# Overview

In June of 2008, the Denali Commission (Commission) released a unique public solicitation entitled the Emerging Energy Technology Grant (EETG). This competitive solicitation, with a total funding opportunity of $4 million, targeted alternative and renewable emerging energy technology proposals from Alaskan applicants. In total, 50 applicants applied to the first round of the solicitation, requesting over $29 million in funding. Of these proposals, 15 were selected for a second round review, with nine proposals eventually being selected for awards.

# Highlights of the EETG

## The Denali Commission

Introduced by Congress in 1998, the Denali Commission is an independent federal agency designed to provide critical utilities, infrastructure, and economic support throughout Alaska. With the creation of the Denali Commission, Congress acknowledged the need for increased inter-agency cooperation and focus on Alaska's remote communities. Since its first meeting in April 1999, the Commission is credited with providing numerous cost-shared infrastructure projects across the State that exemplify effective and efficient partnership between federal and state agencies, and the private sector.

## Development of the EETG

The development of the EETG came from a host of identified needs and gaps in funding availability in Alaska. In particular, the Commission identified that:

* There is no established mechanism within Alaska to fund emerging energy technology projects.
* There is no established mechanism within Alaska to partner with national incentives for emerging energy technology.
* Emerging energy technology is a vital step to the future development of energy independence.
* Emerging energy technology and demonstration projects have a high associated risk of failure, limiting venture capital, loans, or other means of private investment.
* Alaska’s bountiful renewable and alternative energy resources, combined with the acute energy needs of Alaskan communities and accompanying economics, provides a great opportunity for energy technology demonstration.

By nature, emerging energy technology carries must risk for investment. Much focus, therefore, was given to data analysis, collection, reporting, and “lessons learned” for each project, with results being made available to the public. This information will be invaluable for future energy project development, regardless of success or failure of a specific project.

It was intended that the Commission funding would provide seed funding, establishing partnerships, momentum, and a track record for future iterations of the solicitation, or similar funding opportunities.

## SB150

On the State side, there is much movement towards the development of an emerging energy technology fund. Indeed, proposed legislation, Senate Bill 150 (SB150), provided much of the policy framework of the EETG. Specifically, SB150 “…creates a funding mechanism and designates an administrating agency for a competitive grant program aimed at funding projects designed to research and test new energy technologies. It establishes the Emerging Energy Technology Fund (EFFT) to be administered by the Alaska Center for Energy Power, the University of Alaska agency whose mission is to meet state, industry, and federal demand for applied energy research in order to lower the cost of energy throughout Alaska and develop economic opportunities for the state, its residents, and its industries.”[[1]](#footnote-2)

As of 04/06/09, SB150 has been referred to the Senate Finance Committee, and awaits further action once the legislature resumes.

## Eligibility

The intended focus of the EETG was on (1) research, development, or demonstration projects designed to (a) test new energy technologies or methods of conserving energy or (b) improve an existing energy technology; and (2) applied research projects that employ energy technology with a reasonable expectation that the technology will be commercially viable in Alaska in not more than five years. The EETG sought to develop emerging alternative and renewable energy technology that had the potential of widespread deployment in Alaska, and that had the potential to reduce energy costs for Alaskans.

The eligibility requirements of this solicitation were intentionally kept simple and included 1) applicants must meet Commission due diligence and reporting criteria[[2]](#footnote-3), and follow Commission policies[[3]](#footnote-4), 2) eligible projects must primarily focus on alternative or renewable energy and meet the intended funding use, and 3) eligible applicants include: an electric utility holding a certificate of public convenience and necessity under AS 42.05; an independent power producer; a local government, quasi-governmental entity, or other governmental entity, including a tribal council or housing authority; a business holding an Alaska business license; or a nonprofit organization.

For the purposes of defining eligible project scopes, the following definitions were used:

* "**Energy Technology**" means technology that promotes, enhances, or expands the diversity of available energy supply sources or means of transmission, increases energy efficiency, or reduces negative energy-related environmental effects. "Energy Technology" includes technology related to renewable sources of energy, conservation of energy, enabling technologies, efficient and effective use of hydrocarbons, and integrated energy systems.
* “**Renewable Energy**” means energy derived from wind, solar, geothermal, hydrothermal, wave, tidal, river in-stream, or hydropower; low-emission nontoxic biomass based on solid or liquid organic fuels from wood, forest and field residues, or animal or fish products; dedicated energy crops available on a renewable basis; or landfill gas and digester gas.
* “**Alternative Energy**” refers to (1) energy derived from nontraditional sources or the utilization of traditional sources in a new or unconventional manner; (2) the supplementation, integration, or alteration of an energy system with a new or unconventional process that is not typically reliant on traditional fossil fuels.

## Process

Project applications entered a competitive two-round selection process with a review committee of technical and industry experts making selection recommendations to the Commission. In the first round, applicants submitted an abbreviated four-page project proposal summary. The review committee reviewed the proposal summaries and created a short list of applicants for second round consideration. In the second round, selected applicants submitted a robust project proposal and were also required to give a 15 minute presentation, subject to a question-and-answer period by the review committee. Final project selections were made after the second round.[[4]](#footnote-5)

## Partnerships

The intent of this solicitation was cross-cutting and had wide appeal with various funding entities within Alaska and nationally. For this solicitation, the following were partner entities:

* Alaska Energy Authority
* Alaska Industrial Development and Export Authority
* Alaska Power Association
* Denali Commission Energy Advisory Committee
* Denali Commission Energy Program Staff
* National Energy Technology Laboratory
* National Renewable Energy Laboratory

The partners to this solicitation were intentionally selected for their 1) technical expertise in energy technology, 2) their programmatic or institutional interest in developing emerging energy technology, and 3) their institutional perspective. Due to the short time frame of program development and implementation, the Commission was the sole financial backer of this solicitation; the partner entities served as members of the review committee, providing technical advice and selection recommendations to the Commission.

## Program Management

The Alaska Center for Energy and Power (ACEP), an energy research group housed under the Institute of Northern Engineering at the University of Alaska, Fairbanks, is serving as the program manager of the solicitation, and was not involved in the proposal review or selection process. As the project proposals deal with emerging energy technology and by nature are high risk, high reward, ACEP’s technical knowledge and objective academic management of the projects, specifically for data collection, analysis, and reporting, is a vital component to the intent of the solicitation, i.e., providing lessons learned and recommendations.

# EETG Results

## Trends

One overall trend emerged from this solicitation: many of the proposals featured a technology area that has limited funding opportunity, and for other reasons than the technology being an emerging energy technology. Such areas included:

* Waste and energy (solid waste, biomass, other waste, etc.)
* Alaskan applications of proven international technology
* Electric vehicles for rural and Arctic applications

A similar trend was that several applicants, not the technologies, had limited opportunity for funding. For example, the Seward Sealife Center is an aquarium and is restricted from many federal grants, including federal stimulus opportunities.

## First Round Results

Response to the solicitation was extremely positive, with 50 applicants submitting a first round proposal. The total requested funding from the first round was $29.5 million. Of these 50 applicants, 16 were selected for the second round. One applicant withdrew their proposal just prior to the second round deadline, leaving 15 applicants for second round consideration.

## Second Round Results

15 applicants submitted a robust project proposal for second round consideration. Total funding requested was $8.5 million, with total project costs equaling $17.9 million. The $9.4 million in cost share was made up of in-kind, cash, and other grant contributions.

Of these 15 finalists, 9 were selected for grant awards. The results are as follows:

|  |  |
| --- | --- |
| 2009 EETG Grantee | Project Summary |
| Cordova Electric Cooperative | Psychrophiles for Generating Heating Gas |
| Kotzebue Electric Association | Feasibility of Solar Hot Water Systems |
| Kotzebue Electric Association | Flow Battery Energy Storage Systems |
| Kotzebue Electric Association | Wales Diesel-Off High Penetration Wind System |
| ORPC Alaska LLC | Nenana Hydrokinetic Turbine |
| Sealaska Corporation  | Commercial Scale Wood Pellet Fired Boiler |
| Seward Sealife Center | Seawater Heat Pump Demonstration Project |
| Tanana Chiefs Conference | Organic Rankine Cycle Heat Recovery System |
| University of Alaska, Fairbanks | High Penetration Hybrid Power System  |

How is the EETG different from the ….

Is the EETG just for renewable energy projects?

1. Sponsor statement from of the office of Senator Lesil McGuire [↑](#footnote-ref-2)
2. Required due diligence material included: a) Authorization to Request Federal Tax Information, b) Verification of the current business license (if applicable), c) Verification of insurance (if applicable), d) Verification of worker’s compensation or occupational health and safety. [↑](#footnote-ref-3)
3. <http://www.denali.gov/images/announcements/denali20commission20policy20document2011-18-08.pdf> [↑](#footnote-ref-4)
4. This selection process of multiple rounds and presentations is based on a process previously established by the Arctic Energy Technology Development Laboratory (AETDL) [↑](#footnote-ref-5)