

SB

220

<target><bill>SB 220</bill><subject>SB
220</subject><comm>HFIN26</comm></target>

ALASKA STATE LEGISLATURE

Senate Resources Committee

**Senator Bill Wielechowski,
Co-Chair Senate Resources**

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SPONSOR STATEMENT

Senate Bill # 220: Alaska Sustainable Energy Act

During the summer and fall of 2010, the Senate Special Committee on Energy and Senate Resources Committee held hearings across the state on the energy challenges and opportunities facing Alaskans. Starting from the premise that Alaskans want to live and work where energy is available, reliable and affordable; we took testimony and learned firsthand about the impacts high energy costs have had on businesses, communities and families. The diverse range of ideas we received were integrated into a broad *Draft State Energy Policy and Program Recommendations* document that is available on the Alaska Senate Energy Policy Group's website: www.energy.aksenate.org

Working together as chairs of the Senate Resources Committee, we drafted the *Alaska Sustainable Energy Act* (SB 220) as an omnibus bill to address the challenges we heard from Alaskans. In addition to the omnibus energy bill, we also released a detailed list of funding recommendations that are available on the website. Where the *Alaska Sustainable Energy Act* breaks new ground, the funding recommendations are intended to build on previous efforts by the Legislature.

The *Alaska Sustainable Energy Act* starts by establishing a statewide energy policy that recognizes the importance of Alaska's fossil fuel resources but also identifies Alaska's vast renewable energy potential. With largely under-explored wind, wave and geothermal resources, Alaska can become a global leader in renewable energy. The policy also seeks to find ways to use energy more wisely and sets goals for energy efficiency. Finally, the policy states that cost-effective solutions need to be found for every community. Despite our vast distances and unique local challenges, energy is a basic need in Alaska and the foundation of our economy. Finding ways to meet the energy needs of our neighbors will make all of Alaska stronger. Therefore, we drafted the *Alaska Sustainable Energy Act* to provide the tools to move Alaska forward into a sustainable future.

Tools in the Toolbox

The *Alaska Sustainable Energy Act* includes a broad range of policy tools designed to attract investment in Alaska's energy sector and stimulate the economy. The programs in SB 220 fall into three basic categories: near-term, mid-term and long-term solutions.

Near Term Solutions: Plan and Assist

- **Energy Efficiency Revolving Loan Fund:** Senate Bill 220 creates a revolving loan program to fund energy efficiency improvements in public buildings. School districts, municipalities and state government will have access to the funds needed to upgrade their facilities. Based on what we have seen from the State's *Weatherization* and *Home Energy Rebate* programs, this fund will foster 1,500 to 2,000 jobs in the construction industry in Alaska. SB 220 authorizes the Alaska Housing Finance Corporation to issue \$250 million in bonds to capitalize this critical new loan fund.
- **Help for Alaskan Families When Fuel Prices Soar:** SB 220 links benefits from the state's Heating Assistance Program to the price of oil, providing additional assistance to low-income families when fuel prices are high, Alaskans need help the most, and the state enjoys significant surpluses. This program is a supplement to the federal Low-Income Heating Assistance Program (LIHEAP).
- **Retrofit State Buildings:** Just like a person's home, state buildings can be made more energy efficient. Currently, the State of Alaska alone (not counting schools) spends roughly \$55 million per year on heating and lighting its buildings. Energy efficiency improvements can save 20% in energy costs, which could translate to more than \$10 million in savings per year. SB 220 requires the Department of Transportation and Public Facilities to prioritize which buildings to fix first and to construct any new buildings to high efficiency standards. It also mandates that renewable energy systems be considered when constructing new public works projects.
- **Energy Policy for Alaska:** SB 220 adopts an energy policy for Alaska, including the goal to increase energy efficiency by 15% and generate 50% of the state's electricity using renewable energy sources by 2020.
- **Statewide Fuel Cooperative:** Many rural communities struggle with crippling fuel costs. SB 220 directs the Alaska Energy Authority to work with interested communities to establish a fuel coop that will facilitate bulk purchases, lowering costs especially for small communities.
- **Coordinate and Consolidate State Energy Programs:** SB 220 asks the Governor to evaluate how best to coordinate the State's energy departments and programs in order to avoid duplication of efforts. The Governor is directed to provide a plan to the legislature by November of 2010.

- **Purchase Energy Efficient Vehicles and Equipment:** SB 220 mandates that the state consider long-term energy costs when purchasing vehicles for its fleet and equipment for its operations. It also requires the state to study the feasibility of using compressed natural gas to power vehicles in Alaska.
- **Public Education Campaign:** SB 220 tasks the Alaska Energy Authority and the Alaska Housing Finance Corporation (AHFC) with educating Alaskans about low-cost ways they can cut their energy consumption and costs. Using energy more efficiently helps not only individual households, but also assists the state in containing the cost of new power generation facilities. In addition, the bill directs the AHFC to provide technical assistance to municipalities interested in adopting local energy codes.

Medium Term Solutions: Incentivize Investment

- **Renewable Energy Tax Credit:** Several states have passed renewable energy tax credits to encourage investment in renewable energy resources. SB 220 provides a refundable tax credit to investors to encourage private sector investment in Alaska's renewable energy sector.
- **Loans to Businesses for Energy Conservation Improvements:** Alaska already provides loan programs to households for energy improvements. SB 220 includes loans of up to \$50,000 for businesses to enable investments in energy efficiency. This program will help primarily small businesses get access to the capital they need to make investments that will save money and encourage economic development.
- **Nuclear Energy:** SB 220 levels the playing field for nuclear energy projects in Alaska, ensuring that as new technologies are developed, Alaska can consider them alongside other options. It also enables proponents of small-scale nuclear energy projects to apply for funding from the state's Power Project Fund.
- **Southeast Energy Fund:** SB 220 expands the purposes for which this fund may be used, providing an improved mechanism for constructing generation and transmission projects in Southeast Alaska. Many communities in the region are still powered by high-cost diesel systems, despite the region's enormous hydropower potential.

Long Term Solutions: Innovate

- **Emerging Energy Technology Fund (EETF):** With the high cost of energy in many of our communities, Alaska provides a unique opportunity for innovation. The *Alaska Sustainable Energy Act* would create a fund that would provide grants for testing energy technologies in Alaska. The EETF would foster innovation and enable Alaskans to develop solutions to our energy challenges in Alaska; creating high-tech jobs and spurring investment in our economy.

ALASKA STATE LEGISLATURE

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Phone (907) 465-2995
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Sectional Analysis: SB 220 (version Y)

Section 1 of the bill provides for the short title of the bill.

Section 2 allows a regional school board to apply for and use the proceeds of a loan from the Alaska energy efficiency revolving loan fund.

Section 3 of the bill allows the University of Alaska Board of Regents to apply for and use the proceeds of a loan from the Alaska energy efficiency revolving loan fund.

Section 4 of the bill amends AS 18.45.020 to include the phrases "special nuclear material facility" and "by-product material facility" in order to cover more projects or activities in this section for which a license or permit may be needed from the Nuclear Regulatory Commission.

Section 5 of the bill adds the phrase "nuclear utilization facility" to AS 18.45.025(a) in order to conform with definitions listed in AS 18.45.900.

Section 6 of the bill amends AS 18.45.025(b) to state that when the legislature designates by law the land in the state on which a nuclear utilization facility or utilization facility may be located, it must act only in the interest of regulating the economics of nuclear energy.

Section 7 of the bill deletes a line of AS 18.45.025(c) that states that a permit may not be issued unless approved by the governor, leaving only a requirement for approval by the Department of Environmental Conservation and a municipality.

Section 8 of the bill provides the Alaska Housing Finance Corporation with the power to provide technical assistance to municipalities regarding energy codes and efficiency standards.

Section 9 of the bill creates an energy efficiency revolving loan fund in the Alaska Housing Finance Corporation for providing loans to regional attendance areas, municipalities, or the state for the purpose of financing energy efficiency improvements to buildings.

Section 10 of the bill allows a municipality to exempt from taxation a residential renewable energy system.

Section 11 of the bill requires the Office of Management and Budget to work with state agencies to develop a standardized methodology to collect and store energy consumption and expense data.

Section 12 of the bill stipulates that a state lease with an electric utility may not include a fee based on a percentage of gross revenue for renewable energy produced by the utility.

Section 13 of the bill repeals and reenacts the Southeast Energy Fund to expand the options for money going into the fund and expands the projects for which the fund may be used.

Section 14 of the bill creates the emerging energy technology fund.

Section 15 of the bill amends the definition of "power project" or "project" in AS 42.45.990(4) to delete the exclusion of nuclear energy from the definition in relation to statewide and rural energy programs.

Section 16 of the bill requires the Department of Transportation and Public Facilities to purchase energy efficient cars whenever practicable.

Section 17 of the bill amends the definition of "power project" or "project" in AS 44.83.990(6) to delete the exclusion of nuclear energy from the definition in relation to the Alaska Energy Authority.

Sections 18-25 of the bill amend the alternative energy revolving loan fund by amending the funding sources and having the fund used only for commercial buildings.

Section 26 of the bill amends the definition of "alternative energy system" in AS 46.11.900(1) to remove the exclusion of nuclear fuel as it relates to financing of energy efficient homes and buildings.

Sections 27 - 34 converts the Alaska heating assistance program into the Alaska affordable heating program and makes substantive and conforming changes to that program.

Section 35 repeals the emerging energy technology fund in 2015.

Section 36 of the bill repeals certain terms of the Alternative Energy Revolving Loan Fund.

Section 37 of the bill requires the Office of Management and Budget to work with state agencies to develop a standardized methodology to collect and store energy consumption and expense data no later than January 31, 2011.

Section 38 of the bill requires the Office of the Governor to, not later than January 31, 2011, submit a report to the legislature regarding the structuring of state energy programs.

Section 39 of the bill requires the Department of Transportation and Public Facilities to study the feasibility of using compressed natural gas to power vehicles in the state and develop a proposal for a pilot program if warranted by the study.

Section 40 of the bill authorizes the Alaska Housing Finance Corporation to issue bonds to support making loans from the energy efficiency revolving loan fund established by AS 18.56.855.

Section 41 of the bill requires the Department of Revenue to submit a report to the legislature by January 31, 2011, regarding the feasibility of a municipal energy improvements financing program.

Section 42- 43 of the bill concern Department of Health and Social Service regulations for the Heating Assistance Program.

Section 44 of the bill directs the revisor of statutes to make two changes to article headings to conform with statutory changes.

Section 45 of the bill provides an immediate effective date for the transitional regulations in Section 42 (b).

2010 HOUSE FINANCE
VOTE CALL

DATE: 4/16/10

Amendment: 4

MEMBER	Favor	Oppose
REP. THOMAS	✓	
REP. AUSTERMAN		✓
REP. DOOGAN	✓	
REP. FAIRCLOUGH		✓
REP. FOSTER	✓	
REP. GARA	✓	
REP. JOULE	✓	
REP. KELLY		✓
REP. SALMON	✓	
REP. HAWKER		✓
REP. STOLTZE		✓

YEA 4

NAY 5

Adopted 4/16/10

AMENDMENT #4

OFFERED IN THE HOUSE

TO: HCS CSSB 220(ENE)

Gara
Thomas

1 Page 15, following line 24:

2 Insert a new bill section to read:

3 ** Sec. 17. AS 44.42 is amended by adding a new section to read:

4 **Sec. 44.42.067. Retrofits and new construction for energy efficiency;**
5 **energy efficiency report.** (a) Not later than January 1, 2020, the department shall
6 work with other state agencies to retrofit at least 25 percent of all public facilities,
7 starting with those it determines are the least energy efficient, if the department
8 determines that retrofitting the public facilities will result in a net savings in energy
9 costs to the state within 15 years after completion of the retrofits for a public facility
10 and if funding for the retrofits is available.

11 (b) A retrofit or deferred maintenance of a public facility performed under this
12 section, to the extent feasible, shall meet or exceed the most recently published edition
13 of the ASHRAE/IESNA Standard 90.1, Energy Standard for Buildings Except for
14 Low-Rise Residential Buildings, as published by the American Society of Heating,
15 Refrigerating and Air-Conditioning Engineers.

16 (c) New construction of a public facility under this section shall meet or
17 exceed the most recently published edition of the ASHRAE/IESNA Standard 90.1,
18 Energy Standard for Buildings Except for Low-Rise Residential Buildings, as
19 published by the American Society of Heating, Refrigerating and Air-Conditioning
20 Engineers.

21 (d) Not later than January 1 of each year, the department, in consultation with
22 the Department of Administration, shall submit a report to the legislature detailing the
23 department's progress in meeting the requirements of this section to reduce state

1 energy consumption and costs and carrying out the duties listed in AS 44.42.020 as
2 they relate to energy use. The department shall include in the report an analysis of the
3 consumption and expense data recorded by the office of management and budget
4 under AS 37.07.040, comparing energy consumption levels in each year with past
5 years to determine if reductions are being achieved.

6 (e) In this section, "public facility" means a facility owned and controlled by
7 the state for government or public use that is 10,000 square feet or more and is not a
8 legislative building or court building."
9

10 Renumber the following bill sections accordingly.

11
12 Page 26, line 18:

13 Delete "secs. 27 - 34"

14 Insert "secs. 28 - 35"
15

16 Page 26, line 20:

17 Delete "secs. 27 - 34"

18 Insert "secs. 28 - 35"
19

20 Page 26, line 21:

21 Delete "secs. 27 - 34"

22 Insert "secs. 28 - 35"
23

24 Page 27, line 1:

25 Delete "secs. 27 - 34"

26 Insert "secs. 28 - 35"
27

28 Page 27, following line 1:

29 Insert a new bill section to read:

30 **** Sec. 45.** The uncodified law of the State of Alaska is amended by adding a new section to
31 read:

1 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES. Not later
2 than one year after the effective date of this section, the Department of Transportation and
3 Public Facilities, in consultation with the Alaska Energy Authority, shall adopt and implement
4 a systematic process for prioritizing the retrofiting of state facilities for a long-term increase
5 in energy efficiency and reduction of energy costs."

6

7 Renumber the following bill sections accordingly.

8

9 Page 27, line 9:

10 Delete "Section 42(b)"

11 Insert "Section 43(b)"

Adopted
4/14/10

26-LS1197\Y.6
Kane
4/13/10

AMENDMENT #1

OFFERED IN THE HOUSE

BY REPRESENTATIVE THOMAS

TO: HCS CSSB 220(ENE)

1 Page 11, line 11:

2 Delete ", or"

3 Insert "and 42.45.310,"

4

5 Page 11, line 12, following "AS 10.25,":

6 Insert "or another electric utility holding a certificate of public convenience and
7 necessity under AS 42.05"

Adopted
4/14/10

26-LS1197Y.7
Kane
4/15/10

AMENDMENT #2

OFFERED IN THE HOUSE

BY REPRESENTATIVE KELLY

TO: HCS CSSB 220(ENE)

1 Page 18, lines 15 - 16:

2 Delete "with a catalytic converter or a catalytic converter for a wood stove"

3 Insert "that complies with the provisions of 40 C.F.R. 60.530 [WITH A

4 CATALYTIC CONVERTER OR A CATALYTIC CONVERTER FOR A WOOD STOVE]"

5

6 Page 18, line 21:

7 Delete "wood, coal,"

8 Insert "coal [WOOD, COAL,]"

Adopted 4/14/10

AMENDMENT #5

Thomas J
Gruen

OFFERED IN HOUSE FINANCE

BY REPRESENTATIVE

TO: HCS CSSB 220(ENE)

#5

by Request

Page 15 following line 24:

Insert "**Sec. 17. AS 44.83.080 is amended by adding a new paragraph to read:

(17) to promote energy conservation, energy efficiency, and alternative energy through training and public education."

Renumber the following bill sections accordingly.

Page 26, line 18, following "secs.":

Insert "28 - 35"

Delete "27 - 34"

Page 26, line 20, following "secs.":

Insert "28 - 35"

Delete "27 - 34"

Page 26, line 21, following "secs.":

Insert "28 - 35"

Delete "27 - 34"

Page 27, line 1, following "secs.":

Insert "28 - 35"

Delete "27 - 34"

Page 27, line 1, following "Section":

Insert "43(b)"

Delete "42(b)"

WITHDRAWN

26-LS1197\Y.3
Kane
4/13/10

AMENDMENT #3

Gara
Thomas

OFFERED IN THE HOUSE
TO: HCS CSSB 220(ENE)

1 Page 8, following line 30:

2 Insert a new bill section to read:

3 **** Sec. 11.** AS 36.30 is amended by adding a new section to read:

4 **Sec. 36.30.323. Consideration of energy efficient equipment.** When the
5 Department of Administration enters into contracts to purchase equipment that uses
6 energy, it shall give consideration to the energy efficiency of the equipment where
7 credible and objective information on efficiency levels is readily available."
8

9 Renumber the following bill sections accordingly.
10

11 Page 23, line 27:

12 Delete "sec. 14"

13 Insert "sec. 15"

14

15 Page 24, line 3:

16 Delete "sec. 11"

17 Insert "sec. 12"

18

19 Page 26, line 18:

20 Delete "secs. 27 - 34"

21 Insert "secs. 28 - 35"

22

23 Page 26, line 20:

1 Delete "secs. 27 - 34"

2 Insert "secs. 28 - 35"

3

4 Page 26, line 21:

5 Delete "secs. 27 - 34"

6 Insert "secs. 28 - 35"

7

8 Page 27, line 1:

9 Delete "secs. 27 - 34"

10 Insert "secs. 28 - 35"

11

12 Page 27, line 9:

13 Delete "Section 42(b)"

14 Insert "Section 43(b)"

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: _____
 Bill Version: HCS CSSB 220(FIN)
 () Publish Date: _____

Identifier (file name): HCS CSSB220(FIN)-DOT-SPF-4-16-10 Dept. Affected: DOT&PF
 Title: Omnibus Energy RDU: Design, Engineering & Construction
 Component: Statewide Public Facilities & Facilities Lease Component
 Sponsor: Senate Resources
 Requester: Senate Resources Component Number: 2882, 2892

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services	228.5		228.5	228.5	228.5	228.5	228.5	228.5
Travel	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Contractual	135.7		48.2	48.2	48.2	48.2	48.2	48.2
Supplies	34.0		3.0	3.0	3.0	3.0	3.0	3.0
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING	418.2	0.0	299.7	299.7	299.7	299.7	299.7	299.7

CAPITAL EXPENDITURES								
CHANGE IN REVENUES ()								

FUND SOURCE (Thousands of Dollars)

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1002 Federal Receipts							
1003 GF Match							
1004 GF	418.2		299.7	299.7	299.7	299.7	299.7
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other Interagency Receipts							
TOTAL	418.2	0.0	299.7	299.7	299.7	299.7	299.7

Estimate of any current year (FY2010) cost: _____

POSITIONS

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Full-time	2.0		2	2	2	2	2
Part-time							
Temporary							

ANALYSIS: (Attach a separate page if necessary)

DOT&PF will hire an Engineer/Architect II, and an Engineer/Architect I to oversee the retrofits of all public buildings and to manage the performance contracts under the revolving loan program. DOT&PF estimates that 4 public facilities, as defined in the bill, need to be retrofitted annually to meet the goal of having 25% completed by 2020. The department will hire a consultant (\$90.0 budgeted) to study the feasibility of using compressed natural gas to power state vehicles and develop a pilot project with estimated costs by the required due date of January 2011.

Supply costs in FY2011 include the cost of outfitting two positions with desks, computers, phones, fax, printers and general office supplies. The contractual costs include \$33.7 for additional office space (component 2892) for the new positions. On going contractual costs include costs for copier, fax, phone, maintenance costs, core services costs and training and professional development.

Prepared by: Mary Siroky, Legislative Liaison
 Division: Department of Transportation and Public Facilities
 Approved by: Frank Richards, Deputy Commissioner
Department of Transportation and Public Facilities

Phone 465-4772
 Date/Time 4/16/10 10:00pm
 Date 4/16/2010

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: _____
Bill Version: CSSB 220(ENE)
() Publish Date: _____

Identifier (file name): CSSB220(ENE)-REV-AHFC-4-12-10 Dept. Affected: Revenue
Title: ENERGY EFFICIENCY/ ALTERNATIVE ENERGY RDU: Alaska Housing Finance Corp.
Sponsor: Senate Resources Committee Component: Operations
Requester: House Finance Committee Component Number: 110

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING		0.0	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES								
-----------------------------	--	--	--	--	--	--	--	--

CHANGE IN REVENUES ()								
-------------------------------	--	--	--	--	--	--	--	--

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts								
1003 GF Match								
1004 GF								
1005 GF/Program Receipts								
1037 GF/Mental Health								
Other Interagency Receipts								
TOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2010) cost: _____

POSITIONS

Full-time								
Part-time								
Temporary								

ANALYSIS: (Attach a separate page if necessary)

CS for Senate Bill 220(ENE) includes language that will set up an energy efficiency revolving loan fund and authorize the Alaska Housing Finance Corporation to sell up to \$250 million in bonds to fund the program.

Costs associated with the issuance of these bonds are anticipated to be covered with annual operating budget authorizations. Operational costs for issuing and monitoring these bonds will be done with existing personnel and within the authorized operating budget for FY11 and beyond.

Prepared by: Bryan Butcher, Director, Governmental Relations/Public Affairs
Division: Alaska Housing Finance Corporation
Approved by: Ginger Blaisdell, Director
Administrative Services Division, Department of Revenue

Phone: 330-8445
Date/Time: 04-12-10; 7:45am
Date: 04-13-10; 4:10pm

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: 3
 Bill Version: CSSB 220(RES)
 (S) Publish Date: 3/10/10

Identifier (file name): SB220CS(RES)-DEC-CO-3-04-10 Dept. Affected: Environmental Conservation
 Title: Energy Efficiency / Alternative Energy RDU: Administration
 Component: Office of the Commissioner
 Sponsor: Senate Resources Committee
 Requester: Senate Resources Committee Component Number: 633

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information					
		FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES							
Personal Services							
Travel							
Contractual							
Supplies							
Equipment							
Land & Structures							
Grants & Claims							
Miscellaneous							
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES							
-----------------------------	--	--	--	--	--	--	--

CHANGE IN REVENUES ()							
-------------------------------	--	--	--	--	--	--	--

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other Interagency Receipts							
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2010) cost: 0.0

POSITIONS

Full-time							
Part-time							
Temporary							

ANALYSIS: (Attach a separate page if necessary)

While section 6 and section 8 of the bill amends statutes which are to be implemented by the Department of Environmental Conservation, the amendments will have no additional fiscal impact. It should be noted, however, that there is currently no budget for implementing these statutes pertaining to permitting nuclear facility sites.

Prepared by: Marit Carlson-Van Dort Phone 465-5871
 Division: Office of the Commissioner Date/Time 3/4/10 4:00 PM
 Approved by: Larry Hartig Date 3/4/2010
Commissioner

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: 6
Bill Version: CSSB 220(RES)
(S) Publish Date: 3/10/10

Identifier (file name): SB220CS(RES)-DHSS-EA-03-05-10 Dept. Affected: Health & Social Services
Title: Energy Efficiency/Alternative Energy RDU: Public Assistance
Component: Energy Assistance Program
Sponsor: Senate Resources
Requester: Senate Resources Component Number: 226

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING	0.0	0.0	*	*	*	*	*	*

CAPITAL EXPENDITURES								
-----------------------------	--	--	--	--	--	--	--	--

CHANGE IN REVENUES (
-----------------------------	--	--	--	--	--	--	--	--

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts								
1003 GF Match								
1004 GF								
1005 GF/Program Receipts								
1037 GF/Mental Health								
Other Interagency Receipts								
TOTAL	0.0	0.0	*	*	*	*	*	*

Estimate of any current year (FY2010) cost: _____

POSITIONS

Full-time								
Part-time								
Temporary								

ANALYSIS: (Attach a separate page if necessary)

CSSB220 changes the name of the Alaska heating assistance program (AKHAP) to the Alaska affordable heating program (AAHP) and allows for an income eligibility limit of up to 250% of the federal poverty guidelines (FPG) when the average price of a barrel of North Slope Crude (NSC) between February and September of the preceding year exceeds \$150 per barrel. The bill also fixes the dollar value of a Community Heating Point (CHP). CHP is the key factor in determining the amount of heating assistance payments and, under this bill, the dollar value assigned to the CHP is linked to the average price of a barrel of NSC. This legislation allows payments for households receiving federal assistance from LIHEAP to be supplemented by AAHP funds to ensure payments to lowest income households is based on the same dollar per CHP value used to determine payments for the Alaska affordable heating program. It also establishes the Alaska affordable heating fund (AAHF) in the Department of Revenue (DOR) to be used by the Department of Health and Social Services (DHSS) to provide heating assistance payments to eligible households.
continued on next page

Prepared by: Ellie Fitzjarrald, Director
Division: Public Assistance

Phone: 465-5847
Date/Time: 3/3/10 10:51 AM

Approved by: Alison Elgee, Assistant Commissioner
DHSS Finance & Management Services

Date: 3/5/2010

ANALYSIS CONTINUATION

Assumptions

The \$5,000.0 in the governor's FY11 proposed budget for the Alaska heating assistance program is adequate to cover the initial benefit and administrative costs for the new Alaska affordable heating program. This would require an average price of a barrel of North Slope Crude oil (NSC) in the preceding year (Feb. - Sept. 2010) below \$75, which triggers a CHP value of \$130.

In general, AAHP will be administered and operated in the same manner as AKHAP.

A fair and equitable share of the appropriation for the Alaska affordable heating fund will be distributed to tribal organizations operating a regional affordable heating program.

Eligible households with incomes at or below 150% FPG may have their LIHEAP payment augmented with funds from the Alaska affordable heating fund.

For FY10, the state's share of the federal LIHEAP block grant only allows the state to provide awards based on a Community Heating Point (CHP) value of \$115 per point to eligible households. It is assumed federal funding for FY11 and the per-point value assigned to a CHP will remain the same.

In FY11, it is estimated that the state and tribal affordable heating programs will serve 21,600 households. Approximately 19,000 will be recipient households of the LIHEAP program and 2,600 will only be beneficiaries of the affordable heating program. It is assumed that the average number of points for which a household below 150% FPG is eligible is 10. The average number of points for a household between 151% and 225% FPG is 5.

Benefit costs will increase in FY12 due to a projected caseload growth of 3%, with costs remaining relatively stable in out years if the average price of a barrel of NSC remains below \$75. However, assessing program impacts is complicated by the uncertainty in estimating program participation. The cost of heating fuel for consumers increases as the value of NSC increases. Increased consumer costs are likely to increase demand for the program's services and benefits. This is expected to be most pronounced when the value of NSC exceeds \$150 per barrel and the higher income limit is triggered. It is estimated that as many as 5,000 more households may be eligible when the income limit reaches 250% FPG.

Projections of Total Benefit Costs: The \$5,000.0 currently in the governor's FY11 approved budget for the Alaska Heating Assistance Program will be used to cover benefit and administrative costs of the initial year of the Alaska Affordable Heating Program.

The total costs for benefits in FY11 are estimated to be \$4,540.0 in state general funds as shown below.

LIHEAP (State and Tribal) households: \$130-\$115 = \$15 x 10 CHP x 19,000 households =	\$2,850.0
For AAHP (State and Tribal) households: \$130 x 5 CHP x 2,600 households =	<u>\$1,690.0</u>
	\$4,540.0

Changing only the NSC sale price, the annual costs for benefits would be:
\$6,570.0 when a barrel of NSC sells for \$75 to \$100 per barrel (\$140 per CHP); and
\$8,600.0 when a barrel of NSC sells for \$100 to \$150 per barrel (\$150 per CHP).

When NSC exceeds \$150 per barrel, the 250% income limit and the highest \$/CHP value is triggered and as many as 5,000 additional households may become eligible for a total cost of \$15,770.0 (\$165 per CHP).

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: 7
 Bill Version: CSSB 220(FIN)
 (S) Publish Date: 4/10/10

Identifier (file name): SB220CS(FIN)-CED-AIDEA-4-9-10 Dept. Affected: DCCED
 Title Omnibus Energy Bill RDU AIDEA
 Component AIDEA operations
 Sponsor Senate Resources Committee
 Requester Senate Finance Committee Component Number 1234

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services	276.5		276.5	276.5	276.5	276.5	276.5	276.5
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING	276.5	0.0	276.5	276.5	276.5	276.5	276.5	276.5

CAPITAL EXPENDITURES								
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CHANGE IN REVENUES ()								
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts								
1003 GF Match								
1004 GF								
1005 GF/Program Receipts								
1037 GF/Mental Health								
Other Interagency Receipts	276.5		276.5	276.5	276.5	276.5	276.5	276.5
TOTAL	276.5	0.0	276.5	276.5	276.5	276.5	276.5	276.5

Estimate of any current year (FY2010) cost: _____

POSITIONS

Full-time	3.0		3	3	3	3	3
Part-time							
Temporary							

ANALYSIS: (Attach a separate page if necessary)
 SB 220, titled the "Alaska Sustainable Energy Act," impacts the Alaska Industrial Development and Export Authority by increasing needed positions for Alaska Energy Authority requirements.

Section 12 - establishing the "Emerging Energy Technology Fund" and requiring the authority to administer the fund by making grants to eligible applicants. Cost assumptions include:

Approximately \$276,518 per year to cover contract for personal services with AIDEA
 Positions required: 1 Range 22 for program/project management; 1 Range 15 for finance/grant administration; 1 Range 12 for administrative support.

Prepared by: Sara Fisher-Goad, Deputy Director-Operations Phone 907-771-3012
 Division: Alaska Industrial Development and Export Authority Date/Time 4/9/10 12:00 AM
 Approved by: Emil Notti, Commissioner Date 4/9/2010
Commerce, Community and Economic Development

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: 8
 Bill Version: CSSB 220(FIN)
 (S) Publish Date: 4/10/10

Identifier (file name): SB220CS(FIN)-CED-AEA-4-9-10 Dept. Affected: DCCED
 Title: Omnibus Energy Bill RDU: Alaska Energy Authority
 Component: Statewide Project Development
 Sponsor: Senate Resources Committee
 Requester: Senate Finance Committee Component Number: 2888

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services								
Travel	21.8		20.2	20.2	20.2	20.2	20.2	20.2
Contractual	358.5		276.5	276.5	276.5	276.5	276.5	276.5
Supplies								
Equipment	10.0							
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING	390.3	0.0	296.7	296.7	296.7	296.7	296.7	296.7

CAPITAL EXPENDITURES								
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CHANGE IN REVENUES ()								
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FUND SOURCE (Thousands of Dollars)

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1002 Federal Receipts							
1003 GF Match							
1004 GF	390.3		296.7	296.7	296.7	296.7	296.7
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other Interagency Receipts							
TOTAL	390.3	0.0	296.7	296.7	296.7	296.7	296.7

Estimate of any current year (FY2010) cost: _____

POSITIONS (see AIDEA FN for details)

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Full-time							
Part-time							
Temporary							

ANALYSIS: (Attach a separate page if necessary)

SB 220, titled the "Alaska Sustainable Energy Act," impacts the Alaska Energy Authority by:

Section 11 - repealing and reenacting the purpose of the existing Southeast Energy Fund managed by the Alaska Energy Authority. From this fund AEA could award grants to a municipality, a joint action agency, or a utility cooperative for power projects, repayment of loans, and payments on bonds for hydroelectric projects and electrical transmission lines or interties serving Southeast Alaska that are entirely owned by the grantee.

(Continued)

Prepared by: Sara Fisher-Goad, Deputy Director-Operations
 Division: Alaska Energy Authority
 Approved by: Emil Notti, Commissioner
Commerce, Community and Economic Development

Phone 907-771-3012
 Date/Time 4/9/10 12:00 AM
 Date 4/9/2010

FISCAL NOTE # 8

STATE OF ALASKA
2010 LEGISLATIVE SESSION

BILL NO. CSSB 220(FIN)

ANALYSIS CONTINUATION

Currently the fund balance is zero. Depending on the capitalization, AEA would need to draft regulations and develop a process to administer grants including an allocation method for the various types of eligible projects which would bring additional expenses. Costs are unknown at this time.

Section 12 - establishing the "Emerging Energy Technology Fund" and requiring the authority to administer the fund by making grants to eligible applicants. Cost Assumptions:

Approximately **\$82,000** in one-time start up costs to develop program criteria, RFA process, review process, grant agreements, etc. (Contractual)

Approximately **\$21,840** per year to cover Advisory Committee expenses (travel - assume \$660 airfare + 120 per diem x 7 members x 4 quarterly meetings)

Approximately **\$276,518** per year to cover contract for personal services with AIDEA
Positions required: 1 Range 22 for program/project management; 1 Range 15 for finance/grant administration; 1 Range 12 for administrative support. (Contractual)

Approximately **\$10,000** (Equipment) for new staff

Section 13 - changing the definition of a power project relative to the power project fund to include nuclear production. AEA's costs are zero because there are currently no projects of this type. However, in the event viable nuclear projects are identified, annual operating costs would increase by \$365,000 for each nuclear power project that has to be managed; \$165,000 for a project manager with technical nuclear knowledge and \$200,000 for contractual advisory service in the field.

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: 9
 Bill Version: CSSB 220(FIN)
 (S) Publish Date: 4/10/10

Identifier (file name): CSSB220(FIN)-REV-MBBA-04-09-10 Dept. Affected: Revenue
 Title: ENERGY EFFICIENCY/ ALTERNATIVE ENERGY RDU: AK Municipal Bond Bank Authority
 Component: AMBBA Operations
 Sponsor: Senate Resources Committee
 Requester: Senate Finance Committee Component Number: 108

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Reserve Fund								
TOTAL OPERATING		0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES								
CHANGE IN REVENUES ()								

FUND SOURCE (Thousands of Dollars)

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Program Receipts							
Charges for services							
Reserve Fund Earnings							
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2010) cost: 0.0

POSITIONS

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Full-time							
Part-time							
Temporary							

ANALYSIS: (Attach a separate page if necessary)

Seante Bill 220 requires that the Alaska Municipal Bond Bank Authority prepare a report annually. The AMBBA should be able to fulfill this requirement with no additional cost to operations.

Prepared by: Deven Mitchell, Debt Manager
 Division: Treasury
 Approved by: Ginger Blaisdell, Director
Administrative Services Division, Department of Revenue

Phone: 465-3750
 Date/Time: 04-09-10; 6:52pm
 Date: 04-09-10; 6:55pm

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: 11
 Bill Version: CSSB 220(FIN)
 (S) Publish Date: 4/10/10

Identifier (file name): SB220CS(RES)-DOA-DGS-04-09-10 Dept. Affected: DOA
 Title "An act declaring a state energy policy..." RDU Centralized Administrative Services
 Component Purchasing
 Sponsor (S) RES
 Requester (S) FIN Component Number 81

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES								
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CHANGE IN REVENUES ()								
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FUND SOURCE		(Thousands of Dollars)					
1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other Interagency Receipts							
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2010) cost: _____

POSITIONS

Full-time							
Part-time							
Temporary							

ANALYSIS: (Attach a separate page if necessary)

This legislation will have no fiscal impact on the Department of Administration.

Prepared by: Vern Jones, Chief Procurement Officer
 Division: General Services
 Approved by: Kevin Brooks, Deputy Commissioner
Department of Administration

Phone 907-465-2250
 Date/Time 4/9/10 5:00 PM
 Date 4/9/2010

FISCAL NOTE

**STATE OF ALASKA
2010 LEGISLATIVE SESSION**

Fiscal Note Number: 12
 Bill Version: CSSB 220(FIN)
 (S) Publish Date: 4/10/10

Identifier: CSSB220(FIN)-DOT-SPF-4-10-10 Dept. Affected: DOT&PF
 Title: Omnibus Energy RDU: Design, Engineering & Construction
 Component: Statewide Public Facilities
 Sponsor: Senate Resources
 Requester: Senate Finance Component Number: 2882

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services	117.8		117.8	117.8	117.8	117.8	117.8	117.8
Travel	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Contractual	96.0		6.0	6.0	6.0	6.0	6.0	6.0
Supplies	9.5		1.5	1.5	1.5	1.5	1.5	1.5
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING	233.3	0.0	135.3	135.3	135.3	135.3	135.3	135.3

CAPITAL EXPENDITURES								
CHANGE IN REVENUES ()								

FUND SOURCE (Thousands of Dollars)

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1002 Federal Receipts							
1003 GF Match							
1004 GF	233.3		135.3	135.3	135.3	135.3	135.3
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other Interagency Receipts							
TOTAL	233.3	0.0	135.3	135.3	135.3	135.3	135.3

Estimate of any current year (FY2010) cost: _____

POSITIONS

	FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Full-time	1.0		1	1	1	1	1
Part-time							
Temporary							

ANALYSIS: (Attach a separate page if necessary)

DOT&PF will hire an Engineer/Architect II to oversee the retrofits of public buildings done through the revolving loan program. This position will be the state's expert on energy audits, retrofits and performance contracting and will work closely with the Alaska Housing Finance Corporation on the Alaska Energy Efficiency Revolving Loan Program providing assistance with the development and management of performance contracts, reviewing loan applications and setting standards. The position will standardize the collection of energy consumption data and expenses for those state facilities owned and operated by DOT&PF.

A consultant (\$90.0 budgeted) will study the feasibility of using compressed natural gas to power state vehicles and develop a pilot project with estimated costs by the required due date of January 2011. Supply costs in FY2011 include the cost of outfitting the new position with desk, computer, phone, and general office supplies. On going contractual costs include costs for copier, fax, phone, maintenance costs, core services costs and training and professional development.

Prepared by: Mary Siroky, Legislative Liaison
 Division: Department of Transportation and Public Facilities
 Approved by: Frank Richards, Deputy Commissioner
Department of Transportation and Public Facilities

Phone 465-4772
 Date/Time 4/10/10 10:00am
 Date 4/10/2010

FISCAL NOTE

STATE OF ALASKA
2010 LEGISLATIVE SESSION

Fiscal Note Number: 10
 Bill Version: CSSB 220(FIN)
 (S) Publish Date: 4/10/10

Identifier (file name): CSSB220(FIN)-REV-AHFC-4-9-10 Dept. Affected: Revenue
 Title: ENERGY EFFICIENCY/ ALTERNATIVE ENERGY RDU: Alaska Housing Finance Corp.
 Component: Operations
 Sponsor: Senate Resources Committee
 Requester: Senate Finance Committee Component Number: 110

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2011	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
OPERATING EXPENDITURES								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
TOTAL OPERATING		0.0	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES								
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CHANGE IN REVENUES ()								
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts								
1003 GF Match								
1004 GF								
1005 GF/Program Receipts								
1037 GF/Mental Health								
Other Interagency Receipts								
TOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2010) cost: _____

POSITIONS

Full-time								
Part-time								
Temporary								

ANALYSIS: (Attach a separate page if necessary)
 CS for Senate Bill 220(FIN) includes language that will set up an energy efficiency revolving loan fund and authorize the Alaska Housing Finance Corporation to sell up to \$250 million in bonds to fund the program.
 Costs associated with the issuance of these bonds are anticipated to be covered with annual operating budget authorizations. Operational costs for issuing and monitoring these bonds will be done with existing personnel and within the authorized operating budget for FY11 and beyond.

Prepared by: Bryan Butcher, Director, Governmental Relations/Public Affairs Phone 330-8445
 Division: Alaska Housing Finance Corporation Date/Time 4/9/10 12:00 AM
 Approved by: Ginger Blaisdell, Director Date 04-09-10; 6:42pm
Administrative Services Division, Department of Revenue

SB220

Alaska Division of Investments
 Department of Commerce, Community, & Economic Development
 Alternative Energy Revolving Loan Fund
 Projected Operating Expenses

Position	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Accounting Technician & Loan Officer I										
Pers Serv	\$ 130,695	\$ 130,695	\$ 130,695	\$ 130,695	\$ 130,695	\$ 130,695	\$ 130,695	\$ 130,695	\$ 130,695	\$ 130,695
Travel	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500
Contractual	\$ 21,282	\$ 19,422	\$ 19,422	\$ 19,422	\$ 19,422	\$ 19,422	\$ 19,422	\$ 19,422	\$ 19,422	\$ 19,422
Supplies	\$ 1,025	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
Equipment**	\$ 4,800	\$ 200	\$ 200	\$ 2,200	\$ 200	\$ 1,100	\$ 200	\$ 2,200	\$ 200	\$ 200
Total	\$ 160,302	\$ 153,817	\$ 153,817	\$ 155,817	\$ 153,817	\$ 154,717	\$ 153,817	\$ 155,817	\$ 153,817	\$ 153,817

Contractual Services Annual per PCN: \$ 9,711
 Department of Law - Regs. \$ 1,260
 Regulations Newspapers \$ 600
 \$ 11,571

Supplies Annual per PCN \$ 500
 Regulations Supplies \$ 25
 \$ 525

**Equipment: Chair \$ 700
 Monitor \$ 450 Replace monitor every five years.
 Computer \$ 1,000 Replace computer every three years.
 Printer \$ 250
 \$ 2,400

Total	\$ 160,302	\$ 153,817	\$ 153,817	\$ 155,817	\$ 153,817	\$ 154,717	\$ 153,817	\$ 155,817	\$ 153,817	\$ 153,817
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Alaska Division of Investments
 Department of Commerce, Community, & Economic Development
 Alternative Energy Revolving Loan Fund - Commercial Buildings
 Earnings Projections - 10 Million Capitalization

Fiscal Year	Interest Repayments	Late Fees	Other Fees	Earnings Retained in Fund	Total Revenue/Earnings	Less Delinquency Loss on Loans	Change in Revenue Total Revenue Less Delinquency	Less Operating Expense	Net Gain
FY11	127,500	15,350	8,500	310,553	461,902	(7,675)	454,227	(160,302)	293,925
FY12	246,025	30,699	8,500	239,138	524,362	(15,350)	509,013	(153,817)	355,196
FY13	355,128	46,049	8,500	177,109	586,785	(23,024)	563,761	(153,817)	409,944
FY14	454,335	61,398	8,500	125,690	649,924	(30,699)	619,224	(155,817)	463,407
FY15	543,154	76,748	8,500	84,882	713,283	(38,374)	674,909	(153,817)	521,092
FY16	621,063	92,098	8,500	55,500	777,160	(46,049)	731,112	(154,717)	576,395
FY17	687,519	107,447	8,500	37,748	841,214	(53,724)	787,490	(153,817)	633,673
FY18	741,948	122,797	8,500	31,831	905,075	(61,398)	843,677	(155,817)	687,860
FY19	783,749	138,146	8,500	25,709	956,104	(69,073)	887,031	(153,817)	733,214
FY20	812,290	153,496	8,500	58,438	1,032,723	(76,748)	955,975	(153,817)	802,158
Totals	\$ 5,372,710	\$ 844,227	\$ 85,000	\$ 1,146,596	\$ 7,448,533	\$ (422,114)	\$ 7,026,420	\$ (1,549,555)	\$ 5,476,865

Alaska Division of Investments
 Department of Commerce, Community, & Economic Development
 Alternative Energy Revolving Loan Fund - Commercial Buildings
 Cash Flow Projections - 10 Million Capitalization

Fiscal Year	Beginning Fund Balance	Operating Expense	New Loan Demand	Loan Payments		Retained Earnings	Late Fees Estimated 5% of Debt Owed	\$50 Origination Fee	\$50 New Loan App Fee	Uncollectible Amount 2.5% of Delinquent Debt Due	Fund Balance
				Interest	Principal						
FY11	10,000,000	(160,302)	(2,550,000)	127,500	179,492	310,553	15,350	4,250	4,250	(7,675)	7,923,417
FY12	7,923,417	(153,817)	(2,550,000)	246,025	367,958	239,138	30,699	4,250	4,250	(15,350)	6,096,571
FY13	6,096,571	(153,817)	(2,550,000)	355,128	565,848	177,109	46,049	4,250	4,250	(23,024)	4,522,362
FY14	4,522,362	(155,817)	(2,550,000)	454,335	773,632	125,690	61,398	4,250	4,250	(30,699)	3,209,401
FY15	3,209,401	(153,817)	(2,550,000)	543,154	991,805	84,882	76,748	4,250	4,250	(38,374)	2,172,298
FY16	2,172,298	(154,717)	(2,550,000)	621,063	1,220,887	55,500	92,098	4,250	4,250	(46,049)	1,419,579
FY17	1,419,579	(153,817)	(2,550,000)	687,519	1,461,423	37,748	107,447	4,250	4,250	(53,724)	964,675
FY18	964,675	(155,817)	(2,550,000)	741,948	1,713,986	31,831	122,797	4,250	4,250	(61,398)	816,520
FY19	816,520	(153,817)	(2,550,000)	783,749	1,979,176	25,709	138,146	4,250	4,250	(69,073)	978,911
FY20	978,911	(153,817)	(2,550,000)	812,290	2,257,627	58,438	153,496	4,250	4,250	(76,748)	1,488,696
Totals		\$ (1,549,555)	\$ (25,500,000)	\$ 5,372,710	\$ 11,511,832	\$ 1,146,596	\$ 844,227	\$ 42,500	\$ 42,500	\$ (422,114)	

FY11-20 \$2,550,000 loan demand, 5% interest rate, 11 yr. term, 2.5% of delinquent debt may be uncollectible.
 Average \$30,000 per loan, 11 year term, \$50 application fee, \$50 origination fee, late fee is 5% of delinquent payment.

Fiscal Year	Loan Demand	Average Loan Amount (rounded)	Number of Loans Per Year
FY11	2,550,000	30,000	85
FY12	2,550,000	30,000	85
FY13	2,550,000	30,000	85
FY14	2,550,000	30,000	85
FY15	2,550,000	30,000	85
FY16	2,550,000	30,000	85
FY17	2,550,000	30,000	85
FY18	2,550,000	30,000	85
FY19	2,550,000	30,000	85
FY20	2,550,000	30,000	85
\$	25,500,000		850

GeFonsi - Estimated earnings to remain in fund.
 Average earnings for the past 5 years: 4%

FY11	Average Cash Balance	7,610,000
FY12	Average Cash Balance	5,860,000
FY13	Average Cash Balance	4,340,000
FY14	Average Cash Balance	3,080,000
FY15	Average Cash Balance	2,080,000
FY16	Average Cash Balance	1,360,000
FY17	Average Cash Balance	925,000
FY18	Average Cash Balance	780,000
FY19	Average Cash Balance	630,000
FY20	Average Cash Balance	1,432,000

Alaska Division of Investments
 Department of Commerce, Community, & Economic Development
 Alternative Energy Revolving Loan Fund - Commercial Buildings
 Earnings Projections - 5 Million Capitalization

Fiscal Year	Interest Repayments	Late Fees	Other Fees	Earnings Retained in Fund	Total Revenue/Earnings	Less Delinquency-Loss on Loans	Change in Revenue Total Revenue Less Delinquency	Less Operating Expense	Net Gain
FY11	127,500	15,350	8,500	106,102	257,452	(7,675)	249,777	(160,302)	89,475
FY12	216,025	27,088	6,500	44,889	294,502	(13,544)	280,958	(153,817)	127,141
FY13	244,739	32,505	3,000	34,687	314,931	(16,253)	298,679	(153,817)	144,862
FY14	269,471	37,923	3,000	26,526	336,919	(18,961)	317,958	(155,817)	162,141
FY15	290,022	43,340	3,000	23,261	359,623	(21,670)	337,953	(153,817)	184,136
FY16	306,183	48,758	3,000	24,893	382,834	(24,379)	358,455	(154,717)	203,738
FY17	317,735	54,175	3,000	26,117	401,027	(27,088)	373,940	(153,817)	220,123
FY18	324,447	59,593	3,000	44,889	431,929	(29,796)	402,132	(155,817)	246,315
FY19	281,077	59,593	3,000	57,948	401,617	(29,796)	371,821	(153,817)	218,004
FY20	235,538	59,593	3,000	71,823	369,953	(29,796)	340,157	(153,817)	186,340
Totals	\$ 2,612,737	\$ 437,915	\$ 39,000	\$ 461,136	\$ 3,550,788	\$ (218,957)	\$ 3,331,830	\$ (1,549,555)	\$ 1,782,275

Alaska Division of Investments
 Department of Commerce, Community, & Economic Development
 Alternative Energy Revolving Loan Fund - Commercial Buildings
Cash Flow Projections - 5 Million Capitalization

Fiscal Year	Beginning Fund Balance	Operating Expense	New Loan Demand	Loan Payments		Retained Earnings	Late Fees Estimated 5% of Debt Owed	\$50 Origination Fee	\$50 New Loan App Fee	Uncollectible Amount 2.5% of Delinquent Debt Due	Fund Balance
				Interest	Principal						
FY11	5,000,000	(160,302)	(2,550,000)	127,500	179,492	106,102	15,350	4,250	4,250	(7,675)	2,718,967
FY12	2,718,967	(153,817)	(1,950,000)	216,025	325,725	44,889	27,088	3,250	3,250	(13,544)	1,221,833
FY13	1,221,833	(153,817)	(900,000)	244,739	405,361	34,687	32,505	1,500	1,500	(16,253)	872,055
FY14	872,055	(155,817)	(900,000)	269,471	488,979	26,526	37,923	1,500	1,500	(18,961)	623,175
FY15	623,175	(153,817)	(900,000)	290,022	576,778	23,261	43,340	1,500	1,500	(21,670)	484,089
FY16	484,089	(154,717)	(900,000)	306,183	668,967	24,893	48,758	1,500	1,500	(24,379)	456,794
FY17	456,794	(153,817)	(900,000)	317,735	765,765	26,117	54,175	1,500	1,500	(27,088)	542,682
FY18	542,682	(155,817)	(900,000)	324,447	867,403	44,889	59,593	1,500	1,500	(29,796)	756,400
FY19	756,400	(153,817)	(900,000)	281,077	910,773	57,948	59,593	1,500	1,500	(29,796)	985,178
FY20	985,178	(153,817)	(900,000)	235,538	956,312	71,823	59,593	1,500	1,500	(29,796)	1,227,830
Totals		\$(1,549,555)	\$(11,700,000)	\$ 2,612,737	\$ 6,145,554	\$ 461,136	\$ 437,915	\$ 19,500	\$ 19,500	\$ (218,957)	

FY11 \$2,550,000 loan demand, 5% interest rate, 11 yr. term, 2.5% of delinquent debt may be uncollectible.
 FY12 \$1,950,000 loan demand, 5% interest rate, 11 yr. term, 2.5% of delinquent debt may be uncollectible.
 FY13-20 \$900,000 loan demand, 5% interest rate, 11 yr. term, 2.5% of delinquent debt may be uncollectible.
 Average \$30,000 per loan, 11 year term, \$50 application fee, \$50 origination fee, late fee is 5% of delinquent payment.

Fiscal Year	Loan Demand	Average Loan Amount (rounded)	Number of Loans Per Year
FY11	2,550,000	30,000	85
FY12	1,950,000	30,000	65
FY13	900,000	30,000	30
FY14	900,000	30,000	30
FY15	900,000	30,000	30
FY16	900,000	30,000	30
FY17	900,000	30,000	30
FY18	900,000	30,000	30
FY19	900,000	30,000	30
FY20	900,000	30,000	30
\$	11,700,000		390

Gefonsi - Estimated earnings to remain in fund.
 Average earnings past 5 years: 4%.

FY11	Average Cash Balance	2,600,000
FY12	Average Cash Balance	1,100,000
FY13	Average Cash Balance	850,000
FY14	Average Cash Balance	650,000
FY15	Average Cash Balance	570,000
FY16	Average Cash Balance	610,000
FY17	Average Cash Balance	640,000
FY18	Average Cash Balance	1,100,000
FY19	Average Cash Balance	1,420,000
FY20	Average Cash Balance	1,760,000

**Attachment A
State of Alaska ESCP Summary**

Phase One		ESPC Contract Value	Payback Term	Guaranteed Year One Monetized Savings	Reported Year One Monetized Savings	Reported Year Two Monetized Savings	Reported Year Three Monetized Savings
Facility	Agency	Location	Square Footage				
1 State Office Building	DOA	Juneau	214,426				
2 Alaska Office Building	DOA	Juneau	57,652				
3 Court Plaza Building	DOA	Juneau	40,128				
4 Douglas Island Building	DOA	Juneau	41,974				
5 Diamond Courthouse	DOA	Juneau	79,116				
6 Dimond Building	DOT&PF	Anchorage	63,000				
7 Annex Building	DOT&PF	Anchorage	24,000				
8 Public Safety Building	DOT&PF	Anchorage	43,000				
Summary				\$ 4,030,116.00	12 years	\$ 277,857.00	\$ 365,991.00
						\$ 561,935.00	\$ 570,797.00
Phase Two							
Facility	Agency	Location	Square Footage				
9 Anchorage Correctional Center	DOC	Anchorage	296,089				
10 Spring Creek Correctional Facility	DOC	Seward	205,952				
11 Fairbanks CC	DOC	Fairbanks	93,700				
12 Wildwood CC	DOC	Kenai	174,153				
13 Lemmon Creek CC	DOC	Juneau	83,368				
14 Hilland Mill/Meadow Creek CC	DOC	Eagle River	147,191				
15 Anvil Mt. CC	DOC	Nome	33,475				
16 Yukon-Kushokwim CC	DOC	Bethel	25,320				
Summary				\$ 9,010,700.00	15 years	\$ 660,000.00	TBD
Facility	Agency	Location	Square Footage				
17 Anchorage Pioneer Home	DH&SS	Anchorage	150,366				
18 McLaughlin Youth Facility	DH&SS	Anchorage	145,113				
19 Sitka Pioneer Home	DH&SS	Sitka	83,121				
20 Palmer Pioneer Home	DH&SS	Palmer	70,066				
21 Fairbanks Pioneer Home	DH&SS	Fairbanks	59,361				
22 Fairbanks Youth Facility	DH&SS	Fairbanks	55,015				
23 Juneau Pioneer Home	DH&SS	Juneau	42,444				
24 Anchorage Public Health Lab	DH&SS	Anchorage	37,000				
Summary				\$ 128,500.00	N/A*		

*DHSS elected to end the ESCP contract after the energy audit was completed. They believed that they could implement the ECM's through traditional contracting methods for less than the ESCO's proposed cost.



The measured energy and water savings for the Facility Improvement Measures (FIM's) installed provide \$576,956 in actual cost avoidance savings in the third annual year report.

The total guaranteed annual energy savings and the measured energy savings are summarized in Tables A & B below:

Table A

	Original Contract Guaranteed Annual Energy Savings	Reported Measured Savings (Year 3)
Electrical Consumption (kWh)	2,211,605	2,722,793
Electrical Demand (kW)	322	437
Natural Gas (Therms)	11,168	15,820
Fuel Oil (Gal)	70,216	93,453
Water (Gal)	2,409,000	2,923,000

The annual cost avoidance and operational savings from the water fixture replacements as defined in the original contract guarantee is reported in the table below:

Table B

	Original Annual Energy Savings (Cost Avoidance) *	Reported Cost Avoidance (Year 3)**
Energy & Utility Savings	\$284,228	\$563,922
Operational Savings	\$13,034	\$13,034
Total	\$297,262	\$576,956

**Cost Avoidance calculated using the escalated 2003-2005 base year utility rates*

***Reported Cost Avoidance calculated using the 2008-2009 3rd year utility performance period rates.*

Per the contract, the utility rate used for savings calculations was based on the utility rate currently in effect or the baseline utility rate escalated per the contract whichever is greater. An escalation rate of 3.5% per annual period was applied to the utility rates and an escalation rate of 2.0% per annual period was applied to the operational savings.

ALASKA'S CURRENT HEATING ASSISTANCE PROGRAMS

LOW INCOME HEATING AND ENERGY ASSISTANCE PROGRAM (LIHEAP)

- Serves individuals to 150% of federal poverty level
- Eligibility limit is \$41,355 for family of four
- Current Federal appropriation is \$27.6 million

ALASKA HEATING ASSISTANCE PROGRAM (AKHAP)

- Serves individuals to 225% of federal poverty level
- Eligibility limit is \$63,032 for a family of four
- Current State appropriation is \$5 million

Prepared by Jay Livey;
from the Office of Senator Lyman Hoffman
updated 2/19/2010

Objective:

To make Alaska's heating assistance programs more responsive to a family's actual heating costs by increasing the amount of assistance.

To make changes to the administration of Alaska's heating programs to emphasize the focus on these individual's costs.

Principles

Statewide Approach

Use Existing Administrative Structure

Make the Program Responsive to Fuel Costs

Establish an incentive for weatherization

Prepared by Jay Livey;
from the Office of Senator Lyman Hoffman
updated 2/19/2010

Program Operations

Individuals apply each year

Applications contain information used to assign appropriate points to each applicant

Department estimates the cumulative number of points they will receive in a given year

Department divides the available appropriations by the total number of points to get a dollar value per point

This dollar value is used to determine initial level of assistance for each applicant

The assistance is credited to a vendor of the applicants choosing and the assistance is applied to the individual account.

Points

Based on the information provided in each application, the number of points is determined for each applicant

Points are based on the following variables:

Household Income

Heating Degree Days in the applicant location

Type of and cost of fuel used for heat

Type of house in which the applicant lives

Size of house in which the applicant lives

If children, elderly or people experiencing a disability are in the home

Prepared by Jay Livey;
from the Office of Senator Lyman Hoffman
updated 2/19/2010

Sample Point Calculation

Toksook Bay: Community and Fuel	21 points
2 bedroom house (no adjustment)	0 points
76% to 100% of poverty (.80 *21)	(4.2) POINTS
Household contains children	1 point
Total (Rounded up)	18 Points

Fairbanks: Community and Fuel	10 points
2 bedroom (no adjustment)	0 points
126% to 150% of poverty (.50*10)	(5) points
House hold includes elderly	1 point
Total (Rounded up)	6 Points

Current Assistance

\$115 per point * 18 points =	\$2070
\$115 per point * 6 points	\$690

Prepared by Jay Livey;
from the Office of Senator Lyman Hoffman
updated 2/19/2010

Current Heating Cost (Estimate)

600 gallons * \$6.08	\$3648
600 gallons * \$3.07	\$1842

Per Cent of Need

Toksook Bay	(\$2070/\$3648)	58%
Fairbanks	(\$690/\$1842)	37%

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from the Office of Senator Lyman Hoffman
updated 2/19/2010

Amendment Changes

Section 21. Changes the name of the Alaska Heating Assistance Program to the Alaska Affordable Heating Program.

Section 22. Establishes the Alaska affordable heating fund in the Department of Revenue. This section allows appropriations from the fund to be used to pay for the affordable heating program.

Section 23. Conforms existing law to name change.

Section 24. Links the eligibility for the program to the price of a barrel of crude oil. If the price of a barrel of crude oil exceeds \$150 per barrel, the eligibility of the program increases from the current eligibility ceiling of 225 per cent of poverty to 250 percent of poverty. This recognizes the increased cost of fuel that will affect Alaska families at higher costs of oil.

>225% of poverty is \$62,032 (family of four)

>250% of poverty is \$68,925 (family of four)

Section 25.

(1) This section makes changes to the way in which benefits are determined. Currently, benefits are calculated by multiplying families' points by the dollar per point. Remember that the dollar per point is calculated by dividing the appropriation by the estimated number of points. This amendment changes that focus. First a families' assistance is determined from a prescribed level of need.

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from the Office of Senator Lyman Hoffman
updated 2/19/2010

Then, Federal appropriations are used to fill that need. If they are insufficient or can't be used (depending on a person's income) State funds are used.

(2) Also, this section links the assistance for a family to the price of oil. As the price of a barrel of crude oil increases, so does the dollar value of a point. So we more closely link the amount of assistance to the families heating cost. The relationship between the crude oil price and the dollar per point is:

>\$130 /point when crude is less than \$75/ barrel

>\$140 /point when crude is more than \$75 but not more than \$100/ barrel

>\$150 /point when crude is more than \$100 but not more than \$150/ barrel

>\$165 /point when crude is more than \$150/barrel

(3) Additionally, we move the starting value for a point from the current \$115 to \$130. This recognizes a family's higher assistance need.

(4) This section also provides a one point incentive to families that have applied to the weatherization program

(5) Finally, this section gives authority to the Department of Health and Social Services to pro-rate assistance payments if insufficient appropriations are not available to cover the full program cost.

Section 26, 27 and 28. Name changes to current statute.

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from the Office of Senator Lyman Hoffman
updated 2/19/2010

Result of Amendments

Toksook Bay:

Assistance at \$130 / point *18	\$2340
Heating cost (600 gal*6.08)	\$3648
Per cent of actual cost (\$2340/\$3648)	64%

Assistance at \$140 /point*18	\$2520
Heating Cost (600*\$6.50)	\$3900
Per cent of actual cost (\$2540/\$3900)	65%

Fairbanks

Assistance at \$130 / point *6	\$780
Heating cost (600 gal*\$3.07)	\$1842
Per cent of actual cost (\$780/\$1842)	42%

Assistance at \$140/point*6	\$840
Heating cost (600 gal*\$3.25)	\$1950
Per cent of actual cost (\$840/\$1950)	43%

Prepared by Jay Livey;
from the Office of Senator Lyman Hoffman
updated 2/19/2010

Denali Commission Emerging Energy Technology Grant: Final Project Descriptions

Alaska Sealife Center: Seawater Heat Pump Demonstration Project

The Alaska SeaLife Center's overall goal for this project is to demonstrate a heat pump system that will "lift" latent heat from raw seawater and transfer the energy into building heat.

Cordova Electric Cooperative: Psychrophiles for Generating Heating Gas

This research and application project will deploy the use of psychrophiles (cold loving microbes) to improve efficiency in biogas digestors for generating cooking and heating gas for Alaskan households. The first phase will compare the efficiencies of mesophiles (conventional digester microbes) and psychrophiles on common household and rural Alaska feedstock at various temperatures. The second phase will deploy digester(s) in practical household scale project(s) to operate appliance and an electrical generator to evaluate feasibility and sustainability in an applied setting for widespread use in Alaska.

Kotzebue Electric Association: Feasibility of Solar Hot Water Systems

Assess the feasibility of solar hot water heating systems on residential units in the NANA region.

Kotzebue Electric Association: Flow Battery Energy Storage Systems

Analyze and demonstrate flow battery systems and their potential for energy storage in rural wind systems.

Kotzebue Electric Association: Wales Diesel-Off High Penetration Wind System

Retrofit the Wales Wind-Diesel Hybrid Power System by adding remote web access monitoring and control systems, getting the two Entegry turbines back online and allowing for increased data logging capabilities and developing long term operations and maintenance strategies for replicating diesel-off configurations in other communities. Kotzebue Electric Association's overall goal for this project is to demonstrate diesel-off configuration for a remote wind-diesel hybrid power system through the retrofit of existing equipment and controls.

Ocean Renewable Power Corporation: Nenana Hydrokinetic Turbine

Build, install and test the RivGen™ Power System, a hydrokinetic energy unit, at the Nenana hydrokinetic test bed, and analyze resource and technology results.

Sealaska Corporation: Commercial Scale Wood Pellet Fired Boiler

This project will convert Sealaska's corporate headquarters building from a diesel fired boiler to a wood pellet fired boiler. The overall goal of this project is to demonstrate that wood heat can be cost effective and feasible for larger commercial, industrial, and municipal buildings, and has the potential to effect demand for Southeast Alaska second growth wood fiber.

Tanana Chiefs Conference: Organic Rankine Cycle Heat Recovery System

Tanana Chiefs Conference's goal for this project is to demonstrate the potential improved fuel efficiency of the diesel power plant in a village in the TCC region through the use of an Organic Rankine Cycle (ORC) system for heat recovery from engine jacket water and exhaust.

University of Alaska Fairbanks, WIDAC: High Penetration Hybrid Power System

The Wind Diesel Application Center will analyze state of the art power electronics to assess options for wind-diesel hybrid power systems to operate in a diesel-off mode.

EMERGING ENERGY TECHNOLOGY: A GLOBAL OPPORTUNITY FOR ALASKA

Alaska has the opportunity to be a world leader in developing, optimizing and exporting renewable energy technology. The state is uniquely situated to capitalize on the growing market for new energy technologies, particularly clean energy technologies for the developing world. Because energy prices are so high in rural Alaska, we can *both* demonstrate technology *and* begin to save money for local residents immediately. Recognizing that Alaska can be a laboratory for testing new energy technology will lead to outside investments in our state and keep Alaska competitive in the increasingly competitive world economy.

More than 150 of Alaska's 350 communities are in remote rural areas without roads or grid-connected power, and suffer from high energy prices that handicap their economies.

LET'S CONNECT THE DOTS

Nearly 1.6 billion people, about 25% of the world's population, live without access to electricity, and are looking for ways to energize their communities.

Investment in clean energy worldwide is currently about a \$155 billion a year business that is projected to grow exponentially in the coming years. Alaska's high energy costs, abundant renewable energy resources, remote locations and challenging climate make it ideal for researching and developing emerging energy technologies that can help stabilize energy costs for Alaskans *and* be exported to communities in the developing world that lack electricity.



EMERGING TECHNOLOGY FOR ALASKA'S FUTURE

There is currently no state program dedicated to supporting emerging energy technologies. Alaska has the Renewable Energy Grant Fund, but it is directed at mature technologies. Emerging technologies such as tidal power and biomass gasification need more testing and development in order to become commercially available. Strategically investing in an Emerging Energy Technology Fund today will position Alaska to:

- Provide relief for communities in rural Alaska crippled by high energy prices
- Attract innovative technology companies to the state
- Create high-tech jobs
- Develop Alaska's university programs through private partnerships
- Give Alaska an advantage when competing with other states for federal funding programs for green industry and job development
- Capitalize on growing worldwide demand for energy, particularly clean energy which in 2008 was estimated at \$155 billion/year business
- Become a leader in developing energy technologies, particularly small-scale technologies that can be exported to remote communities around the developing world

Legislation currently pending would establish an Emerging Energy Technology Fund to be administered by the Alaska Energy Authority. The fund would be financed by appropriations from the state legislature, federal appropriations, and contributions from other sources and would be available to utilities, independent power producers, local and tribal governments, Alaskan businesses, and non-profits. In order to receive grants from the fund, the benefiting project would need to be for the research, development, or demonstration of a new energy or conservation technology or for the improvement of an existing technology, with the reasonable expectation the technology would be commercially viable within 5 years.

Examples of Emerging Technology in Alaska

- Tidal power
- Wave power
- Biomass gasification
- High-penetration wind-diesel systems
- In-river hydrokinetics
- Next generation energy storage technology

ALASKA MARKET FOR EMERGING TECHNOLOGY

In 2009, the Denali Commission solicited proposals for emerging energy technology projects. Fifty proposals totaling \$29 million were submitted, from which nine were selected to receive \$4 million in grants. The Commission's goal was to develop emerging energy technology that has the potential of widespread deployment in Alaska and has the long-term goal of reducing energy costs for Alaskans. The robust response to the Commission's request for proposals highlights the need for an emerging energy technology fund. The projects listed below were among those selected by the Commission and are examples of types of technology that could benefit Alaskans.

ALASKA SEALIFE CENTER: SEAWATER HEAT PUMP DEMONSTRATION PROJECT

The Alaska SeaLife Center proposes to employ a heat pump system that will "lift" latent heat from raw seawater at temperatures ranging from 35F to 55F, and transfer this heat energy into building heat at a temperature of 120F. Sea water would first be pumped through a heat exchanger containing propylene glycol, an antifreeze commonly used in northern latitude commercial and residential heating systems. The glycol, warmed by the seawater, will boil a refrigerant that would go to an electric-powered compressor. In the compressor, the refrigerant vapor will be heated through pressurization. The refrigerant will then be condensed by giving up this heat to a second glycol loop that circulates to the building's heating system at 120F. While this technology has been successfully deployed in Norway and Sweden, this innovative process of removing latent heat from seawater and using it to heat buildings has not yet been tested in Alaska.

CORDOVA ELECTRIC COOPERATIVE: PSYCHROPHILES FOR GENERATING HEATING GAS

This research and application project will deploy the use of psychrophiles (cold-loving microbes) to improve efficiency in biogas digestors for generating cooking and heating gas for Alaskan households. Biogas digester technology is proven and in widespread implementation in India and China, with emerging efforts in Africa, California, and Europe. The technology is based on the biological production of methane by archeal microbes called methanogens, which naturally break down organic feedstock to produce methane. In Alaska, deployment of *cold-region* digestors could be used as a local, renewable energy source for home cooking and heating.

KOTZEBUE ELECTRIC ASSOCIATION (KEA): FLOW BATTERY ENERGY STORAGE SYSTEMS

KEA's goal for this project is to analyze and demonstrate flow battery systems and their potential for energy storage in rural wind-diesel systems. Efficient storage remains a barrier to the optimal deployment of some renewable energy technology in remote areas. Large-scale batteries for wind-diesel systems that could provide village utility grid stabilization and load shifting are currently being developed by several suppliers. If these batteries become commercial products at the price points currently being anticipated, they would provide even more diesel fuel savings in communities with wind resources.

OCEAN RENEWABLE POWER COMPANY (ORPC): NENANA HYDROKINETIC TURBINE

ORPC proposes to build, install and test the RivGen™ Power System, a hydrokinetic energy unit, at the Nenana hydrokinetic test bed and then analyze the resource and technology results. Hydrokinetic devices are placed directly in a river, ocean or tidal current, and generate power from the kinetic energy of moving water. Alaska has significant potential for hydrokinetic development in both rivers and tidal basins. Indeed, most inland communities in Alaska are situated along navigable waterways like the Yukon and Kuskokwim rivers that could host hydrokinetic installations.

WORLDWIDE MARKET

Examples of Emerging Energy Technology Worldwide

Salt Water Power (Osmotic Power): In November 2009, Norway opened the world's first osmotic power generator prototype. The prototype employs a semi-permeable membrane that uses the same principle of osmosis that governs how leaves absorb moisture. The membrane separates fresh water provided by a nearby river from saltwater from the sea. The saltwater molecules in the sea water pull the fresh water through the membrane, increasing the pressure on the sea water side to a level where it is high enough to drive a turbine to generate power. The Norwegian energy company, Statkraft, estimates global potential for osmotic power at more than 1,600 GWh per year. Alaska's freshwater streams and extensive coastline offer great potential for researching and developing osmotic power.

Storing Renewable Energy with Hydrogen: In 2009, Greenland's national energy company, Nukissiorfiit, announced a plan to establish a demonstration hydrogen and fuel cell plant for storing energy created by hydro and wind turbines. With numerous villages relying on diesel generators not connected to a main utility grid, Greenland is similar to Alaska in that in order to implement high-penetration renewable systems, advancement in energy storage technologies is needed.

Thermoelectric-Chalcogenide Based Chips (Heat to Electricity): As a direct result of Texas Emerging Technology Fund, Texas State University is partnering with MicroPower Global to develop thermoelectric-chalcogenide based chips. The chips take heat from an engine and convert it directly to electricity. Ultimately, development of this technology will capture heat from jet engines and convert that waste heat into electricity. This technology could have widespread application in Alaska.

Snow Cooling Plant: Sweden's Sundsvall Regional Hospital was built in 2000 and now meets over 90% of its cooling needs by circulating melted snow. Snow is collected during the winter at Sundsvall, then covered and insulated. As the snow melts, the runoff water is filtered and pumped via a heat exchanger through pipes to hospital buildings where it provides cooling. The warmed water is then routed back to the snow bank to be chilled again. Japan is in the process of constructing a similar plant for the New Chitose Airport in Hokkaido and expects it to be operational by 2010.

Demand for Clean Energy

In 2008, about \$155 billion was invested in clean energy companies and projects around the world. That money was spent on renewable energy projects that tapped wind, solar, micro-hydro, biomass, and geothermal resources. Countries and international banks around the world are making investments in clean energy industries. Some examples of investments made in clean energy in 2009 include:

- A \$9 billion *a month* investment by China on the development of renewable energy.

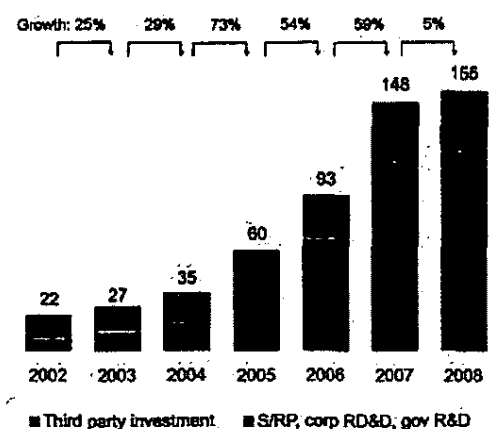
- A \$250 million award to the Philippines from the Clean Technology Fund (CTF) to invest in energy efficiency and renewable energy. The CTF is made up of the Asian Development Bank and the World Bank.

- A \$72.2 million pledge by South Korea to spur renewable energy production. South Korean manufacturing companies are also expected to spend \$3.4 billion in 2010 for clean tech, including research and development, and manufacturing facilities related to solar cells, wind power, and hydrogen fuel cells.

- \$16.8 billion allocated to U.S. Department of Energy's office of Energy Efficiency and Renewable Energy.

- \$350 million pledged by the United States to developing countries for clean energy.

Figure 1: New Investment in Sustainable Energy, 2002-2008
Billion



S/RP = small/residential projects. New investment volume adjusts for re-invested equity. Total values include estimates for undisclosed deals

EXISTING EMERGING TECHNOLOGY FUNDS

Emerging Technology Funds have helped other states, provinces, and countries attract private investment, create jobs, and develop cutting-edge renewable energy technologies. These funds serve as examples of how government investment in innovative research and development creates jobs, fosters entrepreneurship, and increases the quality of life for the community.

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

The authority's aim is to help New York meet its energy goals: reducing energy consumption, promoting the use of renewable energy sources, and protecting the environment. A research and development program supports the development and commercialization of innovative energy and environmental products, technologies, and processes that improve the quality of life for New York's citizens and help New York businesses to compete and grow in the global economy.

CALIFORNIA ENERGY COMMISSION'S PUBLIC INTEREST ENERGY RESEARCH (PIER) PROGRAM

This program supports public interest energy research, development, and demonstration, including in the areas of building efficiency, renewable energy technologies and advance grid technology. The program is funded through surcharges on electricity and natural gas rates and has invested a total of more than \$587 million in innovative energy technologies since inception.

TEXAS EMERGING TECHNOLOGY FUND

Created by legislation in 2005, the \$200 million Texas Emerging Technology Fund (ETF) is designed to create high-tech jobs, and attract private businesses to Texas. The ETF has funded projects from cancer research to developing energy efficient and renewable energy technologies. In 2009, the Small Business and Entrepreneurial Council ranked Texas in the top three states for small business and entrepreneurship.

MICHIGAN EMERGING TECHNOLOGY FUND

The Michigan Emerging Technology Fund is designed to expand funding opportunities for Michigan-based technology companies in the innovation research and development arena.

MASSACHUSETTS EMERGING TECHNOLOGY FUND

The Massachusetts Emerging Technology Fund offers loans to technology companies in the state to finance manufacturing facilities and equipment.

SUSTAINABLE DEVELOPMENT TECHNOLOGY CANADA'S TECH FUND

Established by the government of Canada, this \$550 million fund is one of two aimed at the development and demonstration of innovative technological solutions. It supports projects that address climate change, air quality, clean water and clean soil.

ONTARIO EMERGING TECHNOLOGIES FUND

In 2009, the Canadian Province of Ontario committed \$250 million to the development of an Emerging Technologies Fund for the development of green technologies.

WORLD BANK CLEAN TECHNOLOGY FUND

The fund is one of two Climate Investment Funds that promote scaled-up financing for demonstration, deployment and transfer of low-carbon technologies, including renewable energy, with significant potential for long-term greenhouse gas emissions savings. As of January 2009, twelve countries including the United States had pledged \$5.7 billion to the fund.

LINKS

Senate Bill 150 http://www.legis.state.ak.us/basis/get_bill_text.asp?hsid=SB0150A&session=26

Senate Bill 220 http://www.legis.state.ak.us/basis/get_bill.asp?bill=SB%20220&session=26

House Bill 305 http://www.legis.state.ak.us/basis/get_bill.asp?bill=HB%20305&session=26

Existing Emerging Technology Funds

Texas - http://txed.convio.net/site/PageServer?pagename=tetf_homepage

Michigan - <http://www.mietf.org/Default.aspx>

Massachusetts - www.massdevelopment.com/financing/specialty-loan-programs/emerging-technology-fund/

Ontario - <http://www.ocgc.gov.on.ca/site/en>

Sustainable Development Technology Canada Tech Fund - <http://www.sdte.ca/en/SOInfo.htm>

Masdar Clean Technology Fund - <http://www.masdarctf.com/default.htm>

World Bank Clean Technology Fund - <http://www.climateinvestmentfunds.org/cif/>

Google.org - <http://www.google.org/projects.html>

Denali Commission Emerging Technology Grants

http://www.denali.gov/index.php?option=com_content&view=category&id=1:energy&layout=blog&Itemid=13

World Market for Renewables

General Trends:

<http://sefi.unep.org/english/globaltrends2009.html>

<http://www1.eere.energy.gov/recovery/>

<http://energy.gov/news2009/8391.htm>

China - <http://www.csmonitor.com/Commentary/the-monitors-view/2009/1204/p08s01-comv.html>

Philippines - <http://businessmirror.com.ph/home/economy/19354-multilateral-lenders-endorse-p250m-for-clean-technology-fund-to-doe.html>

South Korea - <http://cleantech.com/news/4113/s-korea-plans-72m-renewable-energy>

Examples of Emerging Technology Worldwide

Osmotic Power - <http://news.bbc.co.uk/2/hi/europe/8377186.stm>

Storing RE with Hydrogen - http://www.newenergy.is/newenergy/upload/files/naha/h2kt_info-sheet-eng.pdf

Thermo-Chalcogenide Based Chips - <http://crc.mse.txstate.edu/newsrelease.html>

Snow Cooling Plant -Sweden - <http://advantage-environment.com/byggnader/stored-snow-for-summer-cooling/>

Snow Cooling Plant - Japan - <http://cleantechnica.com/2008/10/16/airport-will-use-snow-for-30-of-cooling-needs/>