HB 312, explained that in discussions with the Alaska Housing Finance Corporation (AHFC) she understood that it wanted the legislation to be more specific in regard to the sources of energy. Being more specific should allow for the regulations to be written in an easier fashion and the program to come online in a quicker fashion. In response to Chair Munoz, Representative T. Wilson confirmed that this loan program would be for homes that convert from diesel generation to gas-fired, propane-fired, biomass, an electric heating device, or district heat. She clarified that Fairbanks has district heat, which is heat [generated] by hot water. If a homeowner changes from diesel to district heat, the result is zero emissions. She stated that district heat is the cleanest energy available, but it's only available to those residents within the city limits of Fairbanks.

[8:07:37 AM](#)

REPRESENTATIVE SADDLER requested further explanation of district heat, particularly in terms of how it is generated and distributed.

REPRESENTATIVE GARDNER surmised that it's called district heat because a massive boiler is being used to heat the water in a central location and piped to homes.

[8:08:30 AM](#)

BRANDON BREFCZYNSKI, Staff, Representative T. Wilson, Alaska State Legislature, explained that district heat is a byproduct of the coal power plant and the hot water is piped to individual residences. The individual residences must have a heat exchanger, which converts the hot water into heat and pumps it through baseboard units to provide heat in the home. In further response to Representative Saddler, Mr. Brefczynski confirmed that it's centrally generated and distributed.

[8:09:21 AM](#)

CHAIR MUNOZ inquired as to the anticipated beginning fund amount if HB 312 becomes law.

[8:09:40 AM](#)

STACY SCHUBERT, Director, Governmental Affairs & Public Relations, Alaska Housing Finance Corporation (AHFC), Department of Revenue, answered that at this point AHFC doesn't have a good feel for the amount of participation there will be in the loan program. Therefore, AHFC isn't comfortable making an estimate of the expenditure at this time.

[8:10:17 AM](#)

REPRESENTATIVE AUSTERMAN inquired as to why district heat is noted only once in the legislation.

REPRESENTATIVE T. WILSON pointed out that the legislation refers to "district heat" on page 2, lines 5 and 23. In further response to Representative Austerman, Representative T. Wilson noted her agreement that the reference to "district heat" should be in the title as well.

[8:11:47 AM](#)

REPRESENTATIVE AUSTERMAN moved that the committee adopt an amendment to Amendment 1 such that the language being inserted by Amendment 1 on page 1, line 2, includes the following language: "**, district heat**". He noted that the drafter should

work it in correctly. There being no objection, the amendment to Amendment 1 was adopted.

[8:12:23 AM](#)

REPRESENTATIVE DICK questioned whether the use of the term "biomass" is creating confusion because wood is biomass.

REPRESENTATIVE T. WILSON clarified that biomass encompasses more than just wood heat.

REPRESENTATIVE DICK expressed the need to ensure that an individual can't merely trade out one wood stove for another.

REPRESENTATIVE T. WILSON indicated that can't occur as it will be specified in the AHFC regulations that specify that the conversion would have to be a unit that's more economical and efficient. In fact, by the way the Environmental Protection Agency (EPA) does its certification one is almost required to convert to something more economical.

[8:14:03 AM](#)

REPRESENTATIVE SADDLER asked if the intent of HB 312 is primarily cost savings for consumers or to address air quality issues.

REPRESENTATIVE T. WILSON opined that Amendment 1 makes the program more of a statewide program, although the program originally targeted Fairbanks to address its air quality issues.

[8:15:00 AM](#)

REPRESENTATIVE SADDLER returned to the question of how wood isn't biomass, and asked whether a homeowner could convert from a wood stove to a wood pellet stove.

REPRESENTATIVE T. WILSON emphasized that the main goal of the program is to convert from oil. She reiterated that biomass encompasses more than just wood as it now includes wood chips, wood pellets, and compressed logs. She opined that the definition of biomass is continually changing.

[8:16:42 AM](#)

REPRESENTATIVE SADDLER asked if the sponsor considered having the legislation target [conversions] from wood and oil and leave

it to the consumer to determine what kind of alternative energy is utilized. He asked why the sponsor specified [conversions] from oil to specific [alternative energies].

REPRESENTATIVE T. WILSON mentioned that she had an amendment to open the program to everything, but she was concerned that would cause other problems. With regard to the lack of reference to solar energy, she pointed out that it isn't affordable to convert to for residential areas, which this legislation targets. If other alternative energy not specified in the legislation becomes affordable over time, the statute could be amended to address it at that time.

REPRESENTATIVE SADDLER encouraged the sponsor to place some sideboards on the definition of biomass.

[8:18:45 AM](#)

JOHN ANDERSON, Weatherization Officer, Alaska Housing Finance Corporation, Department of Revenue, explained that biomass is simply a larger outdoor unit that usually serves larger buildings, such as a school. He clarified, "You wouldn't do a swap of a biomass for a residential unit."

[8:19:12 AM](#)

REPRESENTATIVE SADDLER asked if the sponsor has any evidence that there would be any net increase in air quality by moving from oil or wood-fired to electric [heating].

REPRESENTATIVE T. WILSON said that Fairbanks residents wouldn't change to electric any time soon because of the high cost of electricity in Fairbanks. Electricity was added to the legislation in order to encompass those areas in the state where electricity is more affordable.

CHAIR MUNOZ acknowledged that biomass technology is now typically used for larger commercial buildings, but pointed out that the Southeast Integrated Resource Plan energy adviser discussed the opportunity to use biomass in home heating in Southeast Alaska. Therefore, the sponsor was asked to consider incorporating that into the legislation as it was broadened to be applicable statewide.

[8:20:37 AM](#)

REPRESENTATIVE CISSNA, drawing from several conferences she's attended, related that biomass was discussed in terms of peat and other products that don't have to be from a tree. Although she said she was happy to see the amendments to HB 312, she had the impression the discussion centers on switching from one [energy source] to another. She opined that it would be nice for a homeowner to have a burner that can be converted from one kind of fuel to another while still using the same equipment.

REPRESENTATIVE T. WILSON said that would be for the homeowner to decide. The intent of HB 312 is to acknowledge that oil is one of the dirtiest ways to heat a home and the cost of it continues to increase. The desire, she opined, is to encourage residents to consider alternative energy sources for air quality reasons as well as to achieve affordability for the homeowner. She highlighted that the rater is involved in order to help the homeowner make decisions based on what would work best in their particular case.

[8:23:52 AM](#)

REPRESENTATIVE GARDNER asked if the proposed program would be able to use the existing home energy raters, or would there have to be a new training program for raters.

MR. ANDERSON answered that he would anticipate using the same rater pool and AkWarm energy rater software to run various scenarios on the energy source in the community and recommend the most efficient unit. He characterized this proposed program as a conversion program.

[8:24:45 AM](#)

KATIE KOESTER, Community & Economic Development Coordinator, City of Homer, related support for HB 312. The City of Homer is expecting to bring natural gas to Homer as it's located only 14 miles away. While conversion to natural gas would generate large savings to residents, businesses, and public buildings, there will be significant upfront costs for those in the Homer area. The upfront costs would include the tariff to help pay for the transmission line, distribution system within city limits that is estimated to be over \$20 million, and the hookup fee from the main line to the residence/business that is about \$1,000, and the cost of converting home appliances and heating to natural gas. She opined that this proposed low-interest loan program would help individuals to be able to access the benefits of natural gas, which could generate savings in the long term.

[8:26:27 AM](#)

REPRESENTATIVE SADDLER asked whether having this type of fund in place is premature since there is no secured supply for natural gas in Fairbanks.

REPRESENTATIVE T. WILSON characterized the program as another tool that's available. She said she couldn't imagine anyone putting out the significant cost for natural gas at this point when the discussion has been that it won't be available for 30 years. Therefore, the legislation includes other options that are currently available as well as natural gas that is already available in certain parts of the state. She noted that there are still discussions about trucking, which would make it to the consumer sooner. In further response to Representative Saddler, she clarified that it's a one-time loan per customer.

[8:27:52 AM](#)

REPRESENTATIVE GARDNER recalled that the one-time loan amount is \$7,500, and asked if that amount would cover the conversion cost.

REPRESENTATIVE T. WILSON responded that the \$7,500 would cover the actual furnace/appliance, although there may be additional costs to run the line to the residence.

[8:28:30 AM](#)

REPRESENTATIVE FOSTER posed a scenario in which a homeowner utilizes the loan program for a conversion and then sells the home one year after the conversion. He asked if the homeowner will have to pay back the loan right away. Taking the scenario further, he asked if a homeowner who does a conversion, sells the home with the conversion, can then purchase another home and perform another conversion on a different house if the original loan was paid off.

REPRESENTATIVE T. WILSON acknowledged that would be addressed in regulation. However, she related her desire for it to be a one-time loan to the individual, just as is the case for other AHFC loan programs. Representative T. Wilson related her understanding that a homeowner would have to specify in the contract to sell the house that he/she has paid off the loan.

[8:29:41 AM](#)

REPRESENTATIVE GARDNER withdrew her objection to Amendment 1.

[8:29:55 AM](#)

There being no further objection, Amendment 1, as amended, was adopted.

[8:30:10 AM](#)

REPRESENTATIVE AUSTERMAN moved to report HB 312, as amended, out of committee with individual recommendations and the accompanying fiscal notes.

REPRESENTATIVE GARDNER objected for discussion. She explained that although she is anxious about moving legislation such as this with an indeterminate fiscal note that could become a large fiscal note, she understands the urgency of the situation in Fairbanks because of the air quality issues and in other communities because of the price of energy. Representative Gardner then withdrew her objection.

[8:31:42 AM](#)

There being no further objection, CSHB 312(CRA) was reported from the House Community and Regional Affairs Standing Committee.

[8:32:02 AM](#)

The committee took an at-ease from 8:32 a.m. to 8:34 a.m.

HCR 10-ENCOURAGING WASTE-TO-ENERGY TECHNOLOGY

[8:34:38 AM](#)

CHAIR MUNOZ announced that the final order of business would be HOUSE CONCURRENT RESOLUTION NO. 10, Encouraging the state, municipalities of the state, and private organizations in the state to weigh the benefits and costs of waste-to-energy technology and to consider waste-to-energy technology to help meet the energy and waste management needs of the state, municipalities of the state, and private organizations in the state. [Before the committee was CSHCR 10(ENE).]

[8:34:45 AM](#)

REPRESENTATIVE PETE PETERSEN, Alaska State Legislature, speaking as the sponsor of HCR 10, provided the following testimony:

Waste-to-energy is a class of technologies that turns garbage into energy while reducing the amount of landfill space needed. Waste-to-energy is a renewable energy source that generates between 500 and 600 kilowatt hours of electricity for every ton of garbage burned and with the use of district heating, an additional 2 megawatt hours of heat can be captured. That's from each ton. Waste-to-energy technology is being used around the world and in at least 24 states across the nation. According to the Energy Recovery Council, there are at least 86 waste-to-energy plants in the United States. This technology is also utilized currently at Eielson Air Force Base in Alaska, where garbage is burned in conjunction with coal. In Anchorage they are in the process of building a generator to harness the methane that's being created from the Anchorage landfill.

There are several different ways of creating energy from garbage. The waste can be burned directly or it can be processed into other combustible substances, like ethanol or biodiesel. Waste-to-energy plants are being used to provide power to major urban areas in the U.S. and Europe and also in small communities. Waste-to-energy plants have been successfully built in Arctic and sub-Arctic climates, including small communities. There are also much smaller waste-to-energy generators in the process of development. For example, one company is trying to develop a generator about the size of a large dumpster that will produce 120 kilowatts of electricity. And also the U.S. Army has been testing smaller sized generators in Iraq to provide an alternative form of energy for military operations.

As advances continue to be made in waste-to-energy technology, the number of communities in Alaska where this technology can be employed in a cost efficient manner will only increase. As you know, rural communities are working to replace the most expensive diesel fuel and the waste-to-energy offers an opportunity for larger communities as well. As the technology improves, smaller communities will likely be able to benefit. Waste-to-energy technology has

been shown to produce fewer emissions than would be created by just dumping it into the landfill. The EPA has determined that waste-to-energy has less environmental impact than almost any other source of electricity generation. Another benefit of waste-to-energy technology is that with the use of magnetic sorting after combustion, every year American waste-to-energy plants recover 770,000 tons of recyclable scrap metal that would otherwise have just been dumped into landfills. Waste-to-energy has the potential to be a piece of our statewide energy puzzle and I encourage the committee to support this resolution to encourage the state, municipalities, and private sector organizations to consider the costs and benefits of waste-to-energy technology.

[8:38:42 AM](#)

REPRESENTATIVE GARDNER, referring to the second "**WHEREAS**" in HCR 10, asked whether trash is considered a renewable resource.

REPRESENTATIVE PETERSEN pointed out that one of the reasons there is a steady stream of garbage in Alaska is that over 95 percent of what's consumed in Alaska is shipped into the state. In fact, Alaska has more garbage per capita than anywhere else. He highlighted that waste-to-energy technology would slow the filling of the state's landfills and would generate electricity.

[8:40:04 AM](#)

DAVID DUNSMORE, Staff, Representative Pete Petersen, Alaska State Legislature, explained that waste-to-energy is considered renewable because a large portion of it was originally a biomass source.

REPRESENTATIVE PETERSEN informed the committee that after the waste is burned, the ashes are buried in the landfill. Since the ashes are biodegradable, the landfill will likely never reach capacity and have to be moved. He told the committee that 30 years ago garbage in Anchorage was dumped at Merrill Field, but once it was full a new disposal site 15 miles away had to be utilized. Therefore, an additional cost for fuel to transport the garbage to the new landfill site is incurred as well as the time it takes to do so.

[8:41:53 AM](#)

REPRESENTATIVE CISSNA remarked that partnerships, such as the military and rural Alaska, are important with [waste and energy management]. She asked if that's part of this resolution.

REPRESENTATIVE PETERSEN told the committee that Eielson Air Force Base has been using this waste-to-energy technology for some time. He suggested that other military facilities would utilize waste-to-energy technology when it made sense, particularly since the military is also facing federal cuts. He opined that with the state's renewable energy grant fund, a community could apply for a grant to start a [waste-to-energy] plant. He has heard that some rural Alaska communities may be barging their garbage down the river for disposal. Therefore, there might a situation in which a larger rural community could build a waste-to-energy plant and other smaller communities could barge their waste to it in the summer.

[8:44:48 AM](#)

REPRESENTATIVE SADDLER inquired as to the costs of waste-to-energy technology per British thermal unit (Btu) versus natural gas, coal, or hydro power.

REPRESENTATIVE PETERSEN said that there are lots of upfront costs for waste-to-energy technology. He pointed out that the garbage would be low cost and possibly free, depending upon the arrangement. He also pointed out that a waste-to-energy plant would face the same process for permits that is necessary for coal or natural gas. Still, since the fuel, that is garbage, would be very low cost or free, it would actually cost less than purchasing coal or natural gas. Therefore, the costs would be upfront and the company would bond for it and pay it off over the course of [a specified time].

MR. DUNSMORE interjected that the largely upfront costs are capital intensive because to meet the EPA requirements for reduced emissions, one has to be using a fairly cutting edge technology. Since this technology is deployed in various sizes, the U.S. Department of Energy doesn't have a specific estimate for waste-to-energy. However, the U.S. Department of Energy does have an estimate for biomass, of which waste-to-energy is considered to be a form. He then related the U.S. Department of Energy's estimates for the levelized cost of power for a biomass plant, which included a waste-to-energy plant, in 2016 averaged \$112.15 per megawatt hour. In contrast, hydropower costs \$86.40 per megawatt hour while combustion turbine natural gas averages \$124.50 per megawatt hour and carbon capture coal averages

\$136.20 per megawatt hour. In further response to Representative Saddler, Mr. Dunsmore reminded the committee that the cost of a waste-to-energy plant is highly variable due to the size of the plant and the technology deployed. Therefore, it has to be assessed on a case-by-case basis.

[8:49:36 AM](#)

MR. DUNSMORE, in response to Representative Dick, agreed to provide the committee with those numbers

REPRESENTATIVE PETERSEN, for clarity, informed the committee that the \$112.50 is about \$.11 per kWh, which is comparatively in the range of and for some lower than what those in the Railbelt are paying now.

MR. DUNSMORE directed attention to the White Paper from the Solid Waste Association of North America (SWANA) entitled "Waste-to-Energy Facilities Provide Significant Economic Benefits" in the committee packet. The paper discusses the particulars of several [waste-to-energy] plants in the U.S., including the specific costs of those plants.

[8:51:06 AM](#)

REPRESENTATIVE SADDLER restated his earlier question regarding the costs of waste-to-energy technology versus its benefits, specifically in terms of environmental, permitting costs as well as the relative cost of this technology per Btu versus hydropower, coal, and natural gas.

[8:51:45 AM](#)

TED MICHAELS, President, Energy Recovery Council, echoed Mr. Dunsmore's testimony that the costs are highly variable, depending upon the technology used and the location of the site. Another difficulty in specifying the price is that there haven't been a great number of facilities being constructed recently, in the last 15 years, because of capacity issues. However, the first trend toward growth of this sector has been the expansion of existing facilities in the last couple of years. For instance, Florida has increased capacity by 50 percent at its existing facility for a cost of just over \$100 million. He acknowledged that the aforementioned is a large number and there will be even larger numbers because this is a capital intensive technology. These are sophisticated power plants with state-of-the-art emission control technologies as required by the Clean

Air Act. He noted that these facilities have excellent environmental records because they are required to meet the maximum (indisc.) technology standards and are among the most heavily regulated facilities in the U.S. With regard to the cost of waste-to-energy relative to other electricity sources, Mr. Michaels said that will be difficult to compare because a coal-fired power plant is designed specifically to generate electricity. Therefore, the Btu profile of coal is denser than the Btu profile of municipal solid waste. Although no one would use municipal solid waste as a fuel if they had to dig it out of the earth as is done with coal because of the low Btu profile, solid waste is something that exists in every community in the U.S. He said the primary purpose of all these [waste-to-energy] facilities is as a solid waste disposal unit, but the benefit of electricity is that this form of management of municipal solid waste is more attractive than a landfill. Additionally, there is the benefit of environmental controls and land sustainability. Mr. Michaels summarized that compared to a coal-fired facility a waste-to-energy facility will be more expensive on an electricity basis. He opined that in order to obtain a true cost comparison one would have to compare a waste-to-energy facility to a coal-fired facility and a landfill. These waste-to-energy facilities are under constant evolution as the controls and the combustion engineering are more sophisticated and the materials and labor will be more costly. Hundreds of companies in the U.S. are trying to develop new and better ways to convert waste into energy, which will drive the cost down over time, he opined.

[8:56:25 AM](#)

REPRESENTATIVE CISSNA posed the question: How much would it cost not to do this? Once waste is present it becomes extraordinarily expensive to get rid of it, which often results in large amounts of waste staying around in rural communities. She expressed hope that this resolution results in developing local jobs. She then inquired as to the subsidies available to get the original energy and various products to Alaska.

MR. MICHAELS said he isn't aware of any federal subsidies that are available for those types of purposes.

[9:00:02 AM](#)

REPRESENTATIVE SADDLER related his understanding that the implication of HCR 10 is that the benefits outweigh the costs of waste-to-energy technology. However, the cost of waste-to-

energy technology seems to be vague. He recalled Mr. Dunsmore's testimony that [the levelized] cost of power [for a biomass plant, which included a waste-to-energy plant, in 2016] averaged \$112.15 per megawatt hour. He asked if that's a fair equivalent. He expressed interest in Mr. Michaels' estimate of the relative costs of energy from waste-to-energy technology.

MR. MICHAELS recalled that Mr. Dunsmore's numbers were in terms of the cost of electricity versus constructing the facility upfront. In further response to Representative Saddler, Mr. Michaels said that the cost of generating energy from a waste-to-energy facility would, depending upon the size of the facility, be in the millions. He told the committee he has seen promises to deliver waste-to-energy facilities for \$10-\$20 million. He related that he has also seen a 3,000 ton per day waste-to-energy facility in a large, densely populated area in Florida be constructed for \$650 million.

CHAIR MUNOZ pointed out that the committee packet includes cost estimates from various areas in the country.

[9:02:05 AM](#)

CHAIR MUNOZ asked if there is an economy of scale for waste-to-energy technology that works for larger population areas, but is not as effective for smaller rural communities.

MR. MICHAELS, drawing from discussions with developers, related his understanding that there is a "sweet spot" such that larger waste-to-energy facilities that [process] 1,000-1,500 tons per day result in a good balance of cost for the investment. Still, there are a significant number of waste-to-energy facilities in the U.S. and the world that are much smaller facilities. For instance, in the 1980s Minnesota directed local communities to develop waste-to-energy facilities. Therefore, there are now nine facilities operating in Minnesota that generally [process] 80-100 tons per day. For example, in the 1980s the city of Red Wing invested \$2.5 million [for a waste-to-energy facility], but he didn't know what that facility would cost in today's dollars. He opined that as time passes, there will be technology improvements to construct smaller modular facilities in communities with small amounts of waste for an economical value. The aforementioned is how it has worked in Europe. Denmark has 28 facilities, many of which are small facilities that serve smaller communities and provide district heating to local communities. Waste-to-energy technology has had a strong presence in Europe in terms of waste management and saving

landfill space as well as getting as much energy out of the waste as possible.

[9:05:33 AM](#)

CHAIR MUNOZ asked if the waste-to-energy technology can be used to convert existing landfills into energy.

MR. MICHAELS surmised that Chair Munoz is referring to mining an existing landfill. Although mining an existing landfill has been done, it hasn't been done well and isn't the model followed now. He recalled that when the waste stream decreased for a waste-to-energy facility in a community in Portland, Maine, it mined its landfill and ran the product through the facility in order to maintain the energy levels from the facility. He noted that [the ability to mine an existing landfill] depends upon the climate such that a moist environment results in more decomposition whereas a dry environment results in less decomposition. Therefore, whether waste-to-energy technology can be used to convert existing landfills into energy would have to be determined on a case-by-case basis. Although it's possible, he said he wouldn't rely on it as the primary fuel source.

[9:07:14 AM](#)

REPRESENTATIVE PETERSEN pointed out that there hasn't been much discussion regarding the space heating aspect of waste-to-energy technology. He explained that depending upon the location of a waste-to-energy plant relative to a population center the heat could be transferred to heat other facilities. The aforementioned would provide additional efficiencies. In areas where there is curbside recycling that separates aluminum and glass, this [waste-to-energy technology] works very well.

[9:08:22 AM](#)

MR. DUNSMORE returned to Chair Munoz's question regarding the use of waste-to-energy technology in smaller areas. As Mr. Michaels discussed there are economies of scale and the smaller [the facility] the more expensive it is to construct. However, the waste-to-energy technology has been successfully deployed in Scandinavian countries on a small level; these are areas that have similar challenges to those faced in rural areas in Alaska. He directed the committee's attention to the committee packet, which includes information regarding three Scandinavian waste-to-energy plants. One of the plants is located in Iceland just

south of the Arctic Circle and serves a metropolitan area of 2,867 people. As a point of reference, the aforementioned community in Iceland is just a little smaller than Nome and a little larger than Dillingham. He reviewed the other Scandinavian waste-to-energy plants that are reviewed in the committee packet.

[9:10:23 AM](#)

REPRESENTATIVE CISSNA emphasized that economic costs in rural remote areas of Alaska don't work the same [as hub communities] because of the lack of jobs and cash economy. She then recalled the community of Nikolski in the Aleutians, which because of its strategic position has a clinic, telemedicine, and lots of technology. She estimated that there are 80-100 communities like that in Alaska, and thus it's not comparable to Minnesota. She stressed that waste-to-energy technology in Alaska could be significant, if done correctly.

[9:13:33 AM](#)

REPRESENTATIVE GARDNER moved to report CSHCR 10(ENE) out of committee with individual recommendations and the accompanying fiscal notes. There being no objection, it was so ordered.

[9:14:01 AM](#)

ADJOURNMENT

There being no further business before the committee, the House Community and Regional Affairs Standing Committee meeting was adjourned at 9:14 a.m.