

## Akutan Geothermal Development Project

<b>Grantees</b>	City of Akutan (Utility-Government)
<b>Technology Type</b>	GEOHERMAL
<b>Region</b>	Aleutians
<b>AEDG Project Code</b>	10147

### REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	246	Hot Springs Bay Valley Geothermal Reconnaissance	2195475	406010	Feasibility	7/1/09	12/31/11	Closed
3	470	Akutan Geothermal Development Project	7030023	406010	Feasibility	7/1/10	6/30/11	Closed
4	621	Akutan Geothermal Development Project 2	7040050	406010	Final Design	7/1/11	6/30/16	Active

### Grant 2195475: Hot Springs Bay Valley Geothermal Reconnaissance

**Project Scope:** The City of Akutan will perform geothermal exploration at the Hot Springs Bay Valley geothermal resource to determine suitable exploratory well locations and drill exploratory wells. The information will then be analyzed to determine the economic feasibility of developing the geothermal resource and to create a business plan to ensure the success of the development.

**Project Status:** The project was completed successfully and the grant has been closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	\$2,595,000.00	\$2,595,000.00
Other State Funding	\$0.00	\$0.00
<b>Total State</b>	<b>\$2,595,000.00</b>	<b>\$2,595,000.00</b>
Required Local Match	\$0.00	\$0.00
Federal Grant Funding	\$0.00	\$0.00
<b>Total Project Costs</b>	<b>\$2,595,000.00</b>	<b>\$2,595,000.00</b>

### Grant 7030023: Akutan Geothermal Development Project

**Project Scope:** The City of Akutan will continue the geothermal exploration project begun under the Round II Renewable Energy Fund grant. The Round III grant will run concurrently with the Round II grant and supplement the Round II grant for the costs associated with exploratory drilling. The focus of the work accomplished in the summer of 2010 will be the completion of two temperature gradient (TG) wells in Hot Springs Bay Valley. The TG wells will provide data for the project team to be able to better characterize the resource both in temperature and extent.

**Project Status:** The project was conducted successfully providing information about the temperature gradient. Well TG4 indicated temperatures of approximately 325 degrees (F) at approximately 1300 feet deep. The grant has been closed and the project will continue under a Round 4 grant for final design and permitting, which will include well site targeting, confirmation well drilling, and flow testing.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	\$173,792.00	\$173,792.00
Other State Funding	\$0.00	\$0.00
<b>Total State</b>	<b>\$173,792.00</b>	<b>\$173,792.00</b>
Required Local Match	\$0.00	\$0.00
Federal Grant Funding	\$0.00	\$0.00
<b>Total Project Costs</b>	<b>\$173,792.00</b>	<b>\$173,792.00</b>

### Grant 7040050: Akutan Geothermal Development Project 2

**Project Scope:** The City of Akutan will use this Renewable Energy Fund (REF) grant as a continuation of the Hot Springs Bay Valley Geothermal Reconnaissance Project, previously funded under Alaska Energy Authority (AEA) REF Grant agreements #2195475 and #7030023. The surface exploration and analysis, a preliminary technical feasibility assessment and an economic assessment were completed in 2009 - 2010. Exploratory drilling of two test wells was completed in August 2010.

This grant is to complete Phase III, final design and permitting. To accomplish this phase, the grantee will create a final system design and cost estimates for access and support infrastructure, sites for production and reinjection wells, pads, pipelines, power plant and transmission lines.

Environmental assessment and permitting will be accomplished for the subsequent construction phase of the project. A Coastal Project Questionnaire (QPT) and Certification Statement will be prepared. The required studies, assessments, and compliance documentation will be processed and provided to the appropriate resource agencies.

Development agreements between the City of Akutan and the Akutan Corporation and Aleut Corporation for rights of way, access, site control, land use, project participation, and royalty/leasing agreements will be negotiated and finalized.

A Power Sales Agreement and potentially a direct investment partnership with Trident Seafood Corporation will be enacted.

The economic and financial analysis will be updated to include the most current information and will be developed into a final business and operational plan.

**Project Status:** In January 2016 Akutan is preparing to drill a 1,500 foot confirmation well in Hot Springs Bay Valley to test water temperatures and flow to confirm a usable resource to provide electricity and/or heat to the City of Akutan. Well site targeting was completed in March 2015. Land access and all state and federal permits and authorizations have been acquired as of October 2015. Due to the flow testing which will pump an estimated 200,000 to 300,000 gallons of water during the late summer flow testing, a retention pond will be built requiring a larger excavator than during the earlier test well drillings. A team scouted and found a barge beach landing area and overland route to bring in the needed heavier excavator which would be too expensive to helicopter lift in. Planning in January 2016 will lead to procurement of contractors in February. Major Drilling, who conducted the past drilling phases and is familiar with the local geotechnical environment, has been hired for the drilling component. Mobilization will take place in July with drilling in August and flow testing and demobilization expected in September. Data analysis will take place October through December 2016.

Additional funding from a US Department of Energy award also supports the drilling costs. Following the drilling phase, an estimated \$425,000 of project funds will remain for final design work.

<b>As of Nov. 30, 2013</b>	<b>Budget</b>	<b>Expenditures</b>
Renewable Energy Funding	\$2,695,000.00	\$1,392,202.24
Other State Funding	\$0.00	\$0.00
<b>Total State</b>	<b>\$2,695,000.00</b>	<b>\$1,392,202.24</b>
Required Local Match	\$355,000.00	\$185,804.10
Federal Grant Funding	\$0.00	\$0.00
<b>Total Project Costs</b>	<b>\$3,050,000.00</b>	<b>\$1,578,006.34</b>