

# Alternative Energy and Energy Efficiency Assistance Plan

July 1, 2005 to June 30, 2007

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Alaska Energy Authority  
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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 <http://www.aidea.org/aea.htm>. 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 provides grant and loan financing for project proposals to reduce the cost of power and heat in Alaskan communities. The program has been conducted through a competitive request for proposals (RFP). Three RFPs have been released and awarded between 2001 and 2004. Depending on availability of funding, AEA plans to release a fourth RFP in fiscal year 2006.

### ***Funding***

#### **Existing**

All available grant funding has been allocated to projects. Over the three solicitations, grant funding totals \$6.75 million for 28 projects costing \$16.01 million. Life cycle savings are estimated at \$32.51 million. Loan financing is available through AEA's Power Project Fund (PPF).

#### **Proposed**

AEA has requested \$2.5 million from the Denali Commission for the Energy Cost Reduction Program. 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 Denali Commission and the PPF.

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 5.45%). 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." Share can be in the form of loans from the PPF or other sources, cash contribution, and 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, will assist 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 by 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**

AEA will request additional funds for this program through USDOE's Rebuild America program in FY06.

## ***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*  
<http://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 (see form below):
  - a. Fuel Cost. The total cost of diesel and other distilled fuels used for power and heating in 2004.
  - 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.

## 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. In FY06, the Conference is scheduled for September 20-22, 2005 in Valdez. Stipends are available on a flat rate 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	\$400

### *Funding*

#### **Existing**

AEA will use up to \$30,000 of State Energy Program (80% USDOE and 20% AEA) funds to supplement requested Denali Commission funds to the extent necessary.

#### **Proposed**

AEA has requested \$30,000 from the Denali Commission for the stipend program.

## ***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 are due September 9.

## **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 17 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.

Depending on available funding, AEA wishes to expand this program into other communities.

### ***Funding***

#### **Existing**

AEA has budgeted \$722,000 in Denali Commission funding for this program.

#### **Proposed**

AEA has requested \$1 million from Denali Commission for FY06.

## ***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

[http://www.denali.gov/Program\\_Documents.cfm?Section=Energy](http://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.

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 totals \$500,000 (\$37,000 AEA capital funds, \$73,000 USDOE, and \$390,000 Denali Commission). Currently \$172,000 in Denali Commission funding remains for FY06 activities.

#### **Proposed**

AEA has requested \$250,000 from the Denali Commission for further activities.

## ***Criteria for Funding Allocation***

### **Eligibility**

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

### **Selection Process**

AEA selected current participants through a Request for Statement of Interest in late 2003. Participants submitted statements of interest (SOI) that included the name, address, telephone, and principal contact of the entity; community name; name of landowner willing to allow placement of MET tower; site description; and a statement demonstrating the qualifications, capabilities, and readiness of the entity to operate a MET tower.

AEA ranked eligible SOIs based on potential life cycle savings, preliminary wind resource quality, and other criteria indicative of a successful project.

AEA plans to release a second Request for SOI in FY06 with expanded eligibility.

## **Wind Energy Development**

### ***Program Description***

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

### ***Funding***

#### **Existing**

No existing funding is available for this initiative.

#### **Proposed**

Funds totaling \$1,500,000 (USDOE, AEA capital funds, and local match requirements) are expected to be available after July 2005.

## ***Criteria for Funding Allocation***

### **Eligibility**

Eligibility will include local governments (either municipal or tribal), State of Alaska agencies, boroughs and other governmental subdivisions, and certificated electrical utilities.

## **Selection Process**

AEA will make funds available through a competitive solicitation. Details will be 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 \$100,000 for wood energy activities (\$84,000 USDOE and \$16,000 AEA capital funds).

#### **Proposed**

During FY06, AEA expects to budget an additional \$349,000 to wood energy development--an additional \$239,000 of federal funds to be matched by \$110,000 in AEA capital funds.

### ***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 by the Alaska Wood Energy Development 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. AEA and the USDA Forest Service are providing funding for this initiative.

In November 2004, the Task Group issued a Request for Statements of Interest 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.

AEA and its partners plan to issue a second Request for SOI in FY06.