

**2/02/11
PRESENTATION
FOLLOW-UP TO
ALASKA
SUSTAINABLE
ENERGY ACT**

<TARGET><BILL></BILL><SUBJECT>2-02-11 PRESENTATION
FOLLOW-UP TO ALASKA SUSTAINABLE ENERGY
ACT</SUBJECT><COMM>SRES27</COMM></TARGET>

Mary Jackson

From: Jeff Stepp
Sent: Sunday, January 30, 2011 7:28 PM
To: Mary Jackson
Subject: SB 220 Follow-Up / Testimony

Hi Mary,

Here's an updated list of the folks who will be participating in the Alaska Sustainable Energy Act overview:

Opening remarks

Senator McGuire and Senator Wielechowski -- confirmed

Comments on the Implementation of SB 220

Gwen Holdmann, Executive Director, Alaska Center for Energy and Power (ACEP) -- confirmed

Comments on the Implementation of SB 220

Marilyn Leland, Executive Director, Alaska Power Association (APA) -- confirmed

Comments on the Implementation of SB 220

Hannah Gustafson, Deputy Director, Renewable Energy Alaska Program (REEP) -- confirmed

Emerging Energy Technology Fund

Alaska Energy Authority (Sara L. Fisher-Goad and/or others) -- confirmed

Alaska Affordable Heating Program

Ron Kreher, Director, Office of Public Assistance, DHSS -- confirmed

Retrofitting of State Facilities

Joel St. Aubin, Chief of Statewide Public Facilities, DOTPF -- confirmed

Compressed Natural Gas Study

Diana Rotkis, Fleet Manager, DOTPF -- confirmed

The Feasibility of a Municipal Energy Improvements Financing Program

TBA, Department of Revenue -- not confirmed

Standardized Methodology to Collect and Store Data

TBA, Office of Management and Budget -- not confirmed

Obviously (!), each speaker will have to keep it short. I have told each of them that they'll just have a few minutes to present a few main points. It will be more like public testimony than the kind of detailed overviews we've been receiving.

If you have any other suggestions, please let me know!

Best,
JS

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Governor Sean Parnell
STATE OF ALASKA

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January 31, 2011

The Honorable Mike Chenault
Speaker of the House
Alaska State Legislature
State Capitol, Room 208
Juneau, AK 99801-1182

Dear Speaker Chenault,

In accordance with Ch. 83, SLA 10, Sec. 40, Page 25, Line 8, I am submitting the enclosed report to the Legislature regarding State energy programs and increasing coordination and efficiency of the State's energy programs and services.

To reach the State's energy policy goal of 50 percent electricity generated via renewable resources by 2025, our energy efforts and investments must be targeted and strategic. Conservation, weatherization, and energy efficiency are key components of our energy strategy as is our proposal to advance a large hydroelectric project in south central Alaska to supply much needed energy and jobs. Renewable energy fund grants will lower the cost of energy in rural Alaska and the integrated resources planning efforts will create the energy road map for south east Alaska.

I look forward to working with the Legislature to reach our energy policy goals.

Sincerely,

A handwritten signature in cursive script that reads "Sean Parnell".

Sean Parnell
Governor

Energy Report to the Legislature

OFFICE OF THE GOVERNOR ENERGY REPORT. Not later than January 31, 2011, the Governor shall submit a report to the Legislature providing recommendations for how best to structure State energy programs and offices to increase the coordination and efficiency of the State's efforts and describing State energy services and programs in their entirety. The report must also include an examination of existing powers and duties and the structure of the Alaska Energy Authority and its board of directors, specifically analyzing the relationship between the Alaska Energy Authority and the Alaska Industrial Development and Export Authority.

Executive Summary

The State of Alaska has a variety of energy programs and initiatives. State and federal funding for both formula driven and competitive award programs has increased significantly in recent years. Several State departments and State corporations have roles to play in the coordination and delivery of energy related programs. Some State agencies' programs have a secondary focus on energy – primarily in the realm of resource management but also in infrastructure development and maintenance. It is in the State's interest for the Executive Branch to clarify and further define each agency's role and responsibility for certain Alaska energy programs and services.

Alaska's Constitution directs that natural resources be developed for the maximum benefit of the people. The 49th state is blessed with abundant resources – oil, gas, coal, timber, water, and wind. Necessarily, agencies with primary responsibility for the management of those resources must play a role in the provision of energy supplies where it is consistent with the larger constitutional and legislative direction. The roles and responsibilities of each agency need to be well understood and coordinated.

In recent years, the Alaska Energy Authority (AEA) has become a key agency for the planning of energy infrastructure and financing. While key improvements to AEA's authorizing statute are necessary at this time, there remains a need for continued coordination across multiple State agencies, corporations, and funding streams.

Policy development, legislative action, and implementation will need to be coordinated across departments if Alaska's energy future is to remain focused.

Recommendations to Change Structure

Changes to Services and Programs

Services and programs should be evaluated on their effectiveness in providing value to communities and residents of the state of Alaska. Reorganization of reporting structure should be implemented only if there is evidence supporting a reasonable expectation that program effectiveness will be improved.

AEA's powers should be changed to allow AEA to own new energy projects and to hire staff. The introduction of House Bill 103 and Senate Bill 42 allow the Legislature to consider these changes and accomplish the changes through passage of a bill.

House Bill 103 and Senate Bill 42 would authorize and allow AEA to move aggressively to pursue a large hydroelectric project (Susitna Dam) that would supply needed renewable energy to Interior and Southcentral Alaska. AEA could further the design, permitting, construction, and operation of the Susitna Dam project. This project is critical to Alaska reaching its energy policy target of generating 50 percent of its electricity through renewable energy by 2025.

The AEA managed Bulk Fuel Revolving Loan Fund and the Department of Commerce, Community and Economic Development (DCCED) managed Bridge Loan Fund should be merged into one program with two levels of service. Currently, the zero-percent Bridge Loan Program provides a disincentive for borrowers to increase their creditworthiness. AEA and DCCED are working to accomplish this merger.

A Commercial Energy Efficiency Loan program should be developed. Currently, the State has addressed needed energy efficiency programs for public buildings and residential homes. However, commercial buildings have energy efficiency upgrade needs as well, often in lighting. Providing loan funds specific to this need should be explored. DCCED, AEA, and the Alaska Industrial Development and Export Authority are developing options for an appropriate program.

Changes to Current Coordination Efforts

Currently, coordination efforts occur through meetings between agency personnel and the Office of the Governor, including, but not limited to, guidance from the Office of Management and Budget (OMB). Energy policy encompasses more than the annual budget and needs to be coordinated among the commissioners of the various agencies involved, the Governor's office, and the Legislature. The Energy Policy Coordinator (EPC) will provide additional focus and coordination for energy programs and policies that cross lines of several State agencies. The EPC will be the spokesperson for energy issues on behalf of the Governor and will work with commissioners, agency personnel, etc., to communicate with the Legislature.

The mission of the EPC is to help commissioners, staff, OMB, and the Governor's office ensure the State's energy resources and energy programs are devoted in a way that produce results which advance the State's energy policy priorities.

The EPC should further evaluate energy services and programs, measure their results, and make recommendations for any necessary changes beyond the recommended changes provided in this report. The EPC is an effective way to provide coordination between the various State energy programs and to communicate with the Legislature. The EPC will also be the mediator between agencies that have conflicting points of view or the appearance of duplicating efforts.

State Energy Programs and Offices

Description of Agency Coordination Efforts

For new policy initiatives in energy programs, the Office of the Governor plays a key role in the development of the new programs and planning. Agency personnel are, of course, charged with implementing authorized programs and efficiently using funds appropriated by the Legislature for programs.

Background and History of State Energy Office

In 1996, at the request of the United States Department of Energy (USDOE), the Governor designated AHFC as the lead agency for the USDOE State Energy Program (SEP). The SEP was the result of the USDOE's consolidation of two formula grant programs: 1) the State Energy Conservation Program managed by AHFC, and 2) the Institutional Conservation Program, managed by the former Department of Community and Regional Affairs, Division of Energy. In 1996, AHFC and Division of Energy, entered into a Memorandum of Agreement that delineated how SEP funds were to be managed and shared by AHFC and Division of Energy. The agreement stated that 60 percent of SEP funds would be transferred to the Division of Energy.

In 1999, the Department of Community and Regional Affairs was statutorily eliminated and the Division of Energy programs became the responsibility of AEA. After AHFC informed AEA that it would transfer no funds to AEA for the former Division of Energy programs, a new Memorandum of Agreement was signed by AHFC and AEA. The 2001 agreement delineated how SEP funds were to be managed and shared by AHFC and AEA. The agreement stated that 50 percent of SEP funds would be transferred to AEA.

During the 2008 Legislative Session and each subsequent session, the State of Alaska has created new energy programs and provided significant funds for various energy programs and initiatives. The federal government has also provided substantial funds, both formula driven and competitive awards, for energy programs.

Recent Coordination Efforts

The annual SEP allocation to Alaska has been approximately \$300,000 during the past few years, although the allocation in FY2008 was \$250,000. Half of the money is directly transferred from AHFC to AEA through a Memorandum of Agreement. Energy audits on schools and community buildings are the primary use of that funding. The other half of the money is used for educational programs sponsored by AHFC. These programs include workshops on energy efficiency for real estate professionals, builders, and homeowners, as well as paying for printing of various publications on energy efficiency and renewable energy. Additionally, funds supplement the Weatherization Assistance Program to reduce electrical use in eligible homes.

ARRA funds for 2009 totaled \$28.232 million for the State energy program. Performance contracting on schools, State owned public buildings, and municipal buildings will use about two-thirds of the funding, with improvements to BEES, ARIS and AkWarm also being upgraded.

AHFC and AEA should, and are, updating their Memorandum of Agreement to memorialize both AHFC's and AEA's role in managing certain Alaska energy programs and to confirm the distribution of SEP funds. Similar to the process followed with ARRA funds, when circumstances arise that necessitate additional input, AHFC and AEA will coordinate efforts with the Office of the Governor to ensure the administration's priorities are carried out by the agencies.

Alaska Energy Authority

Examination of AEA Structure and Board of Directors

AEA was created by the Alaska State Legislature in 1976. AEA is a public corporation and a component unit of the State of Alaska. AEA's mission is to reduce the cost of energy in Alaska. The Board of Directors of the Alaska Industrial Development and Export Authority (AIDEA) is also the AEA Board of Directors. The AEA board of directors has seven members: five public members and the Commissioner of Revenue and the Commissioner of Commerce, Community and Economic Development. The five public members are appointed by the Governor, each of whom has expertise in private sector business or industry, or both, and possesses demonstrated leadership skills. The public members serve at the pleasure of the Governor for two-year terms.

AEA History

Throughout the 1980's, AEA worked to develop the State's energy resources as a key element in diversifying Alaska's economy. A number of large-scale projects were constructed; four of those projects were sold in 2002, and one was transferred to the City of Larsen Bay in the fall of 2010. The Bradley Lake Hydroelectric project together with the Alaska Intertie's 170 miles of transmission line help provide Interior Alaska with cheaper energy available in the Southcentral portion of the state. Pursuant to statute, on August 12, 1993, the board of directors of AIDEA, a public corporation and a political subdivision of the State, became the board of directors of AEA. AEA continues to exist as a separate legal entity. The corporate structure and operating assets of AEA were retained but the ability to have employees, and construct or acquire energy projects was eliminated. Among other things, AIDEA provides personnel services for AEA. On April 10, 2008, the board appointed a separate and independent AEA executive director who is an employee of AIDEA, but is not subject to supervision by AIDEA's executive director. Previously, the AEA and AIDEA executive directors were the same. There is no commingling of funds, assets, or liabilities between AIDEA and AEA and there is not responsibility of one of these entities for the debts or obligations of the other.

The 1993 legislation required AEA, to the maximum extent feasible, to enter into contracts with public utilities and other entities to carry out AEA duties respecting the ongoing operation and maintenance of the AEA owned operating assets; this has occurred with oversight responsibility retained by AEA.

Pursuant to legislation effective July 1, 1999, rural energy programs previously administered by the former Department of Community and Regional Affairs, Division of Energy, were transferred to AEA for administration, as part of a larger reorganization of State agencies. Several general energy programs primarily focused on rural energy issues moved to AEA. Rural energy programs were originally part of AEA prior to the reorganization that occurred in 1993.

During fiscal year 2008, legislation added energy development programs to AEA. AEA has developed the *Alaska Energy Pathway*, a guide for Alaskan communities to utilize local energy resources. AEA has also established the Renewable Energy Fund and Grant Recommendation Program.

AEA Current Programs and Projects

AEA - Rural Energy Infrastructure

Traditionally, State agencies will grant funds to a community or utility to build a project. However, many rural communities lack the necessary financial resources and technical expertise to manage and construct energy infrastructure upgrades. AEA's rural energy infrastructure program provides direct project management support to design and construct rural powerhouses and bulk fuel storage facilities. Under this project management model, AEA manages the federal grant or State appropriated project, hires a construction manager, provides project oversight, and bookkeeping services for locally hired labor.

Rural Power System Upgrades

Electricity provides for lighting, communications, heat, and power necessary to operate infrastructure that supports all other elements needed in any community to permit safe and healthy living conditions. In rural communities throughout Alaska, electricity is generated by a small local "system" (generation and distribution) using diesel fuel at a cost that is three to five times higher than that in urban parts of the state. Of 200 rural communities, approximately half are served by cooperatives or another form of utility that performs under a well-established organization. Others are served by very small entities, many which experience technical and administrative problems due to lack of economies of scale and/or lack of specialized skills in the community.

AEA manages powerhouse and electrical distribution upgrades that may include efficiency improvements, powerhouse upgrades or replacements, line assessments, lines to new customers, demand-side improvements, and repairs to generation and distribution systems. System upgrades to be funded may be identified through a variety of ways, including via technical assistance, advanced by the local community or directed by the Legislature.

Bulk Fuel Upgrades

Most rural Alaska communities receive fuel for heating, generation of electricity, vehicles, and other uses only during summer months when coastal areas and rivers are ice free. These communities typically store enough fuel to meet their needs for an entire winter. Many rural bulk fuel tank farms were constructed more than 20 years ago and are in poor condition. With substantial contributions from the Denali Commission, the bulk fuel upgrades program provides funding for the design/engineering, business planning, and construction management services to build code-compliant bulk fuel tank farms in rural communities.

In the early 1990's, many rural communities faced the very real threat that they would no longer be allowed to take delivery of fuel in bulk quantities because of the condition of their bulk fuel storage tank farms. The most common problems were the piping systems to, from, and within the tank farms. The AEA bulk fuel upgrade retrofit and revision program is funded with grants from the Denali Commission and State appropriations.

AEA Alternative and Renewable Energy Program and Projects

AEA's alternative and renewable energy program promotes the use of renewable resources as alternatives to fossil fuel-based power and heat, and measures to improve energy production and end use efficiency. In rural areas, the program may support developing local sources of coal and natural gas as diesel alternatives. The Alaska State Legislature created the Renewable Energy Fund

(REFund) in 2008, with the intent to appropriate \$50 million annually for five years. The Legislature authorized AEA to manage the REF project application process, project evaluations, recommendations, completion of grant agreements, and disbursement of funds to grantees. In addition to managing the Renewable Energy Grant Fund and Recommendation Program, AEA is a technical resource for entities wanting to develop alternative and renewable resources. AEA staff is frequently called upon to participate in conferences, make public presentations regarding program areas, and provide technical advice and assistance.

Renewable Energy Program Areas

The Alaska Energy Inventory (cooperative project of AEA and Alaska DNR) consists of renewable and fossil resource data, energy supply and usage data, and other information useful for energy planning and development.

The Biomass Energy Program develops projects using wood, sawmill residue, and municipal wastes for energy; tests air emissions and performance of fish oil and diesel blends as fuel; assesses the viability of recovering fish oil from fish processing wastes.

The Geothermal Program supports projects such as the Chena Hot Springs power plant; organizes workshops and training sessions; coordinates State assistance in developing other potential projects such as Mt. Spurr on the Railbelt and Makushin in Unalaska.

The Small-scale Hydroelectric Program provides technical assistance through staff and contractors for hydro feasibility assessment; manages public funding for project construction.

The Ocean and River Energy Program evaluates technology and feasibility of converting wave motion, tidal and river flow into power in partnership with Alaska utilities and the Electric Power Research Institute.

The Wind Program assists utilities and communities in resource evaluation, training, environmental assessment, regional development, conceptual design and economic feasibility of rural wind-diesel systems; assists with Railbelt wind integration studies.

The Emerging Energy Technology Fund under AS 42.45.375 was established in 2010. AEA may make grants to eligible applicants for demonstration projects of technologies that have a reasonable expectation to be commercially viable within five years and that are designed to: 1) Test emerging energy technologies or methods of conserving energy; 2) Improve an existing energy technology; or 3) Deploy an existing technology that has not previously been demonstrated in Alaska. The statute provides for an advisory committee to assist AEA in the development of the program and review of potential projects to be funded. AEA is in the process of soliciting the first round of grant applications for this new program.

Examination of AEA and AIDEA Relationship

Since 1993, AIDEA staff members are responsible for administering AEA programs. In 1999, when the Department of Community and Regional Affairs (DCRA) was dissolved, AEA became responsible for former DCRA Division of Energy programs and certain DCRA staff became AIDEA employees. In 2008, the AIDEA and AEA by-laws were changed to allow the board of directors to hire an AIDEA employee as an AEA executive director who is a different person than

the AIDEA executive director. The AEA executive director serves at the direction of the AEA board of directors.

As mentioned earlier, Governor Parnell has introduced legislation (SB 42 and HB 103) to allow AEA to hire staff. The legislation allows for the transfer of certain AIDEA employees to AEA. AIDEA's and AEA's relationship has existed for over 17 years, and many employees have shared responsibilities to both organizations. For efficiency purposes, AIDEA and AEA will continue to share certain services and be located in the same building. A complete split of the two corporations is estimated to cost at least \$2 million and certain staff expertise would be difficult to duplicate. SB 42 and HB 103 provide the most cost effective way for both agencies to continue to pursue their distinct missions and to benefit from shared services and staff.

Other State Programs

Oil and Gas – DNR, Revenue, Multi-Agency Gasline Team, ANGDA

The Department of Natural Resources (DNR) is the State agency charged with primary responsibility for the management of resources on State lands. Resources managed by the agency that have an impact on energy supplies and demands include oil and gas, forestry, minerals (especially coal), water (tides and rivers), geothermal, and the land below many areas with significant wind.

The management of these resources is guided by the Constitution and enabling statutes. Development of these resources provides contributions to the public, usually in the form of revenue to the treasury and funds being deposited in the Alaska Permanent Fund.

Many of these resources can provide energy when they are developed. However, most population centers in Alaska are not large enough to achieve the efficiencies of scale required to provide that energy at a low cost to the consumer. Often, an export market of some sort is required to achieve that efficiency, which energy is then also available to the local population in proximity to the development. A key focus of work for AEA has been, and will continue to be, to find ways for local populations to share in energy development.

Interests in development of State resources must be ordered and harmonized. This is done through the legislative process, which establishes the statutory and budgetary boundaries by which DNR may operate. The development of State policy as it relates to an Alaska North Slope (ANS) natural gas pipeline illustrates the principles involved.

The Alaska Gasline Inducement Act (AGIA) spells out statutorily what the Constitution requires. It seeks to maximize the chances that ANS natural gas resources are commercialized while minimizing the fiscal concessions achieved by lessees. It does so by advancing the development stage of the project with monetary incentives, but in return for commitments that the project be developed with particular State priorities in mind.

The original AGIA structure was developed and proposed by multiple State agencies with guidance and coordination provided by the Office of the Governor; it was adopted and approved by the

Legislature in 2007. The AGIA License provides for the delivery of gas within the state to be provided at reasonably low rates at destinations along the project's route.

The Alaska Natural Gas Development Authority (ANGDA) was created by the voters of Alaska through a 2002 General Election Ballot Initiative and is a public corporation. ANGDA is focused on getting North Slope natural gas to Alaskan communities as well as identifying feasible LNG opportunities for the State. With the support of the Legislature and the Administration, ANGDA started work in 2003 within the Alaska Department of Revenue (Revenue). Alaska Statute 41.41 contains the law for the establishment and functioning of the authority.

The Alaska Stand Alone Gas Pipeline (the "bullet line") is being planned as an in-state gas pipeline designed to provide long-term, stable supplies of natural gas from the North Slope to Fairbanks and the Cook Inlet areas, as well as other communities where practicable. In the spring of 2010, the Alaska Legislature and the Governor mandated that a group of industry professionals convene under the corporate banner of the Alaska Housing Finance Corporation for the specific purpose of developing, refining, and producing an in-state natural gas pipeline project plan by July 1, 2011. The focus of the pipeline project is to supply gas to Southcentral Alaska by 2016 to offset the projected supply decline.

The design of the Alaska Stand Alone Gas Pipeline addresses current market demand with the capacity to expand for future growth. The project design accommodates initial capacity of 500 million standard cubic feet per day (MMscfd) of clean-burning natural gas. The initial flow rate will be 250 to 500 MMscfd, and the line can be expandable to 1,000 MMscfd if needed. The project plan includes opportunity and options to export liquefied natural gas (LNG) and marked natural gas liquids (NGL) to the West Coast of the United States and/or Pacific Rim markets.

The Alaska Stand Alone Gas Pipeline Project is an independent project and is not contingent on any of the other projects under consideration and currently moving forward in Alaska. The Alaska Stand Alone Gas Pipeline Project was conceived as a smaller-diameter "bullet line" that could be built on a shorter timeline to specifically address the urgent needs in Alaska, particularly in the heavily populated areas in Fairbanks and the Cook Inlet region. In the event the large-diameter gas pipeline projects do not move forward, the project plan for the Alaska Stand Alone Gas Pipeline Project positions the State of Alaska for timely response to the energy issues presently facing the Interior and Southcentral areas of Alaska. Relative to larger projects, the "bullet line" is designed to advance quickly to construction on a shorter timeline.

Energy Efficiency – AHFC and AEA

AHFC

Meeting Alaska Building Energy Efficiency Standard (BEES) is required for all new residential homes built since 1992 in the state, and for community-owned buildings receiving AHFC financing. AHFC is responsible for BEES, provides technical assistance to the businesses in the housing industry, and maintains a list of individuals who are qualified to certify compliance with BEES.

AkWarm Energy Modeling Software – AkWarm software is trademarked and has been used by AHFC since 1996. This technology is an integral part of developing and improving AHFC's energy

programs. The software is continuously updated. Scheduled upgrades include electrical ratings, estimating electrical use from appliances, equipment, and lighting. An air conditioning component and improved user interface and reporting are planned improvements.

Alaska Retrofit Information System (ARIS) – ARIS collects data from AkWarm including: commercial benchmarking information; the Home Energy Rebate Program; census records; weatherization program; grants; zip codes; legislative districts; and borough and city tax records. ARIS is a required data input/collection and retention system for all AHFC programs. The program further allows program staff and researchers access to much of building/construction data, including location, size, type, fuel sources and costs, owner, and operators, and conveniently provides all of the data in one place, with table links between datasets established. ARIS will also now track information for public and commercial facilities receiving State lending or grant funding for all AHFC Programs.

Energy Ratings – AkWarm Certified Energy Raters are individuals who measure energy efficiency in a home using AkWarm and other diagnostic tools. For new construction, the home's energy rating may be used to help verify compliance with BEES and benefit the homebuilder or owner by qualifying Five Star and Five Star Plus homes, or existing homes requiring energy improvements, for a reduced interest rate reduction (see "Energy Efficiency Interest Rate Reduction Program" or "EEIRR," below). Energy ratings are also required for the Home Energy Rebate Program and Second Mortgage Program for Energy Conservation. With the AkWarm software improvements mentioned above, AHFC is working toward the addition of a sixth star for green building. AHFC maintains a list of energy raters by community. Over 60,000 home energy ratings have been completed in Alaska, one of the highest in actual number for any state in the country, regardless of population. Approximately 36,000 of those ratings were performed since April 2008. More than 100 raters are qualified in the state of Alaska.

Energy Efficiency Interest Rate Reduction Program (EEIRR) – AHFC offers interest rate reductions to homebuyers purchasing new homes with Five Star and Five Star Plus energy ratings. These ratings exceed BEES requirements. AHFC also offers rate reductions for energy improvements to older, existing home purchases. To date, AHFC has issued more than 10,000 loans under this program with a total value of nearly \$1.8 billion.

Energy Efficiency Education and Workshops – There has been tremendous growth in the Weatherization Assistance Program, from 600 homes weatherized pre-2008 to now an average of 3,200 homes per year. Coupled with the addition of the Home Energy Rebate Program for up to 20,000 homes, energy-efficiency education has become a top priority for AHFC.

AHFC provides energy-related workshops, classes and seminars for homeowners, homebuyers, renters, builders, lenders, real estate professionals, and others. In FY2009, more than 5,000 Alaskans attended energy-efficiency classes offered through or funded by AHFC.

AHFC has embarked on training programs to bring up to 2,000 green jobs into energy-efficiency programs. Energy raters, weatherization assessors, crews, contractors, do-it-yourself homeowners, and the general public are being trained in weatherization installation techniques, building science, building auditing, energy modeling, combustion safety, moisture control and ventilation, and more. Training programs such as these are essential to achieving long-term energy efficiency goals.

With the implementation of the Alaska Energy Efficiency Revolving Loan Fund (AEERLF), new public facility energy audits and retrofits are being performed, requiring even more education for contractors, engineers, architects, and others. AHFC is developing education programs to fit these needs.

Home Energy Rebate Program – On April 5, 2008, legislation was signed authorizing the addition of \$100 million to the Home Energy Rebate Program. This program is designed to rebate homeowners some of the costs of making energy-efficiency improvements to their home, regardless of income. An AkWarm energy rating performs both before and after improvement audits to determine eligible measures and maximum rebate amounts. Depending on the rating increase and actual receipts, a rebate of up to \$10,000 is available for consumers. The program is further supplemented with other financial incentives, including the Second Mortgage Program (see below for description) for Energy Conservation. A \$7,500 rebate is available for newly constructed Five Star Plus homes. Demand for the rebate program was sufficient for the Legislature to add an additional \$60 million in September 2008. Since April 2008, AHFC has doubled the number of energy raters. Estimated average energy savings are about \$1,500 per home per year, and more than 12,000 pounds of carbon dioxide per home has been prevented from entering the atmosphere.

Second Mortgage Program for Energy Conservation – The Second Mortgage Program for Energy Conservation was initiated in April 2008. Potential borrowers may apply to AHFC for financing to make cost-effective energy improvements on owner-occupied properties. Borrowers select from the list of energy upgrades included with the energy audit of their home, performed by an AkWarm-certified rater. All improvements must be completed within 365 days of loan closing.

Small Building Material Loan – AHFC provides direct financing for the renovation or completion of residential properties located in designated small communities; however, the project may include energy-efficient upgrades and renewable-energy systems and, therefore, would be eligible for these loans.

Energy Efficiency Conservation Block Grant (EECBG) – The EECBG is a new program to Alaska, launched in 2009. It will supplement the Energy Efficiency Education Program, ARIS, and AkWarm, aid in the development of a commercial audit program, establish a Village Waste Heat Recovery Project, and a municipal block grant for energy efficient retrofits.

Research Information Center – The Research Information Center (RIC) provides information, presentations, and technical assistance for AHFC energy programs. The RIC Library has thousands of online resources, books, fact sheets, videos, reports, catalogs, etc., available to all Alaskan residents on topics such as northern building, innovative housing construction, energy efficiency, renewable energy, sustainable technology, and much more. Information requests, library visits, educational presentations and web visits total approximately 20,000 annually.

Weatherization – The Low-Income Weatherization Assistance Program allows eligible low-income Alaskans to lower the cost of heating their homes. AHFC provides funds to nonprofit organizations and municipalities. To apply for the program, Alaskans contact the program provider for their area. The Weatherization Program has been in effect in Alaska for about 30 years using funding from a variety of sources. It has a highly developed, functioning infrastructure for effective delivery and is one of the most successful programs the State has ever offered to clients, providing immediate,

tangible benefits that are documented in energy savings and reductions in threats to health and safety commonly found in the home.

The Weatherization Program has a long history of performance in building a skilled workforce, processing applications, working with other agencies to provide needed services, identifying high priority clients and families, introducing new and effective products to the market, increasing the awareness of the HVAC industry, providing critical client education, assisting low- and moderate-income families to curb unnecessary expenditures in heating and utilities, and in providing healthy, safe living environments to the highest priority clients, including those with young children, the disabled, and senior citizens.

AEA

Diesel Generation Efficiency Program provides assistance in developing projects that use high efficiency generators and recover “waste heat” from diesel generators.

Energy Efficiency and Conservation Program focuses on reducing energy use in larger facilities such as schools, community buildings, water treatment plants, and commercial buildings. Current initiatives include the federally funded Energy Efficiency and Conservation Block Grants, the Village End Use Efficiency program, a building energy monitoring, pilot projects, and a statewide public education and outreach program.

AEA has recently launched a commercial energy audit program. Owners of eligible commercial buildings throughout Alaska may be reimbursed up to \$6,500 for a qualifying energy audit. The program is funded by the American Recovery and Reinvestment Act, and is expected to provide up to 150 commercial energy audits. The Alaska Commercial Energy Audit Program will reimburse eligible applicants the cost of an energy audit up to a specified dollar limit on a per square foot basis. Eligible buildings are commercial buildings, including nonprofit owned, up to 125,000 square feet. Building tenants are not eligible, but may refer the building owner to the program.

Public Assistance – AEA, DHHS

The State of Alaska has energy assistance programs to help qualified Alaskan residents and community facility owners help defray high energy costs.

AEA Power Cost Equalization Program

AEA Power Cost Equalization (PCE) program provides economic assistance to electrical customers in rural areas of Alaska where the kilowatt-hour (kWh) charge for electricity can be three to five times higher than the charge in more urban areas of the state. PCE only pays a portion of approximately 30 percent of all kWh's sold by the participating utilities. Community facilities and residential customers are eligible for PCE reimbursements. PCE fundamentally improves Alaska's standard of living by helping small rural areas maintain the availability of communications and the operation of basic infrastructure and systems, including water and sewer, incinerators, heat, and light. AEA determines ratepayer and community facility eligibility, manages the program, and reimburses utilities for eligible PCE costs.

The Regulatory Commission of Alaska (RCA) determines utility eligibility and establishes the PCE rates that are used to calculate eligible PCE payments. PCE rates have a fuel cost and non-fuel cost component. The fluctuation in the PCE levels are primarily due to the change in a utilities fuel cost to produce electricity. Participating utilities are required to reduce each eligible customer's bill by the amount that the State pays for PCE.

Department of Health and Social Services (DHSS) – LIHEAP and AAHP

The Low-Income Home Energy Assistance Program (LIHEAP) is a federally-funded heating assistance program that helps households pay a portion of their winter heating costs. The program is limited to households with incomes at or below 150 percent of the federal poverty income guidelines. Several factors affect final eligibility and the household's benefit amount. These factors include the community the applicant resides in, how they heat their home, what type of dwelling they live in, the number of people living in the house, all residents' gross monthly income, and whether or not an elder, disabled individual, or child five years of age or younger lives in the home.

The Alaska Affordable Heating Program, a State-funded program for households with income between 151 percent and 225 percent of the federal poverty income guidelines, mirrors LIHEAP. Both programs use the same application form and eligibility criteria.

Qualified applicants receive one grant per year, payable to their fuel vendor. Applicants are notified about the status of their case through a notice of action. Applicants may designate a portion of their award be sent to their electric company. Applications are accepted from October 1 through April 30. Both programs are open to renters as well as homeowners.

Office of Management and Budget / Standardized Methodology to Collect and Store Energy Consumption and Expense Data (SB 220, Section 39)

The State of Alaska's facilities energy cost and consumption data will be collected and stored in a new web-based module in Alaska Housing Finance Corporation's Alaska Retrofit Information System (ARIS). The new module, estimated to cost \$42,000, will be paid for with ARRA energy funds and will allow State employees to access the system via the internet.

State facility users will be able to enter basic data about their buildings. It will include electrical and other space/water heating fuel costs and usage, and demand charges. Also included will be size, type of building, occupancy, schedule, facility owner, contact, and other data. The system's reporting function will summarize data by such features as building, building type, energy usage, history, department, and geographic locations, allowing for the capability to prioritize facility energy efficiency retrofit opportunities.

DOT&PF Retrofitting of State Facilities

AS 44.42.067 requires the DOT&PF to retrofit at least 25 percent of all State of Alaska public facilities over 10,000 square feet no later than January 1, 2020. The milestones to accomplishing this include:

- Implementing a standardized method to collect energy consumption and cost data for facilities and generating Energy Use Indexes (AS 37.07.040 (12)).
- Identifying and prioritizing the least energy efficient facilities.
- Determining project scopes for energy retrofit work in those facilities that will meet net cost savings within 15 years.
- Working with the state agencies to arrange funding for the determined energy retrofit projects.
- Contracting with Energy Services Companies to perform energy performance contracts.
- Executing the energy retrofit projects and verifying the energy savings.
- Continuous monitoring of state energy consumption to be compared to levels of past years.

The DOT&PF is currently gathering utility bills from the past two years for all state-owned buildings that are over 10,000 SF. Several agencies have provided the information and the DOT&PF is generating Energy Use Indexes in order to prioritize the buildings from least to most energy efficient. This will be an ongoing process and will utilize the information gathered from the implementation of the standardized methodology for state agencies to collect and store energy consumption and expense data.

DOT&PF and the Alaska Energy Authority have collaborated on this approach to prioritizing facilities. Additionally, because completing the work as cost effectively as possible is essential, when commencing energy efficiency retrofit projects, the DOT&PF intends to group projects by geographic locations to the extent possible. This will assist in expediting project completions, reducing project costs, and maximizing project resources. However, it may mean one group of facilities includes multiple departments and multiple funding sources and that energy retrofits to facilities are not completed in exact order of their baseline EUIs

Concurrently, the DOT&PF has issued an RFP for Energy Performance Contracting and is negotiating with three Energy Service Companies (ESCOs). The three contracts are anticipated to be awarded February 2011.

Initial funding for energy efficiency retrofit projects will come from grant funding through the American Recovery and Reinvestment Act (ARRA). A total \$10M has been allocated to this effort for state buildings. Once those funds are committed, funding of the energy retrofit projects will be through the Alaska Energy Efficiency Revolving Loan Fund Program administered by the Alaska Housing Finance Corporation and other potential sources.

Prior to 2010, the DOT&PF had previously completed energy retrofit projects under two phases of energy performance contracting across multiple facilities. The first phase of energy performance contracting, completed in 2006, resulted in energy cost avoidance of \$365,991 in its first year. The second phase, completed in 2009, resulted in \$793,395 of cost avoidance in its first year.

In addition, agencies have long been completing energy efficiency retrofit projects through conventional contracting means in their facilities utilizing deferred maintenance funding.

RCVD 2/2/11
1:45 PM
MAG

Thank you for the opportunity to comment on the status of the Alaska Sustainable Energy Act, SB220. My name is Marilyn Leland and I am the Executive Director of the Alaska Power Association. APA is the statewide trade association that represents the electric utilities that supply power to about a half million Alaskans from Barrow to Unalaska, through the Interior and Southcentral and down the Inside Passage.

SB220 was a bill that APA actively supported last session. Having said that, though, there are a number of provisions in the bill that do not directly relate to the electric utilities, so I will be limiting my testimony to those portions that do. Also, in a number of cases, there are provisions that we supported, but I am not aware of the status of implementation and I am unable to comment on their status. Agencies, local governments and school representatives would be better able to address these provisions.

Looking at Section 1, we were pleased to see language that helps to remove barriers to the development of nuclear energy as an alternative technology in Alaska. This an important technology that needs to be considered for use here and I expect this language will help, however, I am not aware of any nuclear projects underway as a result of the new provisions.

Section 14 deals with the Emerging Energy Technology Fund. We believe that the inclusion of this section was very important. There is no silver bullet that is going to help everyone in Alaska solve their energy problems and I commend the legislature for creating this fund and including an advisory committee populated by experts in the science and engineering fields. The Alaska Power Association has a designated seat on that committee, which has been filled by Eric Eriksen, who is an engineer with Alaska Electric Light & Power in Juneau. The committee has had its initial organizing meeting at which the draft Request for Grant Applications was reviewed. That RFA was issued on January 7 with applications due March 2. Once the applications are received, I understand the advisory committee will meet again to review them and make recommendations on grant awards.

I want to mention one concern I have about the advisory committee. The bill does not allow a business or organization represented by a member of the advisory committee to receive a grant. While I understand the reasoning behind this provision, I think you should consider removing it. Alaska has a small pool of organizations and individuals who are qualified to serve on the committee and who have the technical ability to develop emerging technologies. Rather than simply prohibiting them from receiving the grants, I think it might be better to allow them

to apply for grants, but prohibit them from being involved in any way in the deliberations or voting on the recommendations for grant awards. We would only be hurting ourselves by not taking advantage of someone's expertise on the committee just because they may want to apply for a grant at some time.

Section 42 adds a provision allowing the Alaska Housing Finance Corporation to issue bonds in an amount not to exceed \$250 million to make loans from the Alaska energy efficiency revolving loan fund. We believe this is an excellent provision, although I am not aware of the status of the expanded bonding capacity. AHFC would know.

You also asked where we think the legislature needs to focus now. At APA, we have developed a list of initiatives that we think the legislature should consider. They don't all relate to SB220, but I will summarize them for you:

- Develop an implementation plan for Alaska's energy policy authorized by HB306 last session. As I mentioned earlier, a lot of good work went into developing the policy. Now the state needs to actually do the work to make the policy succeed.
- Develop large-scale hydroelectricity for the Railbelt and develop renewable energy resources, hydro, geothermal and wind, for other regions of the state. A large hydroelectric project could meet the needs of as much as 75% of Alaska's population well into the future, but we need to not forget the communities that are not on the Railbelt. The state should be looking at developing viable renewable energy generation for those communities as well.
- Encourage the development of a Cook Inlet Gas Management Plan for continued gas delivery to Southcentral. Natural gas is critical to Southcentral and the economy statewide. Demand for natural gas in Southcentral is expected to exceed supply as early as 2013. The legislature and the Governor need to take a comprehensive view of the situation, develop policies and ensure coordinated actions.
- Fund the Renewable Energy Fund and the Power Project Loan Fund. The funds are the primary state sources of capital funding for renewable energy projects. Both funds have been woefully undercapitalized in recent years in light of the goals set forth in the state energy policy. Fund a minimum of \$50 million annually for the Renewable Energy Fund as authorized and

properly capitalize the Power Project Loan fund at a level to support the goals set forth in Alaska's energy policy.

- Continue to fund the Power Cost Equalization Program. The very survival of many rural Alaska communities depends upon meaningful relief from the crippling cost of energy. The legislature should continue the PCE benefit at 100% for FY11 and fully fund PCE in the Administration's FY12 operating budget.
- Develop policy and legislation that expands funding for energy efficiency and conservation activities. Continue to support the highly successful programs of the Alaska Energy Authority and the Alaska Housing Finance Corporation for home energy audits, energy improvement rebates and weatherization. In addition, we encourage you to provide commercial energy audits for governments, schools and public institutions and offer energy efficiency and conservation block grants. A bill has already been introduced this session to expand the AHFC's energy efficiency program for commercial buildings. That bill is HB 36.

We have a number of successful projects and initiatives in Alaska. Just to name a few, there are Kotzebue Electric's wind farm; Kodiak Electric's Pillar Mountain Wind Farm and Terror Lake hydro project; Alaska Village Electric's wind generators in a dozen of their villages; Cordova Electric's hydro projects; Alaska Electric Light and Power's Snettisham and Lake Dorothy hydro projects; Alaska Energy Authority's Bradley Lake hydro and the newly-created Alaska Railbelt Cooperative Transmission and Energy Company that is poised to do great things in Southcentral. With the history of these successful projects, I am confident that we can do it again ... it's just going to take a lot of hard work, coordination between the state, the electric utilities and other interested parties and, of course, a lot of money. But we can do it!

In closing, I want to compliment you on all of the hard work that went into the development of SB220. It was an excellent beginning to what needs to be done to solve Alaska's energy problems, but we're not done yet.

Alaska Sustainable Energy Act

SB 220 (26th Alaska State Legislature)

Standardized Methodologies, Reports Due to the Legislature, and the Implementation of Processes

Not later than January 31, 2011, the Office of Management and Budget shall develop a standardized methodology to collect and store energy consumption and expense data.

Not later than January 31, 2011, the Governor shall submit a report to the legislature providing recommendations for how best to structure state energy programs and offices to increase the coordination and efficiency of the state's efforts and describing state energy services and programs in their entirety. The report must also include an examination of existing powers and duties and the structure of the Alaska Energy Authority and its board of directors, specifically analyzing the relationship between the Alaska Energy Authority and the Alaska Industrial Development and Export Authority.

Not later than January 31, 2011, the Department of Transportation and Public Facilities shall prepare a report containing the results of the study of the feasibility of using compressed natural gas to power vehicles in the state.

Not later than January 31, 2011, the Department of Revenue shall submit to the legislature a report and recommendations regarding the feasibility of a municipal energy improvements financing program.

Not later than one year after the effective date of this section, the Department of Transportation and Public Facilities, in consultation with the Alaska Energy Authority, shall adopt and implement a systematic process for prioritizing the retrofitting of state facilities for a long-term increase in energy efficiency and reduction of energy costs.

SB 220 ALASKA SUSTAINABLE ENERGY ACT



**DEPARTMENT OF TRANSPORTATION & PUBLIC
FACILITIES**

AND



DEPARTMENT OF ADMINISTRATION

2010 PROGRESS REPORT
Submitted January 2011

EXECUTIVE SUMMARY

In accordance with AS 44.42.067(d), this is the FY11 Progress Report detailing the progress of the State of Alaska Department of Transportation and Public Facilities (DOT&PF) in reducing the state's energy consumption.

AS 44.42.067 requires the DOT&PF to retrofit at least 25 percent of all State of Alaska public facilities over 10,000 square feet no later than January 1, 2020. The milestones to accomplishing this include:

- Implementing a standardized method to collect energy consumption and cost data for facilities and generating Energy Use Indexes (AS 37.07.040 (12)).
- Identifying and prioritizing the least energy efficient facilities.
- Determining project scopes for energy retrofit work in those facilities that will meet net cost savings within 15 years.
- Working with the state agencies to arrange funding for the determined energy retrofit projects.
- Contracting with Energy Services Companies to perform energy performance contracts.
- Executing the energy retrofit projects and verifying the energy savings.
- Continuous monitoring of state energy consumption to be compared to levels of past years.

The DOT&PF is currently gathering utility bills from the past two years for all state-owned buildings that are over 10,000 SF. Several agencies have provided the information and the DOT&PF is generating Energy Use Indexes in order to prioritize the buildings from least to most energy efficient. Concurrently, the DOT&PF has received responses to the Request for Proposals for contracting with up to three Energy Service Companies (ESCOs).

Initial funding for energy efficiency retrofit projects will come from grant funding through the American Recovery and Reinvestment Act (ARRA). Once those funds are committed, funding of the energy retrofit projects will be through the Alaska Energy Efficiency Revolving Loan Fund Program administered by the Alaska Housing Finance Corporation and other potential sources.

Prior to 2010, the DOT&PF had previously completed energy retrofit projects under two phases of energy performance contracting across multiple facilities. The first phase of energy performance contracting, completed in 2006, resulted in energy cost avoidance of \$365,991 in its first year. The second phase, completed in 2009, resulted in \$793,395 of cost avoidance in its first year.

Facility energy efficiency retrofit projects have also been completed through conventional contracting means in multiple state facilities and are detailed in this report.

The DOT&PF is also coordinating with the Alaska Housing Finance Corporation (AHFC), the Alaska Energy Authority (AEA), and the Office of Management and Budget (OMB) to determine the method to collect energy data and catalog it for use by all state agencies.

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Appendix A

FY2009 Energy Use Data
 FY2010 Energy Use Data

1.0 INTRODUCTION

Senate Bill 220, known as the 'Alaska Sustainable Energy Act,' was enacted into law in July 2010. The State of Alaska Department of Transportation and Public Facilities (DOT&PF), in consultation with the Department of Administration, present this FY11 progress report to the legislature. Progress in this report includes work completed in 2010 and prior.

The DOT&PF is in the process of collecting utility bill and energy information from all executive branch agencies. One-hundred and seventy-six (176) state-owned facilities are 10,000 square feet or more and fall into the facility definition of SB220¹. To date, the DOT&PF has received utility information for over 70 facilities from different agencies including the Department of Administration, Department of Transportation and Public Facilities, Department of Education-Mt. Edgecumbe High School and Department of Labor-AVTEC. Other agencies are currently in the process of collecting utility data for their facilities and the DOT&PF is expecting to receive more information before the end of 2010.

Utility information provided by the other state agencies is being used to generate an Energy Use Indexes (EUI) for each building. The EUI, a comparable measure of energy used per square foot of building space, will assist the DOT&PF in prioritizing the facilities. The DOT&PF is working with the Alaska Energy Authority to develop the process for prioritizing the facilities with an eye towards the long-term increase in energy efficiency and reduction of energy costs. This process will be finalized and documented in the upcoming months.

The DOT&PF has long been aware that remodeling facilities to increase energy efficiency was an effective method to reduce energy costs. To date, the DOT&PF has already had two phases of energy savings performance contracting (ESPC), has completed remodels on existing facilities with the specific goal of saving on energy costs at those facilities, and always keeps energy efficiency at the fore-front of the design when working on every renovation and new facility project. The DOT&PF has received proposals for a new term agreement with Energy Service Companies for a third phase of energy savings performance contracting to assist in achieving the goals of SB220.

Subsequent sections of this report will provide details about current and past energy consumption and the associated costs of state facilities, Benchmarks/EUIs that have been calculated, the RFP for an Energy Services company that has been advertised, current and past construction projects focusing on energy efficiency, and the DOT&PF's relationship with other agencies.

¹ As determined from State of Alaska Risk Management 2008 Assets Property list.

2.0 ENERGY CONSUMPTION AND COSTS

As of December 2010, the DOT&PF does not have full utility data for all state-owned facilities. Tabular and graphical energy consumption and costs presented in this section include only the facilities the DOT&PF has been able to compile data for thus far. The state facilities comprising the information shown in this section are included in Appendix A.

2.1 METHODOLOGIES OF UTILITY DATA COLLECTION

Current methods of storing and tracking utility data are varied across agencies and as of this date there is no standard or central point of collection. Methodologies range from utility information being centrally maintained at the agency level, being maintained at the department regional level, or being maintained at individual facilities.

The Office of Management and Budget (OMB) is currently coordinating with the Alaska Housing Finance Corporation, the Alaska Energy Authority and the DOT&PF in the development of standard methodology to collect future energy consumption and expense data for state facilities. In the interim, before it is developed and implemented, the DOT&PF is obtaining utility information directly from individual departments to compile the data.

2.2 CURRENT CONSUMPTION AND COST

Table 1 below is a summary of the energy consumption and costs for FY 2010 of state-owned facilities 10,000 square feet or greater in size². Energy units for electricity (kilowatt hours-kWh) and heating energy (therms) have been converted to the common energy unit of MMBtus (millions of Btus) to represent the profile of energy use for state facilities.

FY 2010	Consumption		Cost
Electrical Energy	24,311,633 kWh	82,976 MMBtus	\$2,633,196
Heating Energy	1,026,944 Therms	102,694 MMBtus	\$1,531,661
Total		185,670 MMBtus	\$4,164,857

Table 1: FY 2010 Energy Consumption & Cost

Figures 1 and 2 graphically depict the energy usage profile between electrical and heating energy and electrical and heating costs respectively.

² Of available compiled data from State Facilities 10,000 square feet and over.

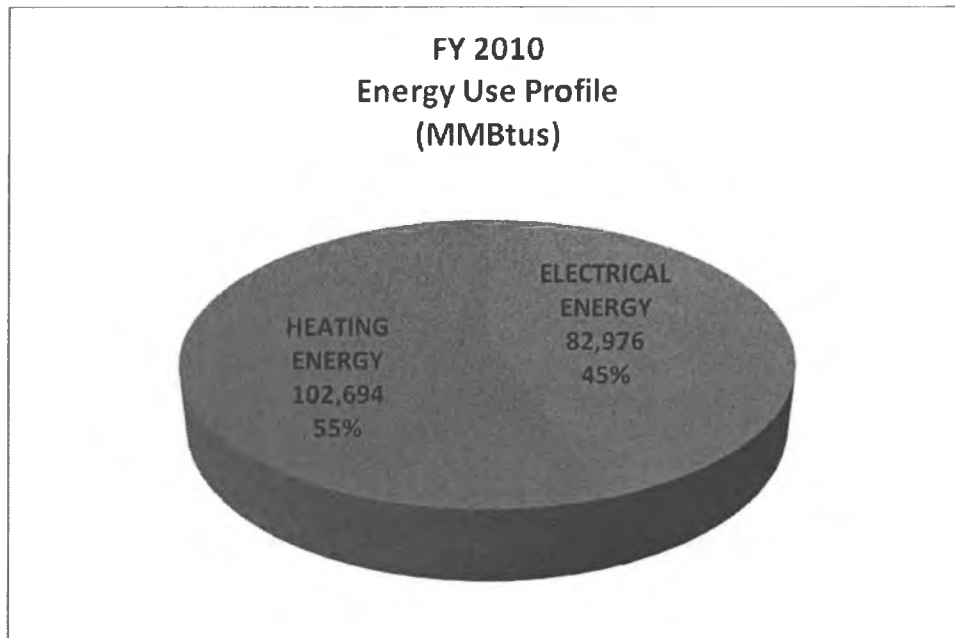


Figure 1: FY 2010 Energy Use Profile

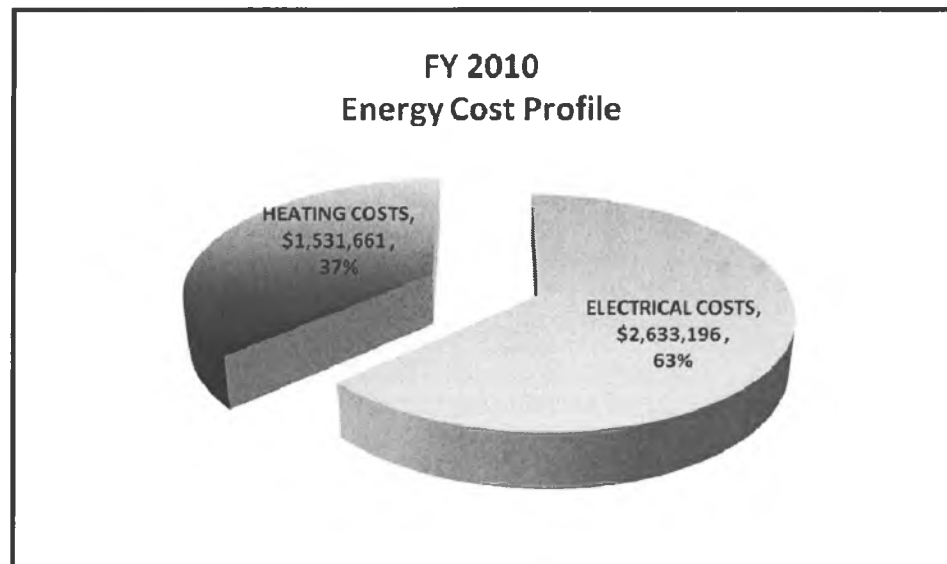


Figure 2: FY 2010 Energy Cost Profile

2.3 PAST ENERGY CONSUMPTION AND COST

The following tables and graphs include comparative summaries of the energy consumption and costs for FY 2009 and 2010.

	Energy Consumption (MMBtus)		Cost \$	
	FY 2009	FY 2010	FY 2009	FY 2010
Electrical Energy	87,039	82,976	\$2,922,377	\$2,633,196
Heating Energy	129,621	102,694	\$1,798,736	\$1,531,661
Total	216,660	185,670	\$4,721,113	\$4,164,857

Table 2: FY2009 & FY2010 Energy Consumption and Cost

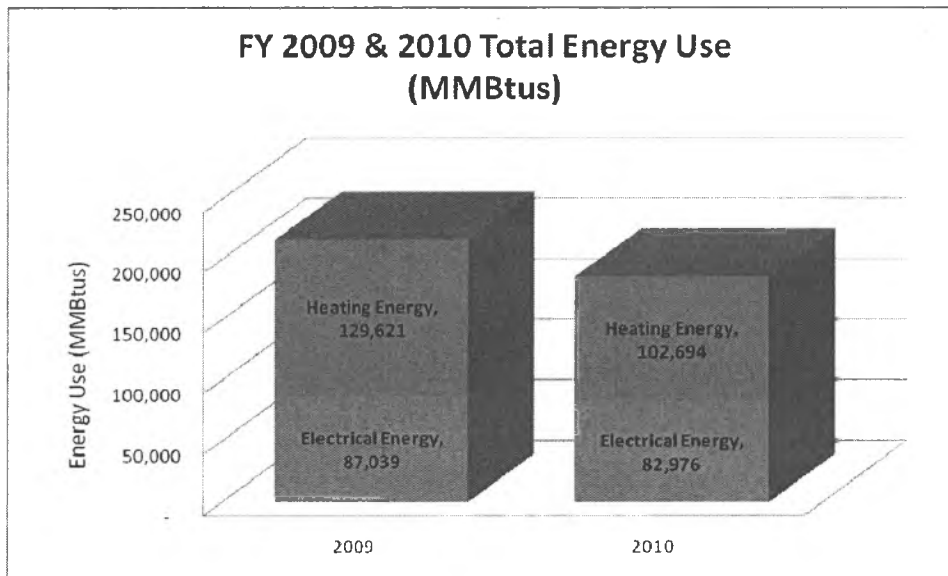


Figure 3: FY2009 & FY2010 Total Energy Consumption (in Million Btus -MMBtus)

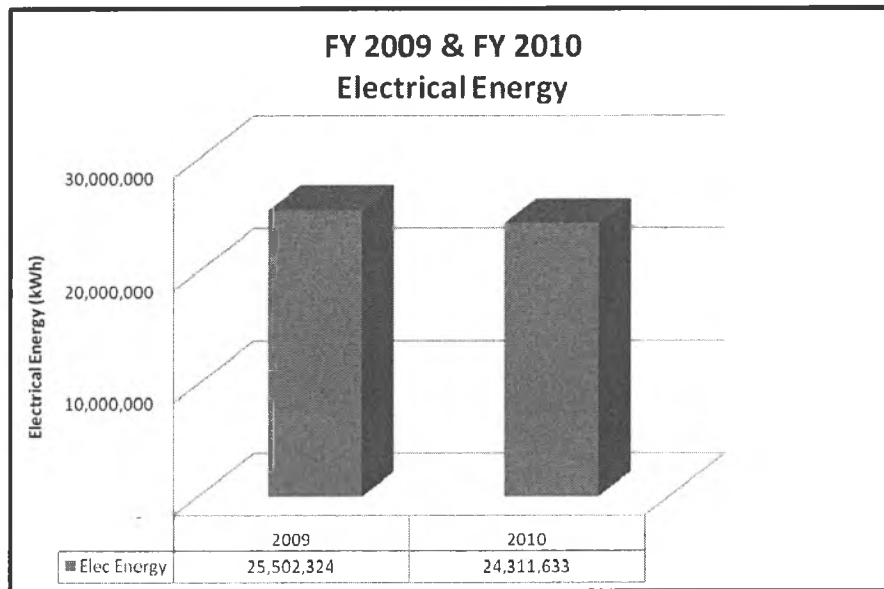


Figure 4: FY2009 & FY2010 Electrical Energy Consumption

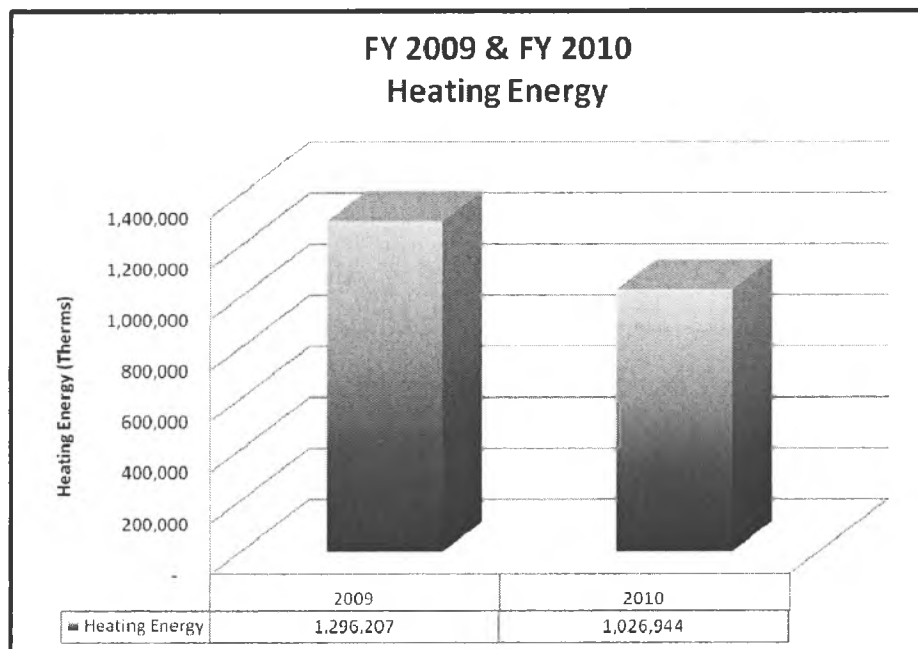


Figure 5: FY2009 & FY2010 Heating Energy Consumption

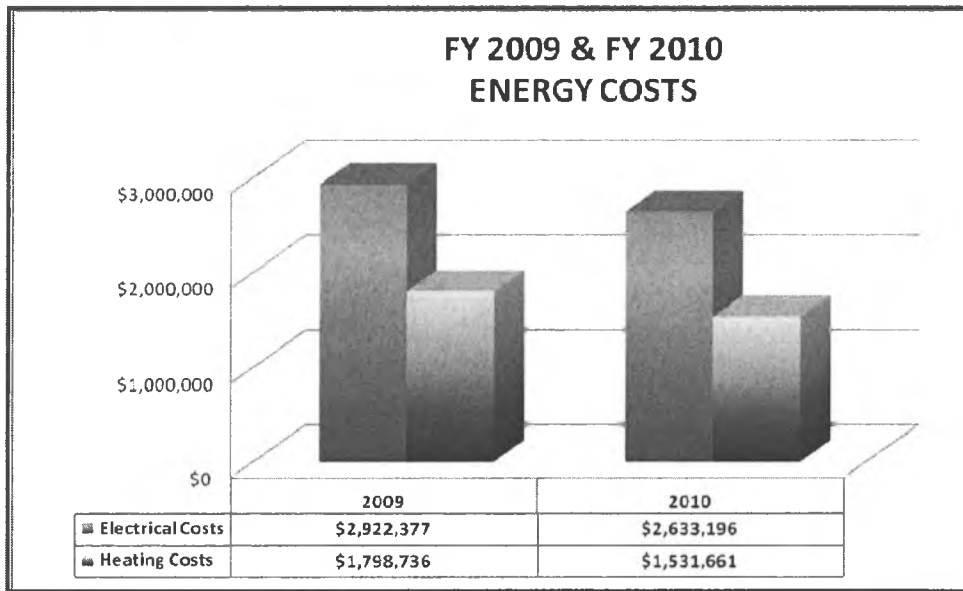


Figure 6: FY2009 & FY2010 Electrical and Heating Costs

3.0 ENERGY USE INDEXES

To determine current energy use of state facilities (over 10,000 square feet), the DOT&PF has begun collecting utility bills and other data from state agencies for their public facilities as defined in AS 44.42.067. The utility data is being used to generate Energy Use Indexes (EUIs), which will assist in determining comparative energy use and energy efficiency of the facilities.

The EUI is a calculated number representing the annual total of all energy used per square foot of building area, represented as thousand BTUs per square foot (kBTUs /sq.ft.). The total energy consumption for the building comprises the electrical power, natural gas, heating fuel oil, and, in some specific sites, propane used to operate the building.

The energy consumed is converted into BTUs and divided by the square footage of the building. The EUI can then be used to compare and rank all facilities. The larger the EUI, the more energy consumed per square foot. Different types of facilities will have different EUIs based on their operational function, equipment, space usage and occupancies. For example, a health care or laboratory facility, an office facility, and a parking facility will all have very different EUIs, ranging from highest to lowest respectively.

Table 3 shows typical units for measuring the energy consumption.

Energy Source	Category	Measured In Units of	
Electrical Consumption	Electricity	Kilowatt-hours	kWh
Electrical Demand	Electricity	Kilowatt	kW
Natural Gas	Heating	Thousand Cubic Feet	ccf
Heating Fuel Oil	Heating	Gallons	gal
Propane	Heating	Gallons	gal

Table 3: Typical Energy Units

The following Table 4 is a summary of the FY 2010 EUIs the DOT&PF has calculated to date. EUI data may be subject to change as missing utility information is gathered and compiled, data is verified and calculations are updated.

Table 4: FY 2010 Energy Use Indexes of Available Facilities

DEPT	BUILDING NAME	LOCATION	ENERGY USE INTENSITY (KBTUs / Sq.Ft.)
DOA	Atwood Bldg	Anchorage	91.7
DOA	Linny Pacillo Parking Garage (Atwood Bldg)	Anchorage	32.4
DOA	Palmer State Office Bldg	Palmer	116.9
DOA	Fairbanks Regional Office Bldg	Fairbanks	63.8
DOA	State Office Bldg	Juneau	148.9
DOA	Community Bldg	Juneau	62.3
DOA	Public Safety Bldg	Juneau	157.4
DOA	Dimond Courthouse Bldg	Juneau	217.5
DOA	Douglas Island Bldg	Douglas	89.0
DOA	Museum	Juneau	166.3
DOTPF-NR	Cantwell Garage	Cantwell	173.9
DOTPF-NR	Large Vehicle Warm Storage	Fairbanks	43.4
DOTPF-NR	Warm Storage	Nome	93.9
DOTPF-NR	Combined Facility	Tok	60.3
DOTPF-NR	Maintenance Facility	Tok	188.3
DOTPF-CR	Annex Bldg	Anchorage	56.3
DOTPF-CR	Anchorage Hwy Maintenance Shop	Anchorage	191.3
DOTPF-CR	Anchorage Maintenance Shop / SEF	Anchorage	46.2
DOTPF-CR	Communication Bldg	Anchorage	208.2
DOTPF-CR	Boney Courthouse	Anchorage	77.8
DOTPF-CR	Boney Parking Garage	Anchorage	9.0
DOTPF-CR	Palmer Maintenance /SEF	Palmer	273.8
DOTPF-CR	Soldotna Maintenance/SEF	Soldotna	139.7
DOTPF-CR	Soldotna Sand Storage	Soldotna	67.6
DOTPF-CR	Kenai Combined Facility	Kenai	136.8
DOTPF-CR	Kodiak Regional Office	Kodiak	121.3
DOTPF-CR	Kodiak Combined Facility (State Court/Office)	Kodiak	85.4
DOTPF-CR	Adak Maintenance / SEF	Adak	124.9
DOTPF-CR	Hooper Bay Maint Shop	Hooper Bay	9.5
DOL	AVTEC First Lake Facility Admin Bldg	Seward	115.1
DOL	AVTEC Student Service Center (5 Bldgs)	Seward	111.1
DOL	AVTEC Auto / Hvy Equipment Shop	Seward	68.0

3.1 PROJECT PRIORITIZATION

The DOT&PF is working with Alaska Energy Authority in determining prioritization of the facilities. The current method is to establish baseline EUIs using the most recent years of utility data, and to sort the facilities beginning by the least energy efficient.

Priority will be given to facilities that are least energy efficient, though individual facility and department needs as well as the geographic locations of the facilities must also be considered.

Because completing the work as cost effectively as possible is essential, when commencing energy efficiency retrofit projects, the DOT&PF intends to group projects by geographic locations to the extent possible. This will assist in expediting project completions, reducing project costs, and maximizing project resources. However, it may mean one group of facilities includes multiple departments and multiple funding sources and that energy retrofits to facilities are not completed in exact order of their baseline EUIs.

4.0 PROGRESS

4.1 ENERGY SERVICES COMPANY RFP

A Request for Proposal (RFP) for a term agreement with up to three Energy Service Companies (ESCOs) was advertised in October 2010 and proposals are currently in review for selection. Selection of the qualified ESCOs is anticipated by early January 2011.

The ESCOs will perform investment grade energy audits, energy improvement projects and energy savings verification to state-owned facilities. Contracting with multiple ESCOs in the term agreement allows for competition for the energy retrofit projects and enables enough ESCOs to complete the foreseeable work load.

The ESCOs shall perform work in three phases:

- Phase I requires the completion of an investment grade audit and energy services proposal that identifies cost-effective recommended projects for the identified state facilities.
- Phase II requires the ESCOs to perform all management, engineering, design, construction, commissioning, and training necessary for the retrofit as identified in their energy services proposal.
- Phase III requires the ESCOs to measure and verify the guaranteed energy and water savings.

4.2 COMPLETED ENERGY EFFICIENCY PROJECTS (FY06 – FY11)

Energy retrofit projects completed by the DOT&PF include two energy performance contracts performed across multiple facilities as well as energy efficiency retrofit projects at individual facilities.

The DOT&PF has completed construction of two phases of energy performance contracts at state facilities. The facilities and the reported annual monetary energy savings are shown in the tables below.

4.2.1 ENERGY PERFORMANCE CONTRACT PROJECTS

<u>Facility</u>	<u>Agency</u>	<u>Location</u>	<u>Project Scopes and Status:</u>
Dimond Courthouse	DOA	Juneau	<p>Energy performance contract services with guaranteed energy savings were performed by Siemens.</p> <p>Construction was completed in 2006.</p> <p>Currently, Siemens is monitoring the energy improvements implemented during the construction work. They are nearing the end of their 3-year term of monitoring and guaranteed energy savings.</p>
Alaska Office Bldg	DOA	Juneau	
Court Plaza	DOA	Juneau	
Douglas Island Bldg	DOA	Juneau	
State Office Bldg	DOA	Juneau	
Aviation Bldg	DOTPF	Anchorage	
DOTPF Annex	DOTPF	Anchorage	
Public Safety Bldg	DPS	Anchorage	
Reported Annual Energy Savings		2,881,786 kWh 13,324 Therms 94,324 Gal Fuel Oil	
Reported Annual Avoided Cost		\$366,991	

Table 5: Energy Performance Contract – Phase I

<u>Facility</u>	<u>Agency</u>	<u>Location</u>	<u>Project Scopes and Status:</u>
Anchorage Correctional Center	DOC	Anchorage	<p>Energy performance contract services with guaranteed energy savings were performed by Siemens.</p> <p>Construction was completed in 2010.</p> <p>Currently, Siemens is monitoring the facility improvement measures that were put in place during the construction work. This is the first year of performance evaluations and the energy savings this year were greater than what was guaranteed.</p>
Hiland Mt. / Meadow Creek Correctional Center	DOC	Eagle River	
Spring Creek Correctional Center	DOC	Seward	
Wildwood Correctional Center	DOC	Kenai	
Fairbanks Correctional Center	DOC	Fairbanks	
Lemon Creek Correctional Center	DOC	Juneau	
Anvil Mt. Correctional Center	DOC	Nome	
Yukon Kuskokwim Correctional Center	DOC	Bethel	
Reported Annual Energy Savings		3,648,000 kWh 52,480 Therms 2,509 Gal Fuel Oil	
Reported Annual Avoided Cost		\$793,295	

Table 6: Energy Performance Contract – Phase II

4.2.2 INDIVIDUAL FACILITY ENERGY RETROFIT PROJECTS

The DOT&PF has also recently completed individual energy retrofit projects at the facilities shown in Table 7 below:

<u>Facility</u>	<u>Agency</u>	<u>Location</u>	<u>Project Scopes and Status:</u>
Anchorage Pioneer Home	DHSS	Anchorage	Energy efficiency lighting upgrade completed in 2010, including replacement of existing fluorescent lighting with energy efficient fluorescent lighting throughout the facility.
Mt. Edgecumbe H.S. Boys Dorm	DEED	Sitka	Energy efficiency lighting upgrade completed in 2010, including replacement of existing fluorescent lighting with energy efficient fluorescent and LED lighting throughout the facility.
Galena Snow Removal Equipment Bldg	DOT-NR	Galena	Energy efficiency upgrade completed in 2010, including upgrades of all lighting, heating, ventilation and building control systems throughout the facility.
Nome ARFF SREB	DOT-NR	Nome	Energy efficiency upgrades completed in 2009 including installation of lighting occupancy sensors and heating and ventilation upgrades.
Boney Courthouse	DOT-CR	Anchorage	Energy efficiency heating upgrade completed in 2008, including replacement of existing heating system with high-efficiency boilers.
ANC North Terminal	DOT-AIA	Anchorage	Energy efficiency lighting upgrade completed in 2008, including replacement of existing fluorescent lighting with energy efficient fluorescent lighting throughout the facility.

Table 7: Energy Retrofit Projects

5.0 RELATIONSHIPS WITH OTHER AGENCIES

The DOT&PF is coordinating with all state departments to collect data and utility information for state facilities over 10,000 square feet and to coordinate the energy retrofit projects at those facilities. The DOT&PF is also working closely with both the Alaska Housing Finance Corporation (AHFC) and Alaska Energy Authority (AEA); both close partners in the efforts to achieve the goals of SB220.

AHFC was the recipient of a \$40 million grant from the American Recovery and Reinvestment Act of 2009 (ARRA), of which \$10 million was allocated to energy efficiency upgrades in executive branch departments. AHFC has entered into a reimbursable services agreement with the DOT&PF for this amount. DOT&PF, with OMB's approval, has sub-allocated the ARRA funding based upon the square footage of building managed by a department.

Along with the ARRA funding, AHFC has created and will administer the Alaska Energy Efficiency Revolving Loan (AEERL) Fund Program. State agencies will be able to use the loan program to fund the energy efficiency retrofits. The loans are expected to be repaid by the savings the facility sees due to the improvements to the energy efficiency.

The DOT&PF is also working with the AEA to develop the method for prioritization of facilities for energy retrofits and to collect data for use in producing the Investment Grade Audits. SB 220 Section 46 requires the DOT&PF and AEA to work together to develop the method for prioritization of facilities.

AHFC, AEA and the DOT&PF are working together to gather data related to the energy efficiency of facilities throughout the state. AEA is primarily focused on private commercial and residential facilities, but will also be using the data the DOT&PF collects on state-owned facilities.

Both AEA's and AHFC's goal is to collect energy consumption data for facilities and residences throughout the state to determine total energy usage. The DOT&PF will assist in that effort by supplying the consumption data we collect for state-owned facilities.

APPENDIX A

FY 2009 Energy Use Data


FY 2010 Energy Use Data

Appendix A

DEPT	BUILDING NAME	LOCATION	BLDG TYPE	BLDG SQ. FT.	FY 2009 ANNUAL ENERGY DATA								TOTAL BLDG ENERGY (MMBTUS)	2009 ENERGY USE INTENSITY (KBTUs / Sq.Ft.)	NOTES / COMMENTS
					2009 ANNUAL ELEC ENERGY (kWh)	2009 ELEC ENERGY (MMBTUS)	2009 ELECTRICAL COSTS	2009 HEATING ENERGY (THERMS)	2009 HEATING ENERGY (MMBTUS)	2009 HEATING COSTS	2009 ENERGY COST				
DOA	Atwood Bldg	Anchorage	Office	338,000	6,139,136	20,953	\$ 572,405	196,192	19,619	\$ 207,701	\$ 780,106	40,572	120.0		
DOA	Liney Facility Prking Garage (Atwood Bldg)	Anchorage	Parking Garage	220,000	875,840	2,889	\$ 70,718	34,339	3,434	\$ 66,674	\$ 137,392	6,423	29.2		
DOA	Palmer State Office Bldg	Palmer	Office	79,193	1,320,120	4,506	\$ 154,447	131,089	13,109	\$ 159,370	\$ 313,857	17,614	222.4		
DOA	Fairbanks Regional Office Bldg	Fairbanks	Office	92,942	942,400	3,216	\$ 145,232	29,806	2,981	\$ 21,887	\$ 167,119	6,197	66.7		
*DOA	State Office Bldg	Juneau	Office	287,850	7,721,300	26,353	\$ 845,475	206,110	20,611	\$ 305,112	\$ 1,150,587	46,964	163.2		
DOA	Community Bldg	Juneau	Office	22,400	170,320	581	\$ 18,988	12,468	1,247	\$ 18,325	\$ 37,313	1,828	81.6		
DOA	Public Safety Bldg	Juneau	Office	19,200	348,510	1,189	\$ 34,439	18,739	1,874	\$ 27,511	\$ 61,950	3,063	159.5		
DOA	Dimond Courthouse Bldg	Juneau	Office	77,000	1,175,280	4,011	\$ 128,988	148,237	14,824	\$ 238,268	\$ 367,256	18,835	244.6		
DOA	Douglas Island Bldg	Douglas	Office	41,980	468,920	1,600	\$ 49,100	25,061	2,506	\$ 37,865	\$ 86,965	4,106	97.8		
DOA	Museum	Juneau		29,420	419,920	1,433	\$ 40,406	33,230	3,323	\$ 52,287	\$ 92,693	4,756	161.7		
DOTFF-NR	Cantwell Garage	Cantwell	Service/Shop	9,180	126,720	432	\$ 18,607	15,250	1,525	\$ 25,917	\$ 44,524	1,957	213.2		
DOTFF-NR	Large Vehicle Warm Storage	Fairbanks	Service/Shop	18,000	-	-	-	15,065	1,507	\$ 21,354	\$ 21,354	1,507	83.7		
DOTFF-NR	Warm Storage	Nome	Service/Shop	12,140	52,180	178	\$ 18,239	10,596	1,060	\$ 45,512	\$ 63,751	1,238	102.0		
DOTFF-NR	Combined Facility	Tok		10,534	90,800	310	\$ 33,490	9,500	950	\$ 15,674	\$ 48,164	1,260	115.2	Missing Sept. 2009 electrical data	
DOTFF-NR	Maintenance Facility	Tok	Service/Shop	9,600	176,240	602	\$ 64,583	20,078	2,008	\$ 34,225	\$ 98,808	2,609	271.8	Missing Sept. 2009 electrical data	
DOTFF-CR	Annex Bldg	Anchorage	Office	24,240	188,920	645	\$ 18,701	8,438	844	\$ 8,317	\$ 27,018	1,489	61.4		
*DOTFF-CR	Anchorage Hwy Maintenance Shop	Anchorage	Service / Shop	24,000	275,587	941	\$ 38,619	40,711	4,071	\$ 38,967	\$ 77,586	5,012	208.8		
*DOTFF-CR	Anchorage Maintenance Shop / SEF	Anchorage	Service / Shop	21,350	301,640	1,029	\$ 40,825	-	-	\$ 40,825	-	1,029	48.2	Natural Gas shared between facilities	
*DOTFF-CR	Communication Bldg	Anchorage		12,432	423,040	1,444	\$ 53,562	11,903	1,190	\$ 11,652	\$ 65,214	2,634	211.9		
DOTFF-CR	Boney Courthouse	Anchorage	Office	169,293	1,768,000	6,034	\$ 158,208	85,626	8,563	\$ 81,496	\$ 239,704	14,597	86.2		
DOTFF-CR	Boney Parking Garage	Anchorage	Parking Garage	68,400	179,250	612	\$ 15,193	-	-	\$ 15,193	-	612	8.9		
DOTFF-CR	Palmer Maintenance /SEF	Palmer	Service / Shop	12,600	197,241	673	\$ 25,973	28,608	2,861	\$ 27,539	\$ 53,512	3,534	280.5		
DOTFF-CR	Soldotna Maintenance/SEF	Soldotna	Service / Shop	24,885	274,360	936	\$ 47,978	22,002	2,200	\$ 21,460	\$ 69,438	3,137	126.0		
DOTFF-CR	Soldotna Sand Storage	Soldotna	Storage	18,175	21,800	74	\$ 6,017	10,826	1,083	\$ 9,881	\$ 15,898	1,157	63.7		
DOTFF-CR	Kenai Combined Facility	Kenai	Office	26,232	256,140	874	\$ 45,188	44,413	4,441	\$ 42,767	\$ 87,955	5,316	202.6		
DOTFF-CR	Kodiak Regional Office	Kodiak	Office	10,440	129,360	442	\$ 19,949	8,807	881	\$ 22,885	\$ 42,834	1,322	126.6		
DOTFF-CR	Kodiak Combined Facility (State Court/Office)	Kodiak	Office	13,400	96,720	330	\$ 15,004	8,615	862	\$ 22,496	\$ 37,500	1,392	88.9		
*DOTFF-CR	Adak Maintenance / SEF	Adak	Service / Shop	17,000	-	-	-	21,237	2,124	\$ 54,145	\$ 54,145	2,124	124.9	Missing some months of utility data	
DOL	AVTEC First Lake Facility Admin Bldg	Seward	Office	20,000	291,900	996	\$ 69,978	13,936	1,394	\$ 23,030	\$ 93,008	2,390	119.5		
DOL	AVTEC Student Service Center (5 Bldgs)	Seward		86,078	872,600	2,978	\$ 135,429	72,852	7,285	\$ 134,052	\$ 268,481	10,263	119.2		
DOL	AVTEC Auto / Hvy Equipment Shop	Seward	Service/Shop	30,278	198,240	677	\$ 36,596	12,473	1,247	\$ 22,367	\$ 58,963	1,924	63.5		
SUBTOTALS				2,039,515	25,502,324	87,039	\$ 2,922,377	1,296,207	129,621	\$ 1,798,736	\$ 4,721,113	216,660			

Alaska Sustainable Energy Act: SB 220

Presentation to Senate Finance (3/25/10)



**Product of the
Senate Resources
Committee
and
Senate Special
Committee on Energy**



Interim Field Hearings

- Tanana
- Fairbanks
- Ruby
- Kenai
- Anchorage
- Kenai
- Haines
- Ouzinkie



Reached out to:

- **Renewable Energy Alaska Program**
- **Alaska Center for Energy and Power**
- **Alaska Federation of Natives**
- **Cold Climate Housing Research Center**
- **Commonwealth North**
- **Alaska Power Association**
- **Southeast Conference**
- **Many other organizations**



Products:

**State Energy Policy and
Program Recommendations
(50+ pages)**

- ❖ **Budgetary (Letter to Senate Finance Committee)**
- ❖ **Statutory (SB 220)**



Hundreds of Comments Received

- **Sifted through comments**
- **Met with stakeholders**
- **Reviewed plans & policies from other states**
- **Refined ideas with experts**



SB 220 Goals

- **Provide affordable and reliable energy for Alaskan families and businesses**
- **Stimulate private sector investment**
- **Produce long-term savings by maximizing energy efficiency**
- **Lead by example**
- **Promote innovation**



Major Bill Components

- **State Energy Policy**
- **Energy Efficiency Revolving Loan Fund**
- **Efficiency in Government**
- **Renewable Energy Tax Credit**
- **Emerging Energy Technology Fund**
- **Energy Loans for Businesses**
- **Alaska Affordable Heating Program**



State Energy Policy

(Sections 2 & 3)

- **High level goals**
- **Increase energy efficiency by 15% by 2020**
- **Generate 50% of electricity statewide using renewable energy by 2020**



State Energy Policy

(Sections 2 & 3)

- **Promote the development of nonrenewable energy resources, including natural gas, heavy oil, nuclear energy, coal, gas hydrates, etc...**
- **Support energy research, education and workforce development**
- **Maintain a fiscal regime that encourages private sector development**



Nuclear Energy

(Sections 5, 6, 7, 8, 19 & 25)

- **Levels playing field for nuclear energy.**
- **Removes requirement for Governor's approval of projects.**
- **Leaves in place requirement for municipal and DEC approval.**
- **Stringent federal permitting process.**
- **Enables nuclear projects to apply for funding from the Power Project Fund.**



Energy Efficiency Revolving Loan Fund

(Sections 4 & 10)

- **Authorizes AHFC to sell up to \$250 million in bonds**
- **Leverages \$18 million in federal stimulus funds**
- **60% to retrofit state buildings and 40% to retrofit school and municipal facilities**
- **Fund should operate in perpetuity**
- **Could create hundreds or thousands of job as weatherization & home energy rebate program have (estimated at 2,500 jobs)**



Leading By Example

(Sections 11, 12, 23, & 24)

- **Retrofit at least 25⁰% of state buildings by 2020. Shown to save at least 20% a year on energy costs.**
 - **Could translate into \$2.75¹ million/year since state spends roughly \$55 million on heating & lighting.**
1. [based on 25% of facilities being retrofitted]

Pay-offs from Retrofitting

(Sections 10 & 23)

- State recently retrofit 8 state buildings
- Were guaranteed savings of at least \$278,000/year by the contractor.
- In year 1, savings = \$366,000
- In year 2, savings = \$592,000
- Last year's savings = \$571,000
- Savings alone from retrofitting 25 % of state buildings could cover the fiscal note for SB 220.



Leading By Example

(Sections 23, 11 & 22)

- **Build all new state buildings to high efficiency standards.**
- **Use alternative energy for new public works, if viable and cost-effective.**
- **Purchase energy efficient appliances, equipment and vehicles.**



Energy Efficiency Campaign

(Section 24)

- Tasks AEA and AHFC with educating Alaskans about low-costs ways to save energy.
- Not only help for individual households, but way to contain cost of building new power generation facilities. (\$9 billion needed in Railbelt alone over next 50 years)
- Experts estimate between 8% and 50% can be saved through efficiency measures alone.
- Cheapest ways to meet energy needs.



Emerging Energy Technologies

(Section 18)

- With high energy costs, Alaska is perfect place to test emerging technologies.
- Can demonstrate technologies and reduce costs for local residents
- Potential to export technologies
- 25% of world's population lives without access to electricity – looking for new ways to energize



Emerging Energy Technologies

(Section 18)

- **Would establish competitive grant program at AEA to foster innovation.**
- **Matched with federal funds from Denali Commission, DOE & private research dollars.**
- **Creates high-tech jobs and spurs investment in Alaska's economy.**
- **NY, CA, TX, MA, and others have funds.**
- **Alaska has potential in be world leader in emerging technologies, given our resources.**



Emerging Technology Fund

(Section 18)

- In 2009, Denali Commission solicited proposals.
- 50 proposals totaling \$29 million were submitted.
- 9 selected to receive \$4 million in grants.
- Goal: To develop emerging technologies that have the potential for widespread deployment.

Example of EETF Project

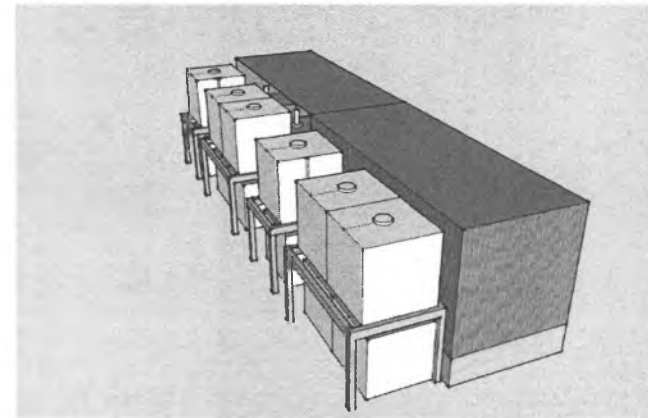
- **Nenana Hydrokinetic Turbine: Ocean Renewable Power Corp.**
- **Tests whether power can be reliably and economically generated from the movement of the Nenana River.**
- **Alaska has significant hydrokinetic potential in both rivers and tidal basins.**
- **Most in-land communities are situated along navigable waterways, such as the Yukon and Kuskokwim, that could produce hydrokinetic energy.**



Ruby Hydrokinetic Turbine
Alaska Center for Energy & Power

Example of EETF Project

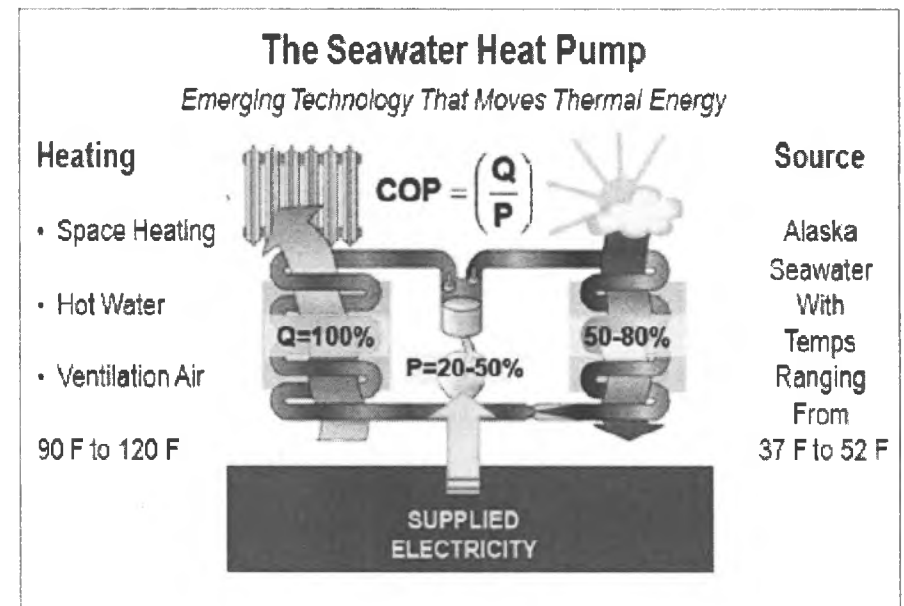
- **Cordova Electric Cooperative:**
“Biogas digester” technology
 - Widespread in India and China.
 - Microbes naturally break down organic feedstock to produce methane. Can be used for heating & cooking.
 - Will test use of various cold-loving microbes and compare efficiency for household scale projects.
 - Digestors could be used as a local, renewable energy source for Alaskan homes.



Source: freewheelings.com

Example of EETF Project

- Alaska SeaLife Center:
Seawater Heat Pump
- Will pump seawater through a heat exchanger containing antifreeze which will boil and vaporize a refrigerant into a pressurized compressor.
- The condensed heat circulates into building at 120 degrees F.
- Technology successfully deployed in Norway and Sweden.



Source: Denali Commission



Renewable Energy Tax Credit

(Sections 20 & 21)

- **Encourages investment by the private sector in renewable energy**
- **Supports the goal of generating 50% of electricity using renewable by 2025**
- **25 states offer renewable energy corporate tax incentives; 5 states and the federal government offer production tax credits**
- **Only accrue once a project is in operation**
- **15% tax refundable credit based on sales**
- **Capped at 10% of capital investment**
- **Sunsets January 1, 2018**

Renewable Energy Tax Credit

(Sections 20 and 21)

- Calculating the credit, what do we need to know?
 1. What is the capital cost?
 2. What state/federal grants did the project receive?
 3. What is the cost per kilowatt-hour?
 4. What is the capacity factor?

Remember:

- There are 8760 hours in a year.
- 1 Megawatt/hr = 1000 Kilowatt/hrs
- \$.01 KW/hr = \$10 MW/hr

RETC: An Example

- A 5 MW Wind Farm
- CAPEX: \$23.5 million
- Grants:
 - \$2 million federal grant
 - \$3.5 million renewable energy grant fund
- Capacity Factor: 20%
- Cost per KW/hr: \$.38



RETC: An Example

- **Step 1: Calculate gross electricity sales**
 - $5 \text{ MW/hr} \times 8760 \text{ hrs/yr} \times 20\% \text{ capacity factor} = 8760 \text{ MW/yr}$
 - $8760 \text{ MW/yr} \times 1000 \text{ KW/MW} \times \$0.38 \text{ KW} = \$3,328,800 \text{ year}$
- **Step 2: Calculate the annual credit**
 - $\$3,328,800 \times 15\% = \$499,320$
- **Step 3: Calculate the total allowable credit**
 - $\text{CAPEX} = (\$23.5 \text{ mm} - \$2 \text{ mm} - \$3.5 \text{ mm} = \$18 \text{ mm}) \times 10\% = \1.8 mm
- **Step 4: How does it work in practice?**
 - Year 1: \$499,320 Year 2: \$499,320 Year 3: \$499,320
 - Year 4 ($\$1.8 - [\$499,320 \times 3]$): \$302,040 Year 5: \$0



RETC: Transferable vs. Refundable

- **Transferable credits are:**

- Approved by the Department.
- Must be marketed and purchased.
 - Broker fees and demands of purchaser means less than full credit goes to the person receiving the incentive.
- The cost to the state is the same. \$1 in credit = \$1 in forgone revenue.

- **Refundable credits are:**

- Subject to Appropriation.
- 100% of credit goes to the recipient.
- Easier to administer.



Loans to Businesses

(Sections 26-33)

- **Would provide loans of up to \$50,000 for alternative energy systems and energy conservation improvements.**
- **Businesses must be primarily owned by Alaskans. Interest rate: prime, plus 1%. Minimum of 5%.**
- **Money can be used for insulation, thermal windows, furnace replacement, etc... Or on energy systems which are not dependent on oil or gas.**



Affordable Heating Program

(Section 35-42)

- **Objectives:**
 - **Make program more responsive to a family's actual heating costs.**
 - **Increase assistance as oil prices rise, need increases & the state enjoys a budget surplus.**
 - **Maintain statewide eligibility.**
 - **Use existing administrative structure.**



How LIHEAP Works

(Section 35-42)

- **Benefits are calculated by multiplying each applicant's "points" by the dollar per point available.**
- **Points are awarded based on household income; heating degree days in household location; type and size of house; presence of children, elderly or disabled in home.**

Program refinement #1

(Sections 35-42)

- Link program eligibility to price of oil.
- Oil under \$150/barrel = 225% of poverty level (\$62,000 for a family of four).
- Oil over \$150/barrel = 250% of FPL (\$69,000 for a family of four).

Program Refinement #2

(Sections 35-42)

- **Link program benefits to the price of oil**
 - \$130/point when crude is < \$75/barrel
 - \$140/point when crude is \$75-\$100/barrel
 - \$150/point when crude is \$100-\$150/barrel
 - \$165/point when crude is > \$150/barrel
- **This year points are valued at \$115.**
- **Last year, points were valued at \$220, which was bumped up to \$316 by a special approp.**



Program Details

(Sections 35-42)

- **DHSS will pro-rate payments if appropriations are insufficient to cover full program cost.**
- **Payments go to fuel vendors, not households.**
- **Individuals must apply and qualify each year.**
- **Current federal appropriation is \$28 million.**
- **Current state appropriation is \$5 million.**
- **20,191 households currently served.**



Other Provisions

- **Technical assistance for municipalities regarding energy codes and efficiency standards. (S.9)**
- **Standard methodology for energy consumption and expense data (S. 10)**
- **Expands purposes of the Southeast Energy Fund (S.14)**



Other Provisions

- AEA facilitate organization and provide technical assistance for a statewide fuel cooperative (S.17)
- Develop a plan to coordinate & consolidate energy programs (S. 48)
- Study CNG vehicles (S.49)



Conclusion

- **SB 220 not a panacea, but a step forward**
- **Proposes a variety of steps to stimulate private investment, lead by example, and promote efficiency and innovation.**
- **Other bills address instate gas, gas storage, gas-to-liquids, exploration incentives, O&G taxes, etc...**
- **Working closely with our House counterparts**
- **SB 220 is just a piece of the pie, leading Alaska to greater self-sufficiency and sustainability**



House energy omnibus

- **HB 305 = House energy omnibus bill**
- **House Energy Committee held extensive field hearings during the interim**
- **Assembled a stakeholder group**
- **High level of commitment to passage of a meaningful omnibus bill**
- **Just this week, the House unanimously passed HB 306, a declaration of state energy policy. Great 1st step.**