

February 2015

Alaska's Emerging Energy Technology Fund

The Alaska State Legislature created the Emerging Energy Technology Fund (EETF) in 2010 to promote the expansion of energy sources available to Alaskans. EETF grants are for demonstration projects of technologies that have a reasonable expectation of becoming commercially viable within five years. Projects can:

- test emerging energy technologies or methods of conserving energy;
- improve an existing technology; or
- deploy an existing technology that has not previously been demonstrated in the state.

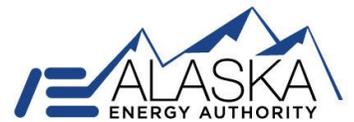
Eligible technologies include those that promote, enhance, or expand the diversity of available energy supply sources or means of transmission, increase energy efficiency, or reduce negative energy-related environmental effects. This includes technologies related to renewable sources of energy, conservation of energy, enabling technologies, efficient and effective use of hydrocarbons, and integrated systems.

Data collection is a central component of all EETF projects. Under an agreement with the University of Alaska, performance data generated is independently verified and analyzed by the Alaska Center for Energy and Power. As project conclude, summary reports and non-sensitive data are made available to the public.

Program Highlights

- **Twenty demonstration projects selected over two funding rounds from an applicant pool of nearly 100**
- **Funded projects include energy storage, wind-diesel integration, and space heating technologies, all key areas of focus in Alaska**
- **Field deployments of 3 river hydrokinetic devices each successfully generating electricity**
- **Diesels off operation of two remote wind-diesel power grids using battery and flywheel energy storage systems**
- **Continued development of in-state technologies, including building efficiency, power electronics, and diesel generation efficiency**
- **Use of technology testbeds made available by the University of Alaska for power systems integration and hydrokinetic testing**

Project funding made available for awards has come from \$6.8 million of state funds, \$4.8 million of federal funds from the Denali Commission, and an additional \$4.7 million in committed match from award recipients and project partners.



Project selection for the EETF program uses a two-stage application process and a volunteer advisory committee appointed by the governor. In the first stage, brief project abstracts submitted in response to a funding solicitation are reviewed by the advisory committee and the Alaska Energy Authority. Select applicants are then invited to submit full applications and give in-person presentations to the committee.

Applications are scored and ranked on a range of criteria including the quality of the innovation, the method of validation, and the public benefit and market potential for the proposed technology. Priority is given to projects demonstrating potential for widespread deployment, partnerships with post-secondary institutions, Alaska entities, and projects committing in-kind or matching funds.

In 2012, 15 projects were awarded over \$8 million in grants in **Round 1** of the Emerging Energy Technology Fund. The state funds available for awards was nearly doubled by a matching contribution by the Denali Commission. A wide range of technologies were selected for funding, including energy storage, building efficiency, biomass, wind generation, and river hydrokinetics.

In 2014, **Round 2** project selections of an additional 5 projects with a focus on energy storage and heating efficiency were announced.

Emerging Energy Technology Fund Advisory Committee

National Renewable Energy Laboratory

Brian Hirsch, Senior Project Leader – NREL Alaska Initiative (Committee Chair)

Alaska Industrial Development and Export Authority

Lori Stender, Project Manager - AIDEA

Arctic Energy Office – National Energy Technology Laboratory

seat currently unfilled

Denali Commission

John MacKinnon, Executive Director - Associated General Contractors of Alaska

Electric Utility

Eric Eriksen, V.P Transmission & Distribution - Alaska Power Association

Fossil Fuel Energy Sector

Stephen Trimble, President – Trimble Strategies, LLC

Renewable Energy Sector

Brent Petrie, President - Petrie and Associates



Emerging Energy Technology Fund Projects Rounds 1 & 2

	Project	Project Lead
Round 1	Application of Composite Flywheels	Hatch
	Arctic Field Testing the Eocycle 25/12 Wind Turbine	Northwest Arctic Borough
	Arctic Thermal Shutters & Doors	Arctic Sun, LLC
	Biomass Reforestation for Boreal Forests	Alaska Division of Forestry
	BRI Cyclo-Turbine Hydrokinetic Demonstration	Boschma Research, Inc.
	Cold Climate Heat Pump Demonstration	Cold Climate Housing Research Center
	Enhanced Condensation for Organic Rankine Cycle	UAF – Inst. of Northern Engineering
	High Capacity Airborne Wind Turbine	Altaeros Energies, Inc.
	High Efficiency Diesel Electric Generator Set	Marsh Creek
	Oceana In-Stream Hydrokinetic Demonstration	Oceana Energy Company
	RivGen Power System Hydrokinetic Demonstration	Ocean Renewable Power Company
	Safe and Efficient Exhaust Thimble	UAF – Inst. of Northern Engineering
	Small Community Self-Regulating Grid	Intelligent Energy Systems
	Ultra-Efficient Generators and Diesel-Electric Propulsion	Genesis Machining & Fabrication
Wind-Diesel Battery Hybrid for Kwigillingok	Intelligent Energy Systems	
Round 2	Air Source Heat Pump Potential in Alaska	Cold Climate Housing Research Center
	Liquid Metal Battery Demonstration	UAF – Inst. of Northern Engineering
	Multi-Stage Energy Storage System	Chugach Electric Association
	St Paul Flywheel Demonstration	TDX Power
	Trans-Critical CO2 Heat Pump System	Alaska SeaLife Center

Additional information is available at AEA’s website, www.akenergyauthority.org.