

Alternative Energy and Energy Efficiency Assistance Plan

July 1, 2007 to June 30, 2009



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Introduction

Alaska Energy Authority's (AEA) Alternative Energy and Energy Efficiency programs aim to lower the cost of power and heat to eligible communities while maintaining system safety and reliability. Projects seek to increase efficiency of existing power production and energy end use and to develop alternatives to diesel-based energy technology.

This plan, required under 3 AAC 108.310, describes 1) available funding and funding that AEA plans to request for alternative energy and energy efficiency assistance, 2) the types of assistance that AEA provides and plans to provide, and 3) the criteria for allocating funds.

Note that this plan does not address all of AEA's activities in the area of alternative energy and energy efficiency. Other program activities such as geothermal and tidal energy resource assessment or biodiesel field testing are described at AEA's website: www.akenergyauthority.org. For further information on program activities not covered by this plan, please call Peter Crimp at 269-3000

Energy Cost Reduction

Program Description

The Energy Cost Reduction program, funded chiefly by the Denali Commission, provides grant and loan financing for project proposals that reduce the cost of power and heat in Alaskan communities. The program has been conducted through a competitive request for proposals (RFP). Four RFPs have been released and awarded between 2001 and 2006. AEA plans to release a fifth RFP in late fall 2007.

Funding

Existing

All available grant funding has been allocated to projects. Over the four solicitations, \$8.41 million in grant funding has been awarded for 23 projects costing \$20.79 million. Life cycle savings are estimated at \$40.66 million. Loan financing is available through AEA's Power Project Loan Fund (PPF).

Proposed

AEA has been granted \$3.0 million from the Denali Commission for the fifth Energy Cost Reduction Program solicitation. Further information on how to apply for assistance from this additional funding will be posted on AEA's website when it becomes available.

Criteria for Funding Allocation

Eligibility

1. Power project applicants must be certificated electric utilities or independent power producers. Heat recovery project applicants must be certificated electric

- utilities, independent power producers, or local governments. Energy conservation project applicants must be certificated electric utilities, independent power producers, local governments, or government entities, including tribal councils and housing authorities.
2. Projects must use commercially proven technology and operation procedures.
 3. Projects must be sustainable. The owner must demonstrate plans for proper O&M, sufficient revenues to cover costs, and financial capability to replace the project after its useful life.
 4. Projects must show clear intent to begin implementation within the following year.

Selection Process

AEA staff and contractors perform life cycle cost analysis of 1) the proposed measure, and 2) the status quo base case. Benefit is estimated as the savings of the proposed measure over the status quo. Projects are ranked by Benefit/Cost (B/C) ratios. Projects with B/C greater than or equal to 1 are eligible for loan and grant funding as available from the PPF and Denali Commission respectively.

For eligible projects, normal savings are estimated for the first few years. The maximum amount of debt these savings could support over the life of the project (15-30 yrs depending on project type) is calculated at the current PPF interest rate (currently 4.6%). The local share is half of this amount, while the grant is the remaining project cost.

Local cost-share is mandatory to demonstrate local "buy-in." Cost-share can be in the form of loans from the PPF or other sources, cash contribution, or a combination of loans and cash.

Energy Efficiency Technical Assistance

Program Description

The Energy Efficiency Technical Assistance Program (EETAP) addresses energy efficiency improvements to help communities with high fuel costs reduce fuel consumption to generate power and to heat major facilities. Phase I of EETAP, in progress, has assisted 10-15 communities in evaluating potential energy efficiency measures and in developing information for them to use in applying for grant or loan funding to implement the measures. Examples of possible measures are installation of electronically-controlled diesel generators, recovery of "waste" heat, replacement of inefficient transformers, installation of high-efficiency lighting in community buildings, and replacement and tuning of boiler systems at schools, and other power system generation and distribution improvements and end use efficiency (conservation) measures at major facilities. (This program does not address substitution of diesel fuel with other energy sources that are not already part of the existing energy system.)

Funding

Existing

AEA has allocated \$200,000 toward this program, consisting of

1. \$150,000 in Rebuild America funding (\$100,000 U.S. Department of Energy (USDOE) and \$50,000 AEA capital funds).
2. \$50,000 in State Energy Program funding (\$37,500 USDOE and \$12,500 AEA capital funds.)

All available funding has been allocated.

Proposed

Rebuild America no longer exists. AEA will request additional funds for this program through USDOE's State Energy Program in FY08.

Criteria for Funding Allocation

Eligibility

Eligibility criteria are as follows:

1. The community must have an average residential electric rate of 17.0 cents per kilowatt hour or greater as listed in Table 2.4b of the publication *Alaska Electric Power Statistics 1960-2001*
www.iser.uaa.alaska.edu/Publications/akelectricpowerfinal.pdf
2. Eligible participants are certificated electrical utilities, local governments (including cities, boroughs, and other governmental subdivisions), tribal entities, and State of Alaska agencies. The program does not provide assistance to individual residents or businesses.

Selection Process

Communities are selected through a Request for Statement of Interest to receive assistance as follows:

1. Each eligible entity within a community that is interested in participating in the program submits the following:
 - a. Fuel Cost. The total cost of diesel and other distilled fuels used for power and heating in the latest year.
 - b. Local Match. Local cash match offered for efficiency assessment or measures. Funds from state and federal sources do not qualify as local.
 - c. Other Government Funding. Amount of funding assistance from state or federal government agencies that the entity has received for energy

improvements and assessments within the last five years or expects to receive within the next year. Examples of funding assistance are

- i. Feasibility, design, and construction projects funded by the Denali Commission, Alaska Native Tribal Health Consortium, U.S. Department of Energy, the USDA Rural Development, the U.S. Department of Commerce, and the Village Safe Water and other State of Alaska programs. Rural Power System, Bulk Fuel upgrade programs and major power system improvements.
 - ii. Energy audits funded by the state or federal government.
2. AEA sums the total Fuel Cost, Local Match, and Other Government Funding by community based on the submittals from all facilities included in statements of interest. Submittals are ranked using an index based on total Fuel Cost, Local Match per capita, and Other Government Funding per capita. AEA allocates available funding according to the ranking. In order for a community to increase chances of being selected, it is strongly suggested that interested utilities and facility owners coordinate their responses to the request for statement of interest.

Biofuel Development

Program Description

As part of its fish oil biodiesel development activities, AEA will offer a grant to cost-share development and demonstration of a mobile fish oil rendering module in fall 2007.

The Alaska seafood industry processes approximately 4.4 billion pounds of fish annually, producing approximately 2.2 billion pounds of “waste,” those portions of the fish not processed for human or industrial consumption. Of that waste, approximately 62 percent is discharged into state waters. The discharged fish waste contains an estimated 13 million gallons of unrecovered fish oil.

The intent of this project is to provide grant funding and technical/business support toward the development, construction, and demonstrated operation of a mobile fish oil recovery module. This module will be employed at, and relocated between, multiple existing processing sites thereby increasing its annual utilization and economic return. It is expected that at some processing sites, the fish oil product will be retained and utilized by the host facility and/or community to displace the use of conventional diesel engine or boiler fuels.

Please refer to the Alaska Energy Authority website for more information:

www.akenergyauthority.org.

Funding

Existing

A total of \$188,054 is available in grant financing. Project funding contributors include U.S. Environmental Protection Agency through its West Coast Collaborative Diesel Emissions Reduction Program (\$90,638), AEA capital funds (\$60,545), and University of Alaska Marine Advisory Program (\$36,870). The grant recipient will be required to match grant funding with, at a minimum, \$90,000 in cash or in kind.

Proposed

No additional funding is proposed.

Criteria for Funding Allocation

Eligibility

1. Commercial seafood processor operating in or near Alaska waters with shore-based, at-sea, and/or barge facilities.
2. Alaska community, community/regional organization, utilities, processing group, CDQ group, regional fishing or marketing association within which seafood processing occurs.
3. Any collaborative grouping or partnership of the above, existing or purpose-formed to respond to this RFP.

Selection Process

Grant applications will be ranked according to the following factors

1. Quality of the proposed operating plan and module concept
2. Fuel displacement/fish oil utilization
3. Project readiness & feasibility
4. Qualifications and experience

Rural Energy Conference Travel Stipends

Program Description

Alaska Energy Authority provides stipends to offset costs of travel to the 1½ yearly Alaska Rural Energy Conference. The Conference is scheduled for September 2008, in Southcentral. Depending on available funding travel stipends will be available. In April 2007 stipend allocations were as follows:

<u>Closest Hub City to Point of Origin</u>	<u>Grant Amount</u>
Barrow	\$700
Dutch Harbor/Cold Bay	\$1,000
Kodiak, Dillingham, Fairbanks	\$500

Nome, Kotzebue, Bethel	\$600
King Salmon	\$400
Anchorage	\$200
Juneau, Sitka, and Ketchikan	\$800

Funding

Existing

For the last conference AEA allocated approximately \$30,000 of Denali Commission funds.

Proposed

AEA will request \$30,000 from the Denali Commission or other agencies for the stipend program for the 2008 conference.

Criteria for Funding Allocation

Eligibility

Stipends are available for rural utility managers, tribal and community leaders, power plant and tank farm operators, State of Alaska and federal agencies, University of Alaska and laboratory researchers, and equipment suppliers. Recent recipients of utility projects are encouraged to attend.

Selection Process

Funding is allocated on a first come-first serve basis. Attendance from one community is limited to three individuals. Applications and a detailed description of the selection process will be posed at the AEA website.

Village End Use Efficiency Measures

Program Description

The Village End Use Efficiency Measures (VEUEM) initiative has provided financing for end use efficiency (energy conservation) measures in 31 rural communities that have received bulk fuel facility or power system upgrades funded by the Denali Commission. Work is being completed by a contractor AEA selected through a request for proposal to provide a complete work package to include: furnish and installation of all wiring, fixtures, thermostats, motors, pumps, and necessary electrical and control system modifications to complete the upgrade of the lighting system and mechanical systems at various buildings. Detailed scope was provided for each building.

AEA plans to expand this program into other communities during 2007 and 2008.

Funding

Existing

AEA has currently budgeted \$1.3M in Denali Commission funding for this program.

Proposed

AEA has requested \$1 million from Denali Commission for state FY08.

Criteria for Funding Allocation

Eligibility

Communities that have or will receive bulk fuel facility or power system upgrades funded by the Denali Commission.

Selection Process

Communities are selected by the Denali Commission according to the bulk fuel and power system priority list, available at:

www.denali.gov/Program_Documents.cfm?Section=Energy

Wind Energy Assessment

Program Description

This program, also known as the “anemometer loan program,” provides hardware and technical assistance to assess local wind resources for development of power projects. AEA maintains a fleet of 30 meteorological (met) towers for loan to communities with high potential for wind-generated electrical power that have operators capable of taking possession of the towers and associated wind monitoring equipment, operating the towers and equipment for approximately one year, and returning the towers and equipment in operable condition to AEA. The met towers are approximately 100 feet tall and consist of nesting tube sections, which are guyed to four anchors with steel cable. In fall 2007 AEA plans to obtain 60-80 meter towers that will be available to assess wind resources for potential deployment of larger turbines.

AEA assists in identifying viable sites, installing and removing the towers, and arranging for federal or state authorizations that may be needed for the placement and operation of the towers, and analyzing collected data. The operator must assume liability associated with the installation of the tower and be responsible for acquiring permission from the landowner for placement and operation of the towers for one year. The operator is responsible for visiting the site every month to replace data storage cards and check that the system is operating adequately. The operator is responsible for replacing equipment that is damaged by the operator’s negligence; AEA is responsible for replacing equipment that is damaged for any reason other than the operator’s negligence. All data generated from the project is publicly available. AEA staff and contractors are available to analyze data from met towers to the extent within time and budget constraints.

Funding

Existing

Funding for the wind resource assessment program currently totals \$542,000 (\$495,000 Federal, 47,000 State).

Proposed

AEA has requested \$665,000 from USDOE for Railbelt wind energy assessment and planning activities. AEA has offered a match of \$165,000 in state capital funds.

Criteria for Funding Allocation

Eligibility

Eligible entities are electric utilities, municipalities, Alaska Native villages, and ANCSA corporations.

Selection Process

In the past, because of limited availability of equipment, AEA selected participants competitively through a Request for Statement of Interest. Currently, AEA is providing wind energy assessment assistance as requested by communities due to the greater availability of MET towers. For further information, contact James Jensen at (907) 269-4682 or JJensen@aidea.org.

Wind Energy Development

Program Description

The Wind Energy Development initiative provided two rounds of funding for construction of wind generation systems in rural Alaska funded by a federal earmark through the USDOE and matching state capital funds.

Funding

Existing

Funds totaling \$2.224 M have been made available through this initiative.

Proposed

No further funding requested for FY07 and no additional funding is anticipated.

Criteria for Funding Allocation

Eligibility

Eligibility included local governments (either municipal or tribal), State of Alaska agencies, boroughs and other governmental subdivisions, and certificated electrical utilities. Entities must serve a Power Cost Equalization (PCE) community.

Selection Process

AEA made funds available through a competitive solicitation. Details are posted on AEA website.

Wood Energy Development

Program Description

This program provides funding for assessment, design, and construction of facilities that demonstrate the viable use of wood and/or sawmill waste as a cost-effective way to displace fuel oil for heating schools and other larger facilities in Alaska. Expected benefits will include lower cost, improved or neutral air emissions, local economic development, reduced risk of oil spills, and use of wood waste that may otherwise need to be landfilled.

AEA has provided grant funding to the Juneau Economic Development Council to coordinate feasibility assessment. AEA is providing grant funding to the City of Craig for design and construction of a wood-fired district heating system.

Funding

Existing

Currently AEA has budgeted approximately \$669,674 for existing wood energy activities (\$530,329 USDOE and Denali Commission and \$139,345 AEA capital funds), chiefly construction of the Craig Wood-fired District Heating system and feasibility analyses.

Proposed

No new funding is proposed for wood energy development at this time.

Criteria for Funding Allocation

Eligibility

Eligible parties are local governments (either municipal or tribal), State of Alaska agencies, federal agencies including U.S military installations, public housing authorities, boroughs and other governmental subdivisions, not-for-profit organizations, and certificated electrical utilities.

Selection Process

Projects are selected through Requests for Statements of Interest by the Alaska Wood Energy Development Task Group (Task Group), a coalition of federal and state agencies and other not-for-profit organizations coordinating the State's efforts to explore opportunities to increase the utilization of wood for energy and biofuels production in Alaska.

The Task Group has issued a for assistance for demonstration projects that displace fossil fuels through direct combustion of wood (logs, chunks, chips, bark, sawdust, etc.) for heating schools, other public facilities, and buildings owned and operated by not-for-profit organizations.

The Task Group selected participants based on the following criteria:

1. The opportunity for displacing fuel oil, natural gas, propane or diesel-generated electricity used by targeted facilities for heating needs (i.e., current fuel type, gallons of fuel per year, annual cost per year).
2. Local presence of high-hazard forest fuels and potential for utilizing these fuels for heating schools, other public facilities, and buildings owned and operated by not-for-profit organizations.
3. Availability of local wood processing residues (e.g., sawdust, planer shavings, and slabs).
4. Project cost versus yearly savings (cost-effectiveness).
5. Sustainability of the wood fuel supply.
6. Community support and project advocacy.
7. Ability to implement the project.
8. Ability to operate and maintain the project.