

**ALASKA STATE LEGISLATURE**  
**HOUSE SPECIAL COMMITTEE ON ENERGY**

February 7, 2012

3:12 p.m.

**MEMBERS PRESENT**

Representative Neal Foster, Co-Chair  
Representative Lance Pruitt, Co-Chair  
Representative Bob Lynn  
Representative Kurt Olson  
Representative Dan Saddler  
Representative Pete Petersen

**MEMBERS ABSENT**

Representative Chris Tuck

**COMMITTEE CALENDAR**

HOUSE BILL NO. 39

"An Act requiring a utility applying to the Regulatory Commission of Alaska for a new or revised rate to have a refund procedure in place."

- HEARD & HELD

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 39

SHORT TITLE: RCA UTILITY RATES; REFUND PROCEDURES

SPONSOR(S): REPRESENTATIVE(S) PETERSEN

01/18/11	(H)	PREFILE RELEASED 1/7/11
01/18/11	(H)	READ THE FIRST TIME - REFERRALS
01/18/11	(H)	ENE, L&C
02/10/11	(H)	ENE AT 3:00 PM BARNES 124

02/10/11 (H) Heard & Held  
02/10/11 (H) MINUTE(ENE)  
03/17/11 (H) ENE AT 3:00 PM BARNES 124  
03/17/11 (H) Heard & Held  
03/17/11 (H) MINUTE(ENE)  
02/07/12 (H) ENE AT 3:00 PM 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

#### **WITNESS REGISTER**

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

**POSITION STATEMENT:** Provided information and answered questions during the hearing on HCR 10.

#### **ACTION NARRATIVE**

[3:12:24 PM](#)

**CO-CHAIR NEAL FOSTER** called the House Special Committee on Energy meeting to order at 3:12 p.m. Representatives Foster, Pruitt, Lynn, Petersen, Saddler, and Olson were present at the call to order. Representative Tuck was excused.

#### **HB 39-RCA UTILITY RATES; REFUND PROCEDURES**

[3:13:00 PM](#)

CO-CHAIR FOSTER announced that the first order of business would be HOUSE BILL NO. 39, "An Act requiring a utility applying to the Regulatory Commission of Alaska for a new or revised rate to have a refund procedure in place."

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CO-CHAIR FOSTER said that HB 39 would be held over.

**HCR 10-ENCOURAGING WASTE-TO-ENERGY TECHNOLOGY**

[3:13:55 PM](#)

CO-CHAIR FOSTER 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.

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REPRESENTATIVE SADDLER moved to adopt the proposed committee substitute (CS) for HCR 10, Version 27-LS0685\B, Bullock/Kane, 3/21/11, as the working document.

[Version B was previously adopted by the House Special Committee on Energy at its meeting on 4/5/11.]

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CO-CHAIR PRUITT objected for the purpose of discussion. There being no discussion, he withdrew his objection.

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There being no further objection, the proposed CS for HCR 10, Version B, was before the committee.

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REPRESENTATIVE PETE PETERSEN, Alaska State Legislature, prime sponsor, introduced the proposed CS for HCR 10. He informed the committee waste-to-energy technology is exciting because it turns garbage into energy while reducing the amount of landfill space needed. Waste-to-energy is a renewable energy source which generates between 500 to 600 kilowatt hours (kWhs) of electricity for every ton of garbage burned. In addition, two megawatt hours (MWhs) of heat can be captured. This technology is being used around the world and in at least 24 states; in fact, there are at least 86 waste-to-energy plants in the U.S., such as the one at Eielson Air Force Base, where garbage is

being burned along with coal. In Anchorage, a generator is being built that will harness the methane gas created from the landfill. To harvest energy from garbage, waste can be burned directly, or it can be processed into other substances such as ethanol or biodiesel. Waste-to-energy plants are successful in major urban areas and in smaller areas, and in Arctic and sub-Arctic communities. For example, there is a generator which is being developed that is the size of a large dumpster and that produces 120 kilowatts (kW) of electricity. Representative Petersen opined recent advances in this technology can be employed in Alaska in a cost-effective manner for large and small communities that are trying to lessen their dependence on diesel fuel. Another option for the use of waste-to-energy technology is for the generation of heat and electricity in remote and off-grid facilities, in fact, this type of facility could save money at the Goose Creek Correctional Center. Representative Petersen observed that the statewide energy policy encourages a diversified approach to meeting the state's energy needs, and pointed out that waste-to-energy technology produces fewer emissions than dumping waste in the landfill and the Environmental Protection Agency (EPA) cites less environmental impacts than for other sources of electricity. Other benefits are the ability to recover scrap metal by magnetic sorting, financial savings to communities, and bird control. He encouraged the committee to support the resolution.

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DAVID DUNSMORE, staff to Representative Pete Petersen, Alaska State Legislature, observed there is a lot of good information on this technology with which to answer the committee's questions from the first hearing. One of the biggest concerns was whether this technology will work in an Arctic environment and in smaller, rural communities. He referred to fact sheets included in the supplemental committee packet that gave information on a facility operating in Iceland very near the Arctic Circle which serves a population of 2,867 and compares to the populations of Nome, Dillingham, and Kotzebue; a facility in Norway operating north of the Arctic Circle which serves 8,000 people; and a facility in Finland, with a population of 100,000, which is near the population of the Fairbanks metro area. Also included in the packet is a report prepared by Legislative Research, Legislative Legal and Research Services, Legislative Affairs Agency, on the permitting requirements for a waste-to-energy plant in Alaska. Many permits are required, including those from EPA that are required for a project on federal land, or built with federal funds. Typically, the Department of

Natural Resources (DNR) assigns someone to direct applicants to the correct divisions within DNR. Also, there are factors that affect the type of permit required, and he named several departments and divisions that could be involved. Mr. Dunsmore pointed out that air quality and solid waste permitting would be handled by divisions within the Department of Environmental Conservation (DEC), and the Division of Fire and Life Safety, Department of Public Safety (DPS), is responsible for approving buildings and fuel tanks. Permits regarding endangered and threatened species would be issued by the Alaska Department of Fish & Game (ADFG) and the U.S. Fish and Wildlife Service (FWS), U.S. Department of the Interior. Other agencies that might become involved are the Natural Resources Conservation Service, U.S. Department of Agriculture, the Federal Communications Commission (FCC), the Department of Transportation & Public Facilities (DOTPF), the U.S. Bureau of Tobacco, Alcohol and Firearms, U.S. Department of Justice, and the U.S. Coast Guard. In response to the committee's question regarding whether there is support for this technology from the solid waste industry, he said there are supporting documents in the committee packet from the Solid Waste Association of North America and the American Society of Mechanical Engineers.

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REPRESENTATIVE PETERSEN recalled the City of Ames, Iowa, has had a waste-to-energy plant since 1975, and is upgrading its plant to integrate natural gas. He cautioned that finding space for landfills is becoming a problem, but this facility would only bury ash.

REPRESENTATIVE FOSTER asked whether the sponsor has encountered resistance to the technology.

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MR. DUNSMORE stated there has been some criticism in large urban areas of the U.S., warning that these facilities may discourage recycling and composting. However, EPA is supportive because waste-to-energy emissions are very restrictive - actually greater than those allowed by waste decomposing in a landfill. On the other hand, recycling of metals may be increased because they are more accessible after burning.

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REPRESENTATIVE PETERSEN pointed out that in many parts of Alaska, it is cost-prohibitive to ship recycled materials out-of-state and it makes more sense to burn them.

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CO-CHAIR PRUITT noted that supporting documentation in the committee packet indicates leaving garbage in the ground produces 32 percent more carbon dioxide (CO2) than the combustion of garbage. He asked how EPA will deal with other concerns such as fine particulates, trace dioxin, and acid gas emissions.

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MR. DUNSMORE assured the committee EPA has specific standards for the acceptable levels of pollutants. He called attention to a 2007 EPA memo included in the original committee packet that documented emissions reductions from combustion waste facilities - during 1990 to 2005 - of 96 percent for mercury levels, 96 percent for cadmium, 97 percent for lead, and 96 percent for particulate matter.

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CO-CHAIR PRUITT surmised toxic particulates are contained using new technology.

MR. DUNSMORE confirmed that the new technology uses "super-heat" and regulates the chemicals that escape. Because more plants have come into operation, agencies "know what issues to consider when permitting for these plants." In further response to Co-Chair Pruitt, he expressed his belief that after direct combustion the ash is buried subject to the normal restrictions of the landfill. He opined "landfills are designed to be able to contain ... elements of ... those sort of chemicals."

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REPRESENTATIVE PETERSEN added that as of 2005, waste-to-energy facilities have complied with the Clean Air Act, reducing some pollutants as much as 99 percent. Regarding permitting, he observed the permitting requirements would be similar to those of a facility generating electricity from natural gas.

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CO-CHAIR PRUITT asked whether the operators of existing plants work to control the content of the trash, or if everything burns, including toxic materials.

MR. DUNSMORE explained that the facilities use several techniques to sort the garbage for the distillation necessary to create ethanol or biodiesel. For direct combustion plants, there are special containment areas so everything is burned. However, biomedical waste needs special permitting to burn. The containment chamber must be very secure because of the high heat generated during the process. The plants in Iceland and Norway are very automated.

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REPRESENTATIVE SADDLER asked for confirmation that waste heat is considered renewable.

MR. DUNSMORE said waste heat is considered a biomass technology. However, at Eielson Air Force Base, where waste energy is supplemented by burning coal, it is not considered renewable. In further response to Representative Saddler, he said the most efficient method to turn waste into energy is by a landfill large enough to burn with only the methane created by the garbage, as will be the case at the Municipality of Anchorage Regional Landfill. Again, on a large scale, gasification and distillation can be more efficient, but on a smaller scale, fuel must be added to keep the combustion going.

REPRESENTATIVE SADDLER asked whether there had been any reactions to the resolution at this point.

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MR. DUNSMORE said no adverse reactions have been received.

REPRESENTATIVE PETERSEN noted that in rural areas during the winter the hot air or water created by one of these facilities could be used to heat buildings nearby.

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REPRESENTATIVE FOSTER surmised that Norway and Iceland have other sources of cheap fuel such as thermal and hydroelectric. He questioned whether there are challenges to implementing this technology in rural Alaska.

REPRESENTATIVE PETERSEN responded that one of the advantages to this system is that it will displace the use of diesel fuel. In addition, wind energy can be integrated into the system, which is an advantage for rural areas.

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MR. DUNSMORE acknowledged that there are the challenges of construction in rural areas such as shipping expense, the training and hiring of a workforce, and the availability of land - challenges that are present with any project in rural areas. Returning to the question of permitting, he added that the Regulatory Commission of Alaska (RCA) would require a Certificate of Public Convenience and Necessity for any electrical generation project.

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REPRESENTATIVE PETERSEN mentioned that scaled-down versions of these plants that will fit in a Continental Express (CONEX) container for shipping by barge or truck are being developed.

REPRESENTATIVE FOSTER asked for cost estimates on any of the facilities.

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MR. DUNSMORE said a large facility being built in Florida is expected to cost \$650 million. He said he will advise the committee about costs on smaller projects; however, the "CONEX size" is still in the development phase.

REPRESENTATIVE PETERSEN advised that an interested community may qualify for a renewable energy grant to defray some of the cost. He then informed Co-Chair Foster that public testimony was taken at the last hearing.

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REPRESENTATIVE SADDLER asked whether the change in the proposed CS was due to a typographical error.

REPRESENTATIVE PETERSEN said yes.

MR. DUNSMORE, in answer to a previous question, said a plant built in 1988 in Portland, Maine, which processes 175,000 tons of waste per year and produces 100,000 MWhs annually, cost \$93

million to build. He stated that would be of a scale similar to an urban Alaska community.

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CO-CHAIR PRUITT said a supporting document indicated that the Eielson Air Force Base plant produces .2 MW of power. He asked for an estimate of how much energy a plant would produce in a community such as Nome.

MR. DUNSMORE estimated that generally each ton of garbage produces between 500 and 600 kWhs and up to 2 MWhs of heat.

REPRESENTATIVE PETERSEN pointed out that for Nome, which burns "tens of thousands of gallons of diesel fuel generating electricity" every gallon that is displaced would save money. Furthermore, construction of the facilities can be bonded and paid for over time, as in the case of the Anchorage plant which is costing \$90 million to \$100 million.

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MR. DUNSMORE provided U.S. Department of Energy general average cost estimates for levelized cost-of-power for a plant coming on-line in 2016: \$112.50 per MWh for power generated by biomass; \$86.40 per MWh for power generated by hydroelectric; \$124.50 per MWh for combustion turbine natural gas; and \$136.20 per MWh for carbon capture coal.

REPRESENTATIVE SADDLER moved to report CS for HCR 10, Version 27-LS0685\B, Bullock/Kane, 3/21/11, out of committee with individual recommendations and the accompanying zero fiscal notes.

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There being no objection, CSHCR 10(ENE) was reported out of the House Special Committee on Energy.

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#### **ADJOURNMENT**

There being no further business before the committee, the House Special Committee on Energy meeting was adjourned at 4:03 p.m.