Appendix
Alaska Renewable Energy Fund Status Report
Rounds I-VIII

January 29, 2016

Alaska Energy Data Gateway, developed by the Institute of Social and Economic Research, University of Alaska Anchorage, is supported by the U.S. Department of Energy (DOE), Office of Science, Basic Energy Sciences (BES), under EPSCoR Award # DE-SC0004903 (database and web application development), and by Alaska Energy Authority (Renewable Energy Fund data management and reporting). Database and web hosting is provided by Arctic Region Supercomputing Center, University of Alaska Fairbanks.

Contents

Statewide Hydrokinetic

Grantees	University of Alaska Anchorage (Local Government)
Technology Type	OCEAN/RIVER
Region	Statewide
AEDG Project Code	10088

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	88	Statewide Hydrokinetic Feasibility Study	2195442	407054	Feasibility	8/20/08	6/30/14	Active

Grant 2195442: Statewide Hydrokinetic Feasibility Study

Project Scope: The project will conduct a resource assessment of hydrokinetic energy potential for 29 sites in rural Alaska by collecting and analyzing velocity and bathymetric data. The University will work with various entities with well-established working relationships in rural Alaska to assist with local logistics. Following site selection, student research assistants will be trained in hydrographic surveying and velocity measurement prior to conducting survey work on the selected river sites to obtain bathymetric and current distribution data. Data from the United States Geological Survey (USGS) gauging stations will also be used to estimate long-term hydrologic conditions at the selected rural sites. The long-term velocity/depth distribution data obtained will be used to determine the hydrokinetic energy available for power generation.

Project Status: In the summers of 2009 and 2010, the project, led by the University of Alaska Anchorage, performed field assessments of approximately 25 remote villages along Alaskas rivers. In the summer of 2011, field work was conducted at 4 sites on the Yukon River: Rampart, Stevens Village, Beaver, and Tanana. The field work involved collecting data on water velocity, elevation, and bathymetry/topography. The data collected has been processed and analyzed to determine the potential hydrokinetic power at each of villages during the open-water period and the potential sedimentation changes due to the effects of the turbines. A final overall project report has been complete along with individual site reports for each surveyed location.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$563,101.47	$563,101.47
Other State Funding	$0.00	$0.00
Total State	**$563,101.47**	**$563,101.47**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$563,101.47**	**$563,101.47**

Akutan Geothermal Development Project

Grantees	City of Akutan (Utility-Government)
Technology Type	GEOTHERMAL
Region	Aleutians
AEDG Project Code	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
Total State	**$2,595,000.00**	**$2,595,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,595,000.00**	**$2,595,000.00**

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
Total State	**$173,792.00**	**$173,792.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$173,792.00**	**$173,792.00**

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.

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

Atka Hydro Dispatched Excess Electrical Power

Grantees	City of Atka (Local Government)
Technology Type	HEAT RECOVERY
Region	Aleutians
AEDG Project Code	10294

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	519	Atka Hydro Dispatched Excess Electrical Power	7030001	403039	Final Design	7/1/10	12/31/13	Active
7	1026	Atka Dispatchable Heat	7071026	403039	Construction	7/1/14	12/31/15	Active

Grant 7030001: Atka Hydro Dispatched Excess Electrical Power

Project Scope: The project is to complete the permitting and final design for using excess hydropower for electrical heating of the city, school buildings, and potentially the fish processing facility in Atka. In addition, the design of any necessary upgrades to the distribution system to accommodate the proposed project will also be funded. The equipment "captures the waste energy off a utility system" and dispatches that waste energy to heating systems.

Project Status: The design work under this grant was completed and the grant has been closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$56,702.31	$56,702.31
Other State Funding	$0.00	$0.00
Total State	**$56,702.31**	**$56,702.31**
Required Local Match	$15,883.00	$15,883.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$72,585.31**	**$72,585.31**

Grant 7071026: Atka Dispatchable Heat

Project Scope: City of Atka has requested funding to utilize excess hydroelectric energy from the Chuniisax Creek project to heat seven existing community buildings. The buildings include the health clinic, water treatment plant, tribal office, community building, post office, city shop and public safety buildings.

Project Status: The major portion of the construction (controls integration) was completed in the spring of 2015. The remaining construction will be resumed after the design is revised to provide excess energy utilization for two new community buildings (water treatment plant and City building) in lieu of the buildings planned previously which are smaller and adequately heated already.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$115,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$115,000.00**	**$0.00**
Required Local Match	$20,289.00	$296.09
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$135,289.00**	**$296.09**

Cold Bay Heat Recovery

Grantees	G & K Electric Utility (Independent Power Producer)
Technology Type	HEAT RECOVERY
Region	Aleutians
AEDG Project Code	10083

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	967	Cold Bay Waste Heat Recovery Project	7060967	403069	Feasibility	7/1/13	12/31/16	Active

Grant 7060967: Cold Bay Waste Heat Recovery Project

Project Scope: This grant will fund a feasibility/conceptual design study for the implementation of diesel heat recovery at their existing power plant by G&K Electric Utility. The Grantee has obtained assistance from the Aleutians East Borough (AEB) in the management of the grant. AEB will facilitate calls for solicitation for a contractor to perform the analysis and organize a community meeting with the contractor for presentation, review and discussion of the results.

Project Status: The grant agreement was signed on July 24, 2013. Kickoff meeting held on April 15, 2015 and draft feasibility/concept study submitted for review on July 15, 2015. Review comments were completed and submitted in August. Waiting for corrected copy to be submitted for review prior to submitting final CDR.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$30,000.00	$17,524.50
Other State Funding	$0.00	$0.00
Total State	**$30,000.00**	**$17,524.50**
Required Local Match	$5,000.00	$1,188.75
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$35,000.00**	**$18,713.25**

Saint Paul Fuel Economy Upgrade

Grantees	City of Saint Paul Electric Utility (Utility-Government)
Technology Type	HEAT RECOVERY
Region	Aleutians
AEDG Project Code	10248

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	448	Saint Paul Fuel Economy Upgrade	7030004	403040	Construction	7/1/10	12/31/15	Active

Grant 7030004: Saint Paul Fuel Economy Upgrade

Project Scope: The City of St. Paul wil be designing and upgrading and extending the existing heat recovery loop to work in conjunction with the new wind-diesel system.

Project Status: The Grant is in place. The 95% design has been accepted by AEA. The project is substantially complete and was operating during an AEA site visit on February 3, 2015. Final deliverables have been received and accepted and the project will be closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$98,149.00	$98,149.00
Other State Funding	$0.00	$0.00
Total State	**$98,149.00**	**$98,149.00**
Required Local Match	$16,685.00	$16,685.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$114,834.00**	**$114,834.00**

Unalaska Heat Recovery

Grantees	City of Unalaska (Local Government)
Technology Type	HEAT RECOVERY
Region	Aleutians
AEDG Project Code	10171

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	271	Unalaska Heat Recovery Construction	2195449	403032	Construction	7/1/09	6/30/15	Active

Grant 2195449: Unalaska Heat Recovery Construction

Project Scope: The City of Unalaska will use the grant funds for the purchase and installation of equipment to utilize the excess heat from existing generators at the Dutch Harbor powerhouse. The excess heat will be used by a 200 kW Organic Rankine Cycle (ORC) generator designed to convert waste heat to electrical energy. The waste heat recovery system will be designed for expansion to include excess heat from increased power demands when a new powerhouse is constructed.

Project Status: This system is in operation and reporting performance metrics on a monthly basis. The project will be closed pending a final inspection.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,300,000.00	$1,300,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,300,000.00**	**$1,300,000.00**
Required Local Match	$619,807.00	$619,807.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,919,807.00**	**$1,919,807.00**

Akutan Hydroelectric System Repair and Upgrade

Grantees	City of Akutan (Utility-Government)
Technology Type	HYDRO
Region	Aleutians
AEDG Project Code	10149

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	249	Town Creek Hydro System - Design for Repairs/Upgrade	2195473	407062	Final Design	7/1/09	6/30/12	Closed
3	469	Akutan Hydroelectric System Repair and Upgrade	7030003	407072	Construction	7/1/10	6/30/15	Active

Grant 2195473: Town Creek Hydro System - Design for Repairs/Upgrade

Project Scope: The preconstruction project is to conduct field investigation and inspection of the existing hydroelectric system located on Town Creek in Akutan. As-built data will be collected and as-built drawings will be generated. Updated cost estimates, plan and procedure for acquiring required permits and bring the project into compliance with AK Dam Safety Program, final dam designs, LIDAR survey, and a final report will be completed.

Project Status: The Condition Assessment Report, including the AK Dam Safety Program Periodic Safety Inspection Report, September 2011 site visit memo, and as-built drawings, survey have been completed. The grantee's engineer coordinated with Dam Safety in support of preparing the City's application to modify and repair the dam, including submission of completed construction drawings. The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$162,000.00	$162,000.00
Other State Funding	$0.00	$0.00
Total State	**$162,000.00**	**$162,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$162,000.00**	**$162,000.00**

Grant 7030003: Akutan Hydroelectric System Repair and Upgrade

Project Scope: The project is to complete permitting, final design, and construction of repairs and upgrades to the 105 kW Town Creek hydroelectric project. Pre-construction activities include completion of: 1) final plans and specifications, 2) cost estimate, 3) construction schedule, 4) economic analysis and 5) AK Dam Safety permitting. Construction activities include: 1) mobilization and demobilization, 2) providing maintenance equipment and building, 3) construction and commissioning including repairs to main intake dam and diversions, existing access road, inspection and maintenance of turbine, upgrading controls and improving integration with diesel plant, and final system commissioning and testing, and 4) providing documentation and training for the upgraded hydro plant.

Project Status: The construction and diesel integration work have been completed and the project began operation in early 2015.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,391,000.00	$1,391,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,391,000.00**	**$1,391,000.00**
Required Local Match	$100,000.00	$135,633.35
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,491,000.00**	**$1,526,633.35**

Chuniixsax Creek Hydroelectric

Grantees	City of Atka (Local Government)
Technology Type	HYDRO
Region	Aleutians
AEDG Project Code	10060

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	58	Chuniisax Creek Hydroelectric Construction	2195376	407033	Construction	8/20/08	12/31/13	Closed

Grant 2195376: Chuniisax Creek Hydroelectric Construction

Project Scope: The project is to complete the final design, permitting and construction of a hydroelectric project, which is 45% complete, on Chuniisax Creek for the City of Atka. The final dam design will be completed first. The remaining elements to be constructed include: dam with intake, penstock, transmission line from existing powerhouse to the City, new controls and interface to diesel plant, and commissioning.

Project Status: The hydroelectric project is complete and began providing power to the community as of December 23, 2012.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$996,000.00	$996,000.00
Other State Funding	$0.00	$0.00
Total State	**$996,000.00**	**$996,000.00**
Required Local Match	$1,918,891.00	$1,953,836.59
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,914,891.00**	**$2,949,836.59**

Loud Creek Hydro

Grantees	City of Akutan (Utility-Government)
Technology Type	HYDRO
Region	Aleutians
AEDG Project Code	10148

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	248	Loud Creek Hydro Feasibility Analysis/Conce Design	2195472	407061	Feasibility	7/1/09	12/31/13	Closed

Grant 2195472: Loud Creek Hydro Feasibility Analysis/Conce Design

Project Scope: The preconstruction grant is to prepare a feasibility study of the potential hydro resource at Loud Creek near Akutan. Stream gauging, updated assessment of the impound capacity, construction and transmission requirements, economic and energy analysis, construction costs, topographic survey, conceptual designs, and materials lists will be completed during study.

Project Status: A feasibility study titled, Loud Creek Hydropower Development Conceptual Design and Feasibility Report, dated July 29, 2011, and prepared by EES Consulting, et al, has been completed and accepted.

The City submitted an updated schedule and budget which would allow for the installation of a new stage recorder and continuation of data collection. After review, AEA decided no further grant funding will be available for the project. Subsequently, the City determined it would fund the replace of the stage recorder and collect flow data. A site visit was made on June 18, 2013, where a new stage recorder was installed and flow measurements taken. A technical memorandum by McMillen is anticipated be completed and the grant will be closed during the next period.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$206,295.92	$206,295.92
Other State Funding	$0.00	$0.00
Total State	**$206,295.92**	**$206,295.92**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$206,295.92**	**$206,295.92**

Waterfall Creek Hydroelectric Project

Grantees	City of King Cove (Local Government)
Technology Type	HYDRO
Region	Aleutians
AEDG Project Code	10379

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	887	Waterfall Creek Hydroelectric Project	7050887	407090	Final Design	7/1/12	9/30/15	Active
6	929	Waterfall Creek Hydroelectric Project 2	7060929	407090	Construction	7/1/13	12/31/15	Active

Grant 7050887: Waterfall Creek Hydroelectric Project

Project Scope: The project is to complete preconstruction activities, including permitting and final design, for the 375 kW Waterfall Creek Hydroelectric Project. Waterfall Creek is located approximately 5 miles north of the City of King Cove and is within one half mile of the existing Delta Creek Hydroelectric Project. Because of its close proximity to Delta Creek, the new project will share space in an expansion of the existing Delta Creek powerhouse and existing transmission line. Significant new project features include a concrete diversion/intake structure, 4500 feet of HDPE penstock, and 5000 feet of access road.

Project Status: The grant agreement was signed. Awaiting completion of final design and permitting.

Final reimbursement request received Jul 2015 indicated that all grant funds have been expended. Project is ready for construction although AEA provided review comments that questioned some aspects of the proposed plans. The final reimbursement report indicates Canyon is proceeding with turbine construction and the general construction contract with Sunland is awaiting award by the City. It is not known whether all deliverables under this grant have been received.

In 2015 Sunland began construction. The access road and preliminary foundation work for the powerhouse were completed before winter shutdown. Completion is expected in 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$200,000.00	$200,000.00
Other State Funding	$0.00	$0.00
Total State	**$200,000.00**	**$200,000.00**
Required Local Match	$200,000.00	$200,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$400,000.00**	**$400,000.00**

Grant 7060929: Waterfall Creek Hydroelectric Project 2

Project Scope: The City of King Cove will use up to $2,600,000 from a Round VI Renewable Energy Fund grant and will provide $1,300,000 of cash match funds for construction of the 375 kW run-of-river Waterfall Creek Hydroelectric Project. The project is located five miles north of the City of King Cove and will annually generate between 1,000 and 1,200 MWh. Sales from this new renewable energy source will help displace diesel generation of electricity by the City and also be sold as dispatchable energy to Peter Pan Seafoods, Inc. to displace some of their diesel generation.

Waterfall Creek will be the second hydroelectric project for the City. The first, the 800 kW Delta Creek Hydroelectric Project, was constructed in 1995. Because the two hydro sites are relatively close to one another, the powerhouse for the Waterfall Creek project will co-locate in an expansion to the existing Delta Creek powerhouse and utilize the existing transmission line to King Cove. This will serve to reduce construction costs and facilitate integration of the new hydropower source into the existing power system.

The City received $200,000 in Round V renewable grant funding from the Authority to complete permitting and final design for this hydroelectric project, which it matched by a like amount of cash. The project is outside the jurisdiction of the Federal Energy Regulatory Commission and permits are being sought from state and federal resource agencies under that grant. Permitting and final design are underway at this time. The City is in extended discussions with ADF&G regarding the terms of the Fish Habitat

Permit. All tasks listed in the Round V grant will have to be completed and the associated deliverables provided to AEA for review and acceptance before construction can move forward under the new grant.

The entire project is located on lands owned by the King Cove Village Corporation. The City expects to purchase 20 acres of land from the corporation for this project. The purchase price is anticipated to be $100,000.

The Waterfall Creek Hydroelectric Project will consist of a small diversion dam and intake, a 4,500 HDPE penstock, a 16x40 powerhouse expansion, a Pelton Impulse Turbine and 5,000 feet of access roads. The dam will be a rockfill dam with concrete core wall. It will additionally have a concrete intake section with a forebay and a multi-tiered spillway section.

Project Status: The grant agreement has been executed. It is currently being amended to reflect project changes.

As of Sep 2015 no funds have been expended from the grant. The scope of the grant is for construction.

In 2015 Sunland began construction. The access road and preliminary foundation work for the powerhouse were completed before winter shutdown. Completion is expected in 2016.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$2,600,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$2,600,000.00**	**$0.00**
Required Local Match	$1,300,000.00	$447,012.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,900,000.00**	**$447,012.00**

Adak Diesel Hybrid

Grantees	TDX Adak Generating, LLC (Independent Power Producer)
Technology Type	OTHER
Region	Aleutians
AEDG Project Code	10211

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	315	Adak Diesel Hybrid	2195450	403038	Feasibility	7/1/09	6/30/13	Closed

Grant 2195450: Adak Diesel Hybrid

Project Scope: This grant funds only the Resource Reconnaissance, Feasibility Reports and Conceptual Design of the proposed project.

The grantee proposes to integrate one or more renewable energy resources with a properly sized efficient diesel plant for the community of Adak. The existing power plant in Adak was designed and constructed in 1964 for a 6000 person military base. The facilities were subsequently turned over to the community of Adak. The diesel plant is grossly oversized for the current population, is in poor condition, is extremely inefficient and does not incorporate any of the abundant renewable energy resources available on the island. The ultimate goal is to integrate a properly sized diesel power plant with one or more of the wind, geothermal, and hydroelectric renewable energy resources.

Project Status: In November 2011, a reconnaissance report of renewable energy resources was completed for Adak. It concluded the most promising sites were hydroelectric resources, with some promise for wind energy. Because the condition of the existing diesel generation plant is very poor and the electrical transmission and distribution system is vastly oversized for the current population, understanding the existing loads is the first step in analyzing their needs. The remaining grant funds have been committed to gathering load data for Adak and preparing a follow-up report on hydro resources.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$76,369.00	$76,369.00
Other State Funding	$0.00	$0.00
Total State	**$76,369.00**	**$76,369.00**
Required Local Match	$5,756.00	$5,756.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$82,125.00**	**$82,125.00**

Aleutians East Borough

Grantees	Aleutians East Borough (Local Government)
Technology Type	OTHER
Region	Aleutians
AEDG Project Code	10014

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	11	Aleutians East Borough Feasibility Study	2195408	407051	Feasibility	8/20/08	9/30/10	Closed

Grant 2195408: Aleutians East Borough Feasibility Study

Project Scope: The funding is to conduct a Reconnaissance Report assessing possible renewable energy resources - wind, hydro, current, tidal, and waste heat recovery - for the small isolated communities of Cold Bay, False Pass, and Nelson Lagoon. The report will summarize the assessment and findings. The project will be administered and managed by the AEB and will be conducted by a consultant chosen by the AEB.

At a minimum, the following will be accomplished:

* Gather all resource studies that now exist on renewable energy projects within the Borough's boundaries * Research and list other studies that may benefit the smaller communities (with methods and costs) * Describe existing power and heating systems in each of the communities, including detailed loan information and other information necessary to continue into feasibility and conceptual design phase * Describe diesel fuel deliveries and, if appropriate, examine other shipping options * Describe renewable energy technologies available specific in each community * Ascertain and document the required operations and maintenance of renewable resource projects * Ascertain and document the community and utility support and interest in specific renewable resource development * Describe each of the proposed systems' costs and benefits * Quantify the potential energy market and sales rates in each community * Identify land (with landowners) needed for each of the proposed systems * Identify anticipated or required permits with timelines and conduct initial environmental screening for each project with potential barriers or problems noted * Provide an economic analysis of alternatives for each community and make recommendations for future project development work, in rank order per community

Project Status: Completed

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$25,000.00	$25,000.00
Other State Funding	$0.00	$0.00
Total State	**$25,000.00**	**$25,000.00**
Required Local Match	$15,000.00	$15,177.25
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$40,000.00**	**$40,177.25**

Cold Bay Wind Energy Project

Grantees	G & K Electric Utility (Independent Power Producer)
Technology Type	WIND
Region	Aleutians
AEDG Project Code	10320

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	680	Cold Bay Wind Energy Project	7040004	410061	Feasibility	7/1/11	12/31/15	Active

Grant 7040004: Cold Bay Wind Energy Project

Project Scope: This grant consists of $99,075 from Round IV of the Renewable Energy Fund for a wind feasibility assessment in Cold Bay. G&K Electric Utility will install a wind-measuring meteorological (met) tower and complete geotechnical reconnaissance to determine the advisability of installing wind turbines in Cold Bay.

Project Status: The grant is in place. A meteorological tower was installed on August 9, 2012. On March 26, 2013, AEA was informed by Marsh Creek that data was finally collected from the met tower but was not retrievable from the data card. The data card and logger are being sent to NRG in the event they can retrieve the data. A new logger was lent to Marsh Creek by AEA and has been installed, but the data loss caused a delay in the project. Eighteen months of good data have now been collected. The winds are strong, with turbulence in the IEC level B range - moderate, but still workable.

The grantee has provided more in-kind match than was required of the grant. The grantee has been informed that they do not need to continue tracking match for the purpose of this grant.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$99,075.00	$57,591.91
Other State Funding	$0.00	$0.00
Total State	**$99,075.00**	**$57,591.91**
Required Local Match	$5,000.00	$7,987.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$104,075.00**	**$65,578.91**

False Pass Wind Energy Project

Grantees	City of False Pass Electric Utility (Local Government)
Technology Type	WIND
Region	Aleutians
AEDG Project Code	10318

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	678	False Pass Wind Energy Project	7040051	410079	Feasibility	7/1/11	6/30/15	Active

Grant 7040051: False Pass Wind Energy Project

Project Scope: This grant consists of $69,075 from Round IV of the Renewable Energy Fund for a wind feasibility assessment in False Pass. The total project cost is $74,075 with a match of $5,000 provided by the grantee.

The City of False Pass Electric Utility is the grantee and the mayor has overall authority for the project. The Aleutians East Borough Community Development Coordinator will be the primary contact representing City of False Pass Electric Utility and has day-to-day responsibility to ensure that the project is on schedule and within budget.

The City of False Pass Electric Utility has already installed a meteorological tower and collected two years of wind data. The grantee will complete a wind resource analysis based on this data to develop a permitting and avian study plan. Then a preliminary geotechnical analysis will be conducted to determine the soil conditions and needed engineering at the site.

A conceptual design will be created based on the outcome of the wind resource analysis and geotechnical investigation. This design will address the current diesel power and distribution system to identify upgrades that are needed to integrate wind power. A variety of wind turbine models and quantity configurations will be considered.

Project Status: The grant agreement is in place. The grantee has chosen to work with Marsh Creek as their contractor. V3 Energy will be using data collected from 2004 to 2006, as well as November through December of 2011, to complete the Wind Resource Assessment (WRA) as a subcontractor of Marsh Creek. A draft of the Conceptual Design Report (CDR) was submitted. After the CDR was reviewed by AEA, it was agreed that the False Pass electrical system is not currently capable of using wind power and the project will not proceed to the next phase at this time.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$69,075.00	$64,952.99
Other State Funding	$0.00	$0.00
Total State	**$69,075.00**	**$64,952.99**
Required Local Match	$5,000.00	$4,790.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$74,075.00**	**$69,742.99**

Nelson Lagoon Wind Energy Project

Grantees	Nelson Lagoon Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Aleutians
AEDG Project Code	10319

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	679	Nelson Lagoon Wind Energy Project	7040006	410070	Feasibility	7/1/11	12/31/15	Active

Grant 7040006: Nelson Lagoon Wind Energy Project

Project Scope: This grant consists of $99,075 from Round IV of the Renewable Energy Fund for a wind feasibility assessment in Nelson Lagoon. Nelson Lagoon Eletric Cooperative will install a wind-measuring meteorological (met) tower and complete geotechnical reconnaissance to determine the advisability of installing wind turbines in Cold Bay.

Project Status: The grant is in place. The scope and budget have been adjusted to allow for the avian issues in the community. A modified 40' free standing monopole tower was installed on May 23, 2012 and data collection is ongoing. An avian study has been approved and is ongoing. Only a draft Conceptual Design Report (CDR) will be required of the grantee to allow budget for the avian study.

The grantee has provided more in-kind match than was required of the grant. The grantee has been informed that they do not need to continue tracking the match for the purpose of this grant.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$99,075.00	$75,756.47
Other State Funding	$0.00	$0.00
Total State	**$99,075.00**	**$75,756.47**
Required Local Match	$5,000.00	$7,260.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$104,075.00**	**$83,016.47**

Nikolski Wind Integration

Grantees	Nikolski IRA Council (Local Government)
Technology Type	WIND
Region	Aleutians
AEDG Project Code	10089

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	89	Nikolski Wind Integration Construction	2195375	410028	Construction	8/20/08	12/31/10	Closed

Grant 2195375: Nikolski Wind Integration Construction

Project Scope: TDX Power installed a 65 kW V-15 wind turbine on behalf of the utility in 2007, using an U.S. Department of Agriculture - Rural Utilites Service (USDA RUS) grant and Aluetian Pribilof Island Community Development Association (APICDA) funding. Currently the turbine is wired to the power plant but not connected. This proposal would provide funding to integrate the turbine into the power system and develop a heat recovery system in the existing power plant and provide for electric boilers in the lodge and school to use excess wind energy.

Project Status: The system is not currently operational. All money has been spent. The energy produced by the wind turbine is more than the power plant can handle along with the existing community load and reaction speed of secondary loads. SCADA is working. The cost to do business in Nikolski was higher than originally estimated. Nikolski has requested an additional $331,000 from Round V of the Renewable Energy Fund to resolve issues, but no funds were awarded.

The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$409,430.00	$409,430.00
Other State Funding	$0.00	$0.00
Total State	**$409,430.00**	**$409,430.00**
Required Local Match	$41,500.00	$41,500.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$450,930.00**	**$450,930.00**

Saint George Wind Farm

Grantees	City of St. George (Local Government)
Technology Type	WIND
Region	Aleutians
AEDG Project Code	10090

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	90	St. George Wind Farm Construction	2195398	410029	Construction	8/20/08	12/31/15	Active

Grant 2195398: St. George Wind Farm Construction

Project Scope: Wind-diesel project for the Community of St. George.

Project Status: The grantee is working closely with the AEA Wind and Rural Power Systems Upgrade (RPSU) programs in order to install a wind-diesel system. Construction bids came in higher than the funding available. The City of St. George will be working with the RPSU program to complete construction. Due to expected high winds in St. George starting in September, the erection of the turbine has been scheduled for spring 2014, after the winter winds have fallen off.

Construction of the the wind farm is under budget. A hub extender and larger VFD will be tested in Minnesota for possible use at the St. George Wind Farm. This equipment could allow St. George to produce more wind power with the same infrastructure. AEA and possibly ACEP will be involved in establishing the testing parameters and performing data analysis along with the manufacturers. The proposed equipment could help in the deployment of wind turbines at Alaskan communities with lower wind regimes.

The 95% design has been accepted by AEA. Wind turbine construction will be complete in November 2014. The wind Turbine was commissioned in November 2014. Three days after commissioning an apparent programming fault misapplied the braking system causing a fire. The turbine was covered by warranty and is being replaced. Completion of the replacement and commissioning is scheduled for sometime in 2015.

Tallk Inc. is working to complete repairs to the fire damaged turbine. The anticipated schedule for shipment to St. George with installation and testing is Oct 2015

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,500,000.00	$1,455,167.34
Other State Funding	$0.00	$0.00
Total State	**$1,500,000.00**	**$1,455,167.34**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,500,000.00**	**$1,455,167.34**

St. Paul Wind Diesel Project

Grantees	TDX Corporation (Independent Power Producer)
Technology Type	WIND
Region	Aleutians
AEDG Project Code	10287

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	503	St. Paul Wind Diesel Project	7030002	409023	Construction	7/1/10	12/31/17	Active

Grant 7030002: St. Paul Wind Diesel Project

Project Scope: This project was fully funded. The project consists of $1.9 Million from Round III of the Renewable Energy Fund (REF) with an additional $200,000 in match from the grantee. The grantee has also "matched" $1.5 milllion in turbines purchase (this includes $650,000 of DOE funds). The project will tie one or two of TDX's turbines on St. Paul into the City's grid and make necessary upgrades to the City's facilities and transmission system.

Project Status: The Power Purchase Agreement and 35% design has been accepted by AEA. A phased construction schedule was approved by AEA and the City of St. Paul. This will allow the feeder from the City grid to the TDX POSS camp to be designed and built before the overal design of the system has been completed. This was due to concerns regarding harmonics on the distribution system during wind turbine start up. Testing will be completed once the feeder has been built and the turbines connected to the grid to determine if additional equipment will be necessary to handle any harmonics. Power from the turbines will only be allowed on the grid during this testing phase and the full 65% design will be completed after the testing. The feeder 65% design has been accepted by AEA and St. Paul. The 65% design was accepted by AEA and St. Paul on November 16, 2012. The 95% design was accepted by AEA and the City on May 9, 2013. Construction at the POSS camp has been completed. Work on the City Power Plant switchgear has been haulted due to the delayed installation of Generator 2 by the City.

The first wind power made it onto the City grid during testing on August 12, 2012. The City is accepting power from two wind turbines but the size of the secondary loads and diesel generators is limiting the amount of wind power being produced. The City's newest generator, along with additional secondary loads being planned, should eliminate this bottle neck. The scope of work for this grant was expanded to include the installation of a flywheel, met tower, and additional secondary loads. The additional work is possible due to TDX finishing underbudget and considered necessary due to the City accepting power from the second turbine more quickly than anticipated. The flywheel has been installed and is undergoing testing as part of an EETF (Emerging Energy Technology Fund) grant to provide additional "diesels off" time at the TDX POSS Camp. After testing is completed the flywheel will provide ancillary services (frequency and voltage support) for the wind turbines providing power to the City Grid.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,900,000.00	$1,628,414.12
Other State Funding	$0.00	$0.00
Total State	**$1,900,000.00**	**$1,628,414.12**
Required Local Match	$200,000.00	$173,615.97
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,100,000.00**	**$1,802,030.09**

Sand Point Wind

Grantees	Aleutian Wind Energy (Independent Power Producer)
Technology Type	WIND TO HEAT
Region	Aleutians
AEDG Project Code	10213

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	317	Sand Point Wind Construction	2195446	410050	Construction	7/1/09	12/31/12	Closed

Grant 2195446: Sand Point Wind Construction

Project Scope: The project was to install two Vestas V-39 wind turbines with resistive load bank at the powerhouse and dump loads in community buildings. This project is linked with grant 2195264 which is a DOE pass-thru grant.

Project Status: The wind turbines are erected and commissioned. A 455kW CAT3456 genset is commissioned. A 395kW air cooled load bank is commissioned. A 126kW electric boiler is commissioned. The cost to complete the remote boiler system exceeds remaining budget. The grant is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$639,494.85	$639,494.85
Other State Funding	$0.00	$0.00
Total State	**$639,494.85**	**$639,494.85**
Required Local Match	$437,900.00	$437,900.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,077,394.85**	**$1,077,394.85**

Pilgrim Hot Springs

Grantees	University of Alaska Fairbanks (Non Profit Entity)
Technology Type	GEOTHERMAL
Region	Bering Straits
AEDG Project Code	10158

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	466	Pilgrim Hot Springs Geothermal Resource Assessment	7030037	406013	Feasibility	7/1/10	6/30/14	Closed
4	654	Pilgrim Hot Springs Geothermal Resource Assessment 2	7040007	406013	Feasibility	7/1/11	6/30/14	Closed

Grant 7030037: Pilgrim Hot Springs Geothermal Resource Assessment

Project Scope: The Pilgrim Hot Springs geothermal resource assessment is being conducted with two Renewable Energy Fund (REF) awards. The full project scope is described under grant #7040007.

Project Status: The project status for the two awards is described under grant #7040007.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$613,167.47	$613,167.47
Other State Funding	$0.00	$0.00
Total State	**$613,167.47**	**$613,167.47**
Required Local Match	$313,093.00	$313,093.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$926,260.47**	**$926,260.47**

Grant 7040007: Pilgrim Hot Springs Geothermal Resource Assessment 2

Project Scope: The University of Alaska Fairbanks will continue work exploring the geothermal potential of the Pilgrim Hot Springs site begun under a Round III Renewable Energy Fund Grant (REF). In 2010, the University of Alaska Fairbanks began Phase I of an exploration program of the Pilgrim Hot Springs resource. The program is funded mainly through a Department of Energy grant with cost share provided through a $613,174 award under Round III of the REF.

This first phase involved the use of geophysical remote sensing techniques (including forward looking infrared radiometry, or FLIR) intended to map the spatial extent and total heat flow to the surface to make a preliminary estimation of the developable extent of the reservoir. These remote sensing techniques are being coupled with ground-based exploration techniques to pinpoint the location of the upflow zone, map the spatial extent and total heat flow to the surface, and estimate the temperature and depth of the reservoir.

This grant addresses Phase II and III of this project. Phase II involves drilling and testing two 500 ft. temperature gradient holes and two 2500 ft. confirmation holes into the resource to confirm the results from Phase I.

Phase III will involve developing a more complete understanding of the reservoir through flow testing and water sampling of the holes, and development of a numerical reservoir model. The numerical model will be used to predict future performance, including possible megawatts produced, of the reservoir under various production/reinjection scenarios. The end result of this project will be an economic and geothermal resource model of the Pilgrim Hot Springs site and surrounding area to determine if it can be economically developed, and to what extent.

Project Status: During 2011, the Alaska Center for Energy and Power (ACEP) completed lab and field work related to Tasks 1 and 2, including imaging surveys and analysis, preliminary field work and heat flow modeling, and water sampling. Two 500 ft. temperature gradient holes were also drilled. During the 2012 field season, 29 additional temperature gradient holes were drilled

and 3 confirmation holes were drilled to a depth of nearly 2,000 ft. The well holes remained open during the 2013 field season for monitoring as another separately funded production well was drilled.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,330,243.25	$1,330,243.25
Other State Funding	$0.00	$0.00
Total State	**$1,330,243.25**	**$1,330,243.25**
Required Local Match	$2,000,000.00	$2,000,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,330,243.25**	**$3,330,243.25**

Brevig Mission Water System Heat Recovery

Grantees	City of Brevig Mission (Local Government)
Technology Type	HEAT RECOVERY
Region	Bering Straits
AEDG Project Code	10443

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1040	Brevig Mission Water System Heat Recovery	7071040	403070	Construction	7/1/14	10/31/17	Active

Grant 7071040: Brevig Mission Water System Heat Recovery

Project Scope: The City of Brevig Mission will use the $731,400 Round 7 Renewable Energy Fund grant and $21,941 of in-kind match to design and construct a heat recovery system between the Alaska Village Electric Cooperative (AVEC) electrical power plant and two end-user community buildings: 1) Water Treatment Plant, 2) Washeteria. The new system will capture jacket water heat generated by the AVEC plant that is currently wasted to the atmosphere by power plant radiators. Marine manifolds will be installed on the 2 existing Detroit Diesel generators to increase the amount of heat available for recovery. The recovered heat will be transferred by insulated glycol piping to the end-users and tie into the end-users' heating systems using heat exchangers, control mechanisms, and any required upgrades to the existing building hydronic systems.

Project Status: CRW has been hired by ANTHC and is completing the design.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$731,400.00	$2,465.34
Other State Funding	$0.00	$0.00
Total State	**$731,400.00**	**$2,465.34**
Required Local Match	$21,941.00	$5,825.74
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$753,341.00**	**$8,291.08**

Savoonga Heat Recovery - Power Plant to Water Plant

Grantees	City of Savoonga (Local Government)
Technology Type	HEAT RECOVERY
Region	Bering Straits
AEDG Project Code	10362

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	934	Savoonga Heat Recovery System - Power Plant to Water Plant	7060934	403062	Construction	7/1/13	12/31/15	Active

Grant 7060934: Savoonga Heat Recovery System - Power Plant to Water Plant

Project Scope: This grant consists of $425,701 from Round VI of the Renewable Energy Fund for construction of jacket heat recovery project to capture the recovered heat from the diesel engines in the AVEC power plant and excess wind energy from existing wind turbines and send the recovered heat to the water treatment plant for space heating, water storage tank heating, and circulation loop heating and it is expected to reduce the fuel oil usage by 8,800 gallons per year, nearly offsetting the total fuel oil usage.

Alaska Village Electric Cooperative (AVEC) has an agreement with the Alaska Rural Utility Collaborative (ARUC), which is under the Alaska Native Tribal Health Consortium (ANTHC), to receive the recovered heat for the water treatment plant on behalf of the City of Savoonga.

The total project cost is $437,453 with $11,752 of in-kind contribution provided by ANTHC as a match. The City of Savoonga is the grantee. ANTHC will provide project/construction services for this project as an in-kind match, $11,752. ANTHC and the City of Savoonga will execute a Cooperative Project Agreement (CPA) to define each entity's role in the project scope. The CPA must be accepted by AEA prior to the release of construction funds.

The final reimbursement of grant funds will not be disbursed without an O&M reporting plan by the AEA Project Manager. AEA may retain up to 10% of the contributed grant funds until the grantee has submitted an acceptable O&M reporting plan.

Project Status: This system is operational and the grant is in the close-out process.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$425,701.00	$425,637.40
Other State Funding	$0.00	$0.00
Total State	**$425,701.00**	**$425,637.40**
Required Local Match	$11,752.00	$10,452.57
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$437,453.00**	**$436,089.97**

Shishmaref Heat Recovery Project

Grantees	City of Shishmaref (Local Government)
Technology Type	HEAT RECOVERY
Region	Bering Straits
AEDG Project Code	10361

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	856	Shishmaref Heat Recovery Project	7050856	403055	Construction	7/1/12	6/30/16	Active

Grant 7050856: Shishmaref Heat Recovery Project

Project Scope: The proposed project will design and construct a heat recovery system between the Alaska Village Electric Cooperative (AVEC) power plant and the end-user community buildings: 1) Water Treatment Plant, 2) Clinic, and 3) City Office. The new system will capture jacket water heat generated by the AVEC plant that is currently wasted to the atmosphere by power plant radiators. The new system will tie into the end-users heating systems using heat exchangers, control mechanisms and any required upgrades to the existing building hydronic systems.

City of Shishmaref, in collaboration with ANTHC, will construct this heat recovery system to connect waste heat from AVECs generating station to the water treatment plant, clinic, and City Office. The project will displace approximately 7,900 gallons of diesel per year. A detailed Heat Recovery Analysis was completed for the City of Shishmaref and Alaska Native Tribal Health Consortium (ANTHC) by Alaska Energy and Engineering, Inc.

Project Status: The engineering design is in progress through the Alaska Native Tribal Health Consortium.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$310,841.00	$16,003.34
Other State Funding	$0.00	$0.00
Total State	**$310,841.00**	**$16,003.34**
Required Local Match	$16,360.00	$12,765.83
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$327,201.00**	**$28,769.17**

Stebbins Heat Recovery Project

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	HEAT RECOVERY
Region	Bering Straits
AEDG Project Code	10408

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	939	Stebbins Heat Recovery Project	7060939	403065	Construction	7/1/13	6/30/16	Active

Grant 7060939: Stebbins Heat Recovery Project

Project Scope: This grant consists of $1,319,088 from Round VI of the Renewable Energy Fund for design and construction heat recovery system to connect recovered heat from the community power plant to the new water treatment plant, existing water treatment plant, Washeteria, head start building, clinic, and the school. The total project cost is $1,341,000 with $21,975 of in-kind building contribution provided by ANTHC as a match. This project is estimated to displace 57,000 gallons of fuel oil out of an annual usage of 69,000 gallons.

The feasibility study for this project was completed in 2012. Construction funding availability is contingent on AEA accepting the final design and the business/operating plan with heat sales agreements.

Alaska Village Electric Cooperative, Inc. (AVEC) is the grantee. The community of Stebbins and AVEC must finalize a heat sales agreement; a copy must be submitted to AEA before construction funds are released to grantee. Similarly, a final design must be accepted by AEA for review before construction funds are released to the grantee.

A 65% final design, which includes any necessary contracts, must be complete and accepted by AEA prior to the release of funds for materials requiring long lead time items.

A 95% final design must be complete and accepted by AEA prior to release of construction funds. The 95% design must include a narrative, along with attached drawings and specifications as required to establish function of all major components within the biomass system. The 95% design will contain adequate system and component definition to manage construction of the project.

The final reimbursement of grant funds will not be disbursed without an O&M reporting plan accepted by the AEA Project Manager. AEA may retain up to 10% of the contributed grant funds until the grantee has submitted an acceptable O&M reporting plan.

Project Status: The design is nearing completion and construction is anticipated for 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,319,088.00	$102,582.00
Other State Funding	$0.00	$0.00
Total State	**$1,319,088.00**	**$102,582.00**
Required Local Match	$21,975.00	$13,202.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,341,063.00**	**$115,784.00**

Nome Banner Peak Wind Farm Transmission

Grantees	Nome Joint Utility System (Utility-Government)
Technology Type	TRANSMISSION
Region	Bering Straits
AEDG Project Code	10050

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	47	Nome Banner Peak Wind Farm Transmission Construction	2195444	409017	Construction	8/20/08	3/31/10	Closed

Grant 2195444: Nome Banner Peak Wind Farm Transmission Construction

Project Scope: This is a grant to construct a two-mile intertie connecting a 1.17-megawatt wind farm constructed by Banner Wind, LLC with the Nome Joint Utility Systems electrical grid.

Project Status: Construction has been completed and the wind farm is producing power for the utility. Reimbursement was received in May 2010.

The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$801,000.00	$801,000.00
Other State Funding	$0.00	$0.00
Total State	**$801,000.00**	**$801,000.00**
Required Local Match	$89,000.00	$122,871.43
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$890,000.00**	**$923,871.43**

Banner Peak Wind Farm Expansion

Grantees	Nome Joint Utility System (Utility-Government)
Technology Type	WIND
Region	Bering Straits
AEDG Project Code	10384

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	52	Newton Peak Wind Farm	2195438	410030	Construction	8/20/08	6/30/16	Active

Grant 2195438: Newton Peak Wind Farm

Project Scope: The Nome Joint Utility Sytems (NJUS) originally requested $13.95 million from Round I for feasibility, design and construction of a 3 MW wind farm but project funding was capped at $4 million. An additional $4.069 Million was awarded in Round V of the Renwable Energy Fund (REF). This grant consists of $4,000,000 from Round I of the REF and $4,069,000 from Round V for design and construction of a wind farm in the City of Nome and integration of a secondary load controller and resistive dump boiler into the Nome power system. The grantee will provide $444,444 as match for the Round I appropriation and $439,644 as a match for the Round V appropriation. The total funding for this project is $8,953,088 with $884,088 provided by the grantee. City of Nome/Nome Joint Utility System will complete a conceptual design, final design, permitting, construction and startup of a wind farm along with any necessary controls or equipment needed to integrate the wind farm into the Nome electrical grid.

Project Status: The NJUS Round I grant application, called for the construction of five 600 kW wind turbines on Newton Peak at a cost of $13,952,326. Due to caps on funding of Renewable Energy Fund (REF) projects, AEA recommended partial funding of this project for $4 Million. In response, the wind farm was reduced to a single EWT 900 wind turbine. The location was also changed from Newton Peak to Anvil Mountain and then to Banner Peak due to icing concerns. The caps on REF projects have been raised to $8 Million. NJUS submitted two applications in Round V. The first was for $3,703,500 and called for the installation of a second EWT 900 on Banner Peak. The second called for restructuring the layout of the diesel gensets in Nome and for the installation of a secondary load boiler. Restructuring the power plant is an ineligible cost under the RE Fund. AEA recommended partial funding of $4,069,000 for the installation of the second EWT 900 turbine and the installation of the secondary load boiler with the requirement that the Authority accept final design and permitting and NJUS reconfigures the existing diesel generators before construction funds are released.

The grants are in place. The Conceptual Design Report (CDR) has been accepted by AEA. The 65% design has been accepted. The grantee has moved forward with construction prior to the 95% design being accepted by AEA and the turbines are installed and commissioned. The grantee is over budget with regards to secondary load installations. AEA has accepted a letter from NJUS detailing proposed locations for secondary loads and possible funding sources. With this letter AEA has accepted the 95% design and will withhold $100,000 until the project is fully completed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$8,069,000.00	$7,969,000.00
Other State Funding	$0.00	$0.00
Total State	**$8,069,000.00**	**$7,969,000.00**
Required Local Match	$884,088.00	$874,338.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$8,953,088.00**	**$8,843,338.00**

Elim Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bering Straits
AEDG Project Code	10307

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	640	Elim Wind Feasibility Study	7040053	410077	Feasibility	7/1/11	12/31/15	Active

Grant 7040053: Elim Wind Feasibility Study

Project Scope: Alaska Village Electric Cooperative (AVEC) will conduct a wind resource and feasibility assessment in Elim. A detailed conceptual design will be delivered to AEA upon completion of the project.

Project Status: The grant agreement is in place. AVEC has negotiated a lease with the Elim Native Corporation to place a met tower at the primary site. The FAA permit for the met tower was approved. AVEC ordered and shipped a 34 meter met tower to Elim. V3 Energy installed the tower in Janurary 2014. The modem was non-responsive. The contractor replaced the SIM chip to correct the problem. Current wind data indicates a class 1 wind site. Grantee/contractor is waiting for FAA determination on alternate site.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$142,500.00	$55,988.00
Other State Funding	$0.00	$0.00
Total State	**$142,500.00**	**$55,988.00**
Required Local Match	$7,500.00	$3,123.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$150,000.00**	**$59,111.00**

Koyuk Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bering Straits
AEDG Project Code	10309

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	642	Koyuk Wind Feasibility	7040052	410075	Feasibility	7/1/11	6/30/14	Closed

Grant 7040052: Koyuk Wind Feasibility

Project Scope: The Alaska Village Electric Cooperative (AVEC) will conduct a wind resource and feasibility assessment in Koyuk. A detailed conceptual design will be delivered to AEA upon completion of the project.

Project Status: The grant agreement is in place. AVEC is coordinating with the City of Koyuk, via letters and telephone conversations regarding the proposed activities and possible land use for setting a MET tower. FAA approved all three proposed met tower sites. The community is concerned about impacts to berry picking if the primary site is developed. AVEC is considering the use of smaller turbines which may not necessitate a full wind study and feasibility assessment. The village corporation has chosen not to provide site control for a met tower site. AVEC sent a letter to the city stating that the project funds will be returned to AEA.

The project has been closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$16,142.00	$16,142.00
Other State Funding	$0.00	$0.00
Total State	**$16,142.00**	**$16,142.00**
Required Local Match	$850.00	$850.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$16,992.00**	**$16,992.00**

Shaktoolik Wind Construction

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bering Straits
AEDG Project Code	10200

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
		Shaktoolik Wind Construction	2195463	410053	Construction	12/23/10	12/31/12	Closed
5	871	Shaktoolik Surplus Wind Energy Recovery for Water System Heat	7050871	410081	Construction	7/1/12	12/31/15	Active

Grant 2195463: Shaktoolik Wind Construction

Project Scope: This is a grant for a construction project to install two Northwind 100-kilowatt turbines, plus secondary heat loads, load controllers and new switchgear. The project used an alternative pre-cast / post tension concrete foundation design to support the wind turbine structures.

Project Status: The wind turbines are installed and functional. Turbine 1 was installed 230' SE of originally chosen location due to "borrowing" from the gravel at the chosen site. The distribution line is complete. All AVEC Operations outstanding punch-list items were completed as of July 6, 2012. The integration of the new control module with the existing AVEC power plant was completed as of July 15, 2012. The two Northwind Wind Turbines were fully commissioned, remotely monitored and controlled as of July 15, 2012. The newly up-graded AVEC power systems are fully functioning and operating according to design as of August 15, 2012. The grant is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,465,633.00	$2,465,633.00
Other State Funding	$0.00	$0.00
Total State	**$2,465,633.00**	**$2,465,633.00**
Required Local Match	$262,263.00	$262,263.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,727,896.00**	**$2,727,896.00**

Grant 7050871: Shaktoolik Surplus Wind Energy Recovery for Water System Heat

Project Scope: The Alaska Village Electric Cooperative (AVEC), in collaboration with the Alaska Native Tribal Health Consortium (ANTHC), will design and construct a secondary load(s) to capture excess energy from the existing wind farm in Shaktoolik The secondary loads will be used to provide heat for the water treatment plant and drinking water storage tank. ANTHC will provide the match.

Project Status: The grant is in place. The Collaborative Project Agreement between AVEC and ANTHC is also in place. The final design was approved June 6, 2014 by AVEC. AEA accepted the design June 12, 2014 and has released procurement and construction funds. Construction has been completed and commissioning is under way. Interference between the radio communications of the power plant, wind turbines, and secondary loads has caused a delay in the final inspection. A site inspection was performed on April 28, 2015 by AEA. All components were installed and the system was functioning in automatic mode upon departing. On receipt of as-built drawings, the project will be closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$240,260.00	$126,991.00
Other State Funding	$0.00	$0.00
Total State	**$240,260.00**	**$126,991.00**
Required Local Match	$12,645.00	$12,645.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$252,905.00**	**$139,636.00**

Stebbins Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bering Straits
AEDG Project Code	10198

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	648	Stebbins Wind Feasibility Study	7040008	410066	Feasibility	7/1/11	6/30/15	Active
7	1068	Stebbins St Michael Wind Energy Final Design and Permitting	7071068	410066	Final Design	7/1/14	12/31/15	Active

Grant 7040008: Stebbins Wind Feasibility Study

Project Scope: The Alaska Village Electric Cooperative (AVEC) will conduct a wind feasibility assessment in Stebbins with an intertie to St. Michael, 10 miles to the east. A detailed conceptual design will be delivered to AEA upon completion of the project.

Project Status: The grant agreement is in place. A meteorological (met) tower was installed between St. Michael and Stebbins which showed a viable, Class 5 wind regime. Due to land use issues this site cannot be used for wind turbines. Another met tower was installed January 2012 at a location just North of Stebbins. The wind resource at the Stebbins site is class 5 to low class 6. A draft Conceptual Design Report was submitted in on July 13, 2013 and AEA review comments were sent to the grantee on August 19, 2013. The CDR has been accepted and the grant will be closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$137,750.00	$137,750.00
Other State Funding	$0.00	$0.00
Total State	**$137,750.00**	**$137,750.00**
Required Local Match	$7,250.00	$7,259.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$145,000.00**	**$145,009.00**

Grant 7071068: Stebbins St Michael Wind Energy Final Design and Permitting

Project Scope: This grant consists of $342,000 from Round 7 of the Renewable Energy Fund for permitting and design of a wind farm in the City of Stebbins, Alaska. The project will serve the intertied communities of Stebbins and St. Michael, Alaska. The total project cost is $360,000 with $18,000 provided by the grantee as a match. AVEC (Alaska Village Electric Cooperative) will complete final design and permitting, of a wind farm along with any necessary controls or equipment needed to integrate the wind farm into the Stebbins-St. Michael electrical grid.

Project Status: The grant was executed on August 28, 2014. Geotechnical field work was completed in the summer of 2014. This project was put on hold during AVEC's re-evaluation of turbine selection and negotiation with AKDOT to change air traffic patterns in the area of Stebbins. Design activities are underway.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$342,000.00	$101,630.00
Other State Funding	$0.00	$0.00
Total State	**$342,000.00**	**$101,630.00**
Required Local Match	$18,000.00	$5,433.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$360,000.00**	**$107,063.00**

Surplus Wind Energy Recovery for Gambell Water System Heat

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bering Straits
AEDG Project Code	10373

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	876	Surplus Wind Energy Recovery for Gambell Water System Heat	7050876	410080	Construction	7/1/12	12/31/15	Active

Grant 7050876: Surplus Wind Energy Recovery for Gambell Water System Heat

Project Scope: The Alaska Village Electric Cooperative (AVEC), in collaboration with Alaska Native Tribal Health Consortium (ANTHC), will design and construct a secondary load(s) to capture excess energy from the existing wind farm in Gambell. The secondary loads will be used to provide heat for the water treatment plant and drinking water storage tank. ANTHC will provide the match.

Project Status: The grant is in place. The Collaborative Project Agreement between AVEC and ANTHC is also in place. The final design was approved June 6, 2014 by AVEC. AEA accepted the design June 12, 2014. The system is operational and upon receipt of final deliverables will be closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$240,260.00	$157,920.00
Other State Funding	$0.00	$0.00
Total State	**$240,260.00**	**$157,920.00**
Required Local Match	$12,645.00	$12,645.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$252,905.00**	**$170,565.00**

Teller Wind Analysis

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bering Straits
AEDG Project Code	10194

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	297	Teller Wind Analysis	2195464	410054	Feasibility	7/1/09	6/30/15	Active

Grant 2195464: Teller Wind Analysis

Project Scope: This is a grant for feasibility and reconnaissance including: permitting, purchasing, transporting and installing a met tower; studying the wind resource for one year; and conducting a geotechnical investigation to determine the soil conditions and needed engineering at the site. A conceptual design will be created based on the outcome of the met tower recordings and geotechnical investigation.

Project Status: The original 40-meter met tower site proved to have a low wind resource so a new site along the road between the dump and the gravel pit south of the airport was established on May 26, 2012 with the installation of a 50-meter met tower. Data collection for this project is complete. Both towers have been decommissioned. A wind feasibility report is in progress. With the loss of the intertie between Teller and Brevig Mission, a wind energy project is not economically feasible at this time due to the small system load with just a single village.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$117,610.00	$98,165.00
Other State Funding	$0.00	$0.00
Total State	**$117,610.00**	**$98,165.00**
Required Local Match	$6,190.00	$5,167.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$123,800.00**	**$103,332.00**

Unalakleet Wind Farm

Grantees	Unalakleet Valley Electric Co (Utility-Cooperative)
Technology Type	WIND TO HEAT
Region	Bering Straits
AEDG Project Code	10053

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	50	Unalakleet Wind Farm Construction	2195401	410031	Construction	8/20/08	12/31/11	Closed

Grant 2195401: Unalakleet Wind Farm Construction

Project Scope: The project is to install six NW100 wind turbines in Unalakleet. It was designed along with a new powerhouse through the Rural Power System Upgrades (RPSU) program. The project has a fast acting boiler tied into the diesel heat recovery loop.

Project Status: The project is fully commissioned and operating as designed. Total project costs (including CDQ contribution) were closer to $6 million. The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$4,000,000.00	$4,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$4,000,000.00**	**$4,000,000.00**
Required Local Match	$164,340.00	$201,492.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$4,164,340.00**	**$4,201,492.00**

Lake and Peninsula Borough Wood Boilers

Grantees	Lake and Peninsula Borough (Local Government)
Technology Type	BIOMASS
Region	Bristol Bay
AEDG Project Code	10065

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	63	Lake Peninsula Borough Wood Heating Final Design	2195406	402026	Final Design	8/20/08	12/31/10	Closed
4	681	Lake and Peninsula Wood Boilers	7040010	402026	Construction	7/1/11	6/30/13	Active

Grant 2195406: Lake Peninsula Borough Wood Heating Final Design

Project Scope: The funds are for feasibility studies to install High Efficiency Low Emissions (HELE) wood boilers in 5 communities to provide heat to the local schools and adjacent teacher housings. The communities to be considered are Pedro Bay, Newhalen/Iliamna, Nondalton, Kokhanok, and Port Alsworth.

Project Status: The project is complete.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$77,000.00	$77,000.00
Other State Funding	$0.00	$0.00
Total State	**$77,000.00**	**$77,000.00**
Required Local Match	$18,000.00	$18,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$95,000.00**	**$95,000.00**

Grant 7040010: Lake and Peninsula Wood Boilers

Project Scope: This project proposes the final design and construction for a wood boiler for the Kokhanok community. A cordwood boiler system will be used to heat two buildings: the Kokhanok Village Council Building and the Community Building. This project will deliver project scoping and contractor solicitation, permit applications and approvals, a resolution of land use and right of way issues, final system design, construction, start-up and commissioning.

Prerequisites for AEA grant reimbursement are acceptance of: * Conceptual Design Report * Demonstrated acceptable efficiency and emission levels for selected heating technology (Garn or equal technology) * Business/operational plan including staffing plans and a sustainable long-term fuel supply contract in each burn location.

Project Status: This project is operational and heating the Kokhanok Village Council Building and the Community Building. The project will be closed out pending a final inspection.

AEA will fund the final design and construction.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$250,000.00	$203,421.41
Other State Funding	$0.00	$0.00
Total State	**$250,000.00**	**$203,421.41**
Required Local Match	$45,000.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$295,000.00**	**$203,421.41**

New Stuyahok Heat Recovery

Grantees	Southwest Regional School District (Government Entity - School District)
Technology Type	HEAT RECOVERY
Region	Bristol Bay
AEDG Project Code	10413

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	944	New Stuyahok Heat Recovery	7060944	403068	Construction	7/1/13	12/31/15	Active

Grant 7060944: New Stuyahok Heat Recovery

Project Scope: This grant consists of $486,000 from Round VI of the Renewable Energy Fund for design and construction of heat recovery project to capture the recovered heat from the AVEC power plant cooling system, which will involve installing heat exchangers at the plant and school boiler module with appropriate pumps and controls at both sites and ˜700 feet of underground piping between the plant and school boiler module.

The Preliminary Heat Recovery Assessment for the AVEC Power Plant and New Stuyahok School project was completed on September 19, 2012.

The total project cost is $548,000 with $62,000 of in-kind contribution provided by Southwest Region School District as a match.

Southwest Region School District (SRSD) is the grantee. SRSD and AVEC must finalize a heat sales agreement; a copy must be submitted to AEA before construction funds are released to grantee. Similarly, a final design must be accepted by AEA for review before construction funds are released to the grantee.

The final reimbursement of grant funds will not be disbursed without an O&M reporting plan accepted by the AEA Project Manager. AEA may retain up to 10% of the contributed grant funds until the grantee has submitted an acceptable O&M reporting plan.

Project Status: The construction for this project is nearing completion. Start-up is anticipated for fall 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$486,000.00	$258,159.71
Other State Funding	$0.00	$0.00
Total State	**$486,000.00**	**$258,159.71**
Required Local Match	$62,000.00	$47,100.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$548,000.00**	**$305,259.71**

Togiak Waste Heat Recovery Project

Grantees	City of Togiak (Local Government)
Technology Type	HEAT RECOVERY
Region	Bristol Bay
AEDG Project Code	10363

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	858	Togiak Waste Heat Recovery Project	7050858	403056	Construction	7/1/12	6/30/16	Active

Grant 7050858: Togiak Waste Heat Recovery Project

Project Scope: The proposed project will design and construct a heat recovery system between the Alaska Village Electric Cooperative (AVEC) power plant and the end-user community buildings: 1) Water Treatment Plant, 2) Clinic, 3) Police Station, 4) City Office, and 5) Old School Community Activity Building. These community buildings are within a 500 foot radius of the AVEC power plant, offering an excellent opportunity to capture a maximum amount of waste heat from the plant for hydronic heating. The new system will capture jacket water heat generated by the AVEC plant that is currently wasted to the atmosphere by power plant radiators. The recovered heat will be transferred by insulted glycol piping to the end-users. The new system will tie into the end-users heating systems using heat exchangers, control mechanisms, and any required upgrades to the existing building hydronic systems.

The City of Togiak, in collaboration with Alaska Native Tribal Health Consortium (ANTHC), will construct this heat recovery system to connect waste heat from AVECs generating station to the water treatment plant, clinic, police station, City Office, and the Old School Community Activity Building. The project will displace approximately 13,700 gallons of diesel per year according to a 2010 Heat Recovery Analysis. A detailed Heat Recovery Analysis was completed for the City of Togiak and ANTHC in June 2010 by Alaska Energy and Engineering, Inc.

Project Status: TThe City of Togiak is working with Summit Consulting to prepare 35% design drawings for a design-build project. The project was on hold as of September 2015, pending Denali Commission funding for a new AVEC powerhouse. The design will be adapted to the new powerhouse location and layout. As of January 2016, AVEC reports that it has full funding for power house construction. The city is planning on proceeding with the design of a heat recovery system.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$443,030.00	$46,660.28
Other State Funding	$0.00	$0.00
Total State	**$443,030.00**	**$46,660.28**
Required Local Match	$43,150.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$486,180.00**	**$46,660.28**

Chignik Lagoon Hydroelectric

Grantees	Chignik Lagoon Village Council (Government Entity - Tribal Council), Chignik Lagoon Power Utility (Utility-Government)
Technology Type	HYDRO
Region	Bristol Bay
AEDG Project Code	10017

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	14	Chignik Lagoon Hydroelectric Final Design	2195389	407036	Final Design	8/20/08	6/30/13	Closed
5	836	Packer's Creek Hydroelectric Project	7050836	407091	Construction	7/1/12	12/31/15	Active
7	1036	Packers Creek Hydroelectric Project Phase II	7071036	407091	Construction	7/1/14	12/31/15	Active

Grant 2195389: Chignik Lagoon Hydroelectric Final Design

Project Scope: This project is to complete permitting and final design of a hydroelectric project on Packers Creek. Surveying, stream gauging, geology investigation, construction cost estimate, turbine and generator performance specifications, and controls performance specifications will also be completed.

Project Status: The portion of the project is complete. This grant will be closed with the phase 2 grant 7050836. Permitting and final design are completed

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$150,000.00	$150,000.00
Other State Funding	$0.00	$0.00
Total State	**$150,000.00**	**$150,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$150,000.00**	**$150,000.00**

Grant 7050836: Packer's Creek Hydroelectric Project

Project Scope: The grant is to fund construction of the 177 kW run-of-river Packers Creek Hydroelectric Project to serve the community of Chignik Lagoon. The project features include a 9-foot tall concrete dam/intake structure, a 3,260 foot long penstock and access trail, a powerhouse, and a 1,750 foot long overhead power line to connect to the existing electrical distribution system.

Project Status: The Project become operational in Apr 2015 and was commissioned in Aug 2015. Approximately 20k of funds remain in the grant.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,993,496.00	$1,993,496.00
Other State Funding	$0.00	$0.00
Total State	**$1,993,496.00**	**$1,993,496.00**
Required Local Match	$523,000.00	$523,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,516,496.00**	**$2,516,496.00**

Grant 7071036: Packers Creek Hydroelectric Project Phase II

Project Scope: Supplemental grant funding to complete construction of the Packers Creek Hydroelectric Project.

Project Status: The Project become operational in Apr 2015 and was commissioned in Aug 2015. Approximately 106k of funds remain in the grant. Remaining work on the project includes some road and ditch maintenance in the spring of 2016 and final site restoration and de-mob.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,352,700.00	$1,847,547.43
Other State Funding	$0.00	$0.00
Total State	**$2,352,700.00**	**$1,847,547.43**
Required Local Match	$520,000.00	$466,828.24
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,872,700.00**	**$2,314,375.67**

Indian Creek Hydro

Grantees	City of Chignik (Local Government)
Technology Type	HYDRO
Region	Bristol Bay
AEDG Project Code	10043

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	40	Indian Creek Hydro Feasibility Study	2195388	407034	Feasibility	8/20/08	12/31/14	Active

Grant 2195388: Indian Creek Hydro Feasibility Study

Project Scope: Work under this grant is to study engineering, electronics, and economics of restoring the antiquated hydropower system on Indian Creek in Chignik, culminating in a feasibility report. Wetlands, hydrology, economic analysis, conceptual design, and cost estimate will be completed. The feasibility study will determine the actual potential of the resource and include conceptual design and project configuration, both of which will affect the potential energy production. Before expenditure of any grant funds, an agreement that ensures access to the resource has to be signed by City and Trident Seafoods.

Project Status: The final feasibility report has been completed with recommendations to proceed with design and permitting of the proposed project. Project is in the close-out process.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$207,500.00	$194,869.92
Other State Funding	$0.00	$0.00
Total State	**$207,500.00**	**$194,869.92**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$207,500.00**	**$194,869.92**

Knutson Creek Hydroelectric Project Design and Permitting

Grantees	Pedro Bay Village Council (Government Entity - Tribal Council)
Technology Type	HYDRO
Region	Bristol Bay
AEDG Project Code	10418

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	976	Knutson Creek Hydroelectric Project-Design and Permitting	7060976	407103	Final Design	7/1/13	5/31/16	Active

Grant 7060976: Knutson Creek Hydroelectric Project-Design and Permitting

Project Scope: Permitting and final design of a run-of-river hydro project to power and heat the community.

Project Status: 9/15: the grantee received FERC's notice of non-jurisdictional status. Design and permitting are ongoing. As of Sep 2015 approximately 250k in grant funds are available for the design and remaining permitting work.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$290,000.00	$41,370.58
Other State Funding	$0.00	$0.00
Total State	**$290,000.00**	**$41,370.58**
Required Local Match	$2,500.00	$1,810.43
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$292,500.00**	**$43,181.01**

Nushagak Area Hydropower Project

Grantees	Nushagak Electric and Telephone Cooperative (Utility-Cooperative)
Technology Type	HYDRO
Region	Bristol Bay
AEDG Project Code	10009

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	6	Nushagak Area Hydropower Project	2195419	407035	Feasibility	8/20/08	6/30/14	Closed
3	435	Nushagak Area Hydropower Project 2	7030005	407069	Feasibility	7/1/10	7/31/10	Active

Grant 2195419: Nushagak Area Hydropower Project

Project Scope: The project scope is being amended to account for a change in the licensing process and to increase the budgets for several already approved tasks. The project originally was found to be non-jurisdictional by the Federal Energy Regulatory Commission (FERC). However, in the Spring of 2012, the licensing approach was changed to voluntarily fall under FERCs licensing process to provide for more certainty of process and timely responses from resource agencies. Nushagak Electric and Telephone Cooperative (NETC) has requested to use the Alternative Licensing Process. They received a FERC Preliminary Permit for the project in April 2012. The amendment increases the allocated grant budget by $1,005,000 to a new total of $2,030,000. The balance of the grant funding remains unallocated at $2,001,500. The following task budgets are increased by this amendment: Phase 1 Feasibility Study Lake Elva & Grant Lake ($200,000), site control ($5,000), stream gauging ($100,000), meetings ($25,000), resource study recon ($35,000) and environmental studies ($640,000). The increase in environment study funding will benefit the following resource-specific studies: fisheries, water quality, bathymetry, instream flow, wildlife and cultural resources. The engineering budget increase will support more in depth analysis based upon improved hydrology and environmental data, and be expanded to include operations modeling, LIDAR surveys and a detailed transmission line feasibility study. It is expected all deliverables for the expanded budget tasks will be completed by January 2013, at which time a go-no-go decision point will be made to evaluate the future direction for this project.

Project Status: The Conceptual Feasibility Study (October 2013) has been completed and results indicated that both of the Grant Lake Project Alternatives analyzed would be economically feasible (Benefit/Cost Ratio greater than 1.0), under the economic conditions analyzed. The Lake Elva Project, however, would not be economically feasible (Benefit/Cost Ratio less than 1.0) under any of the base conditions analyzed.

Recommendations for additional work include assessing load growth, integration with wind and other sources of generation, continue with the FERC licensing of the Grant Lake Project, conduct additional geotechnical investigations, and perform additional hydrological analysis particularly for winter flows.

The study includes a transmission study that contradicts the finding of feasibility in the main report. Also the economical assumptions are limited to a single case that has an unrealistic growth rate for fuel cost. Overall the feasibility effort appears flawed in the scope of analysis, assumptions, conclusions, and recommendations.

Enabling legislation was enacted authorizing these projects in the Wood-Tikchik State Park prior to the completion of this study and the Chikuminuk study which has been shown to be a more economical project. Further action on these projects is not expected at this time.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,873,223.18	$1,873,223.18
Other State Funding	$25,000.00	$25,000.00
Total State	**$1,898,223.18**	**$1,898,223.18**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,898,223.18**	**$1,898,223.18**

Grant 7030005: Nushagak Area Hydropower Project 2

Project Scope: The scope of work for this grant was added and funded with uncommitted funds remaining in the existing Nushagak Hydropower Project grant, 2195419.

Project Status: $700,000 of the uncommitted Round I funds, 2195419, were made available for completion of feasibility activities; therefore, this grant was cancelled before grant award.

Port Alsworth Hydroelectric

Grantees	Alaska Green Energy (Independent Power Producer)
Technology Type	HYDRO
Region	Bristol Bay
AEDG Project Code	10242

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	436	Port Alsworth Hydroelectric Construction	7030008	407073	Feasibility	7/1/10	12/31/11	Closed

Grant 7030008: Port Alsworth Hydroelectric Construction

Project Scope: Project is to complete a reconnaissance study of a hydroelectric project on the Tanalian River near Port Alsworth. The grant consists of 2 successive phases. If findings of phase 1 indicate the project should move forward, Phase 2 will be authorized by the Authority, culminating in a reconnaissance report.

Project Status: The project is closed. The grant was terminated before any funds were expended due to lack of progress by the grantee.

Tazimina Hydroelectric Project Capacity Increase

Grantees	Iliamna, Newhalen, Nondalton Electrical Coop. (Utility-Cooperative)
Technology Type	HYDRO
Region	Bristol Bay
AEDG Project Code	10414

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	908	Tazimina Hydroelectric Project Capacity Increase	7060908	407098	Final Design	7/1/13	6/30/16	Active

Grant 7060908: Tazimina Hydroelectric Project Capacity Increase

Project Scope: Iliamna Newhalen and Nondalton Electric Cooperative (INNEC) will conduct a feasibility study to determine if the capacity of the existing Tazimina Hydroelectric Project should be increased by replacing either one or both of the existing turbine-generator units with larger generating units. Increased generation capacity will allow INNEC to capture additional energy that is available at the project site. Current annual generation is in excess of 4 million kWhs. Of this amount, hydropower generation currently supplies an average of 82% of the power generated, with diesel gensets providing the balance. The potential increase in available annual energy is conceptually estimated to be between 2 and 2.6 million kWhs. The existing hydropower nameplate capacity is 824 kW and it is anticipated the new total capacity could be increased up to 1,500 kW. This feasibility study will provide a detailed analysis of this estimate. Additionally, the study will analyze the existing and future markets for this new hydro energy and estimate the revenue and impact of an expanded project upon the existing INNEC power sales rate structure. Additionally, a procurement package will be prepared for the new equipment if the project is found to be feasible. The pros of this project are that the hydroelectric project has already been constructed and provisions were included in the original design to allow for a future expansion in capacity. As such, there will be no modifications required for the intake, penstock, powerhouse or tailrace. As such, the $/kW for the additional capacity is expected to be low. The con is that there might not be enough load in the three communities to economically justify the project. There are many potential customers in the service area that would benefit from excess power sales, potentially in the form of dispatchable heating. A few are, Iliamna Air Taxi, Pebble Limited Partnership, State of Alaska, City of Newhalen, City of Nondalton, Iliamna Trading and other local businesses.

At this time, INNEC has an interruptible power sales agreement with Lake and Peninsula School District for the Newhalen School and Nondalton School. The Tazimina River provides the water for most of the electrical energy needs of INNEC. The Tazimina Hydroelectric Project is a conventional run-of-river hydroelectric operation that uses the natural flow of the Tazimina River. The project has no impoundment; river flows are diverted into a penstock, through turbine-generators installed in a powerhouse, and returned to the river at the base of the falls. The Tazimina hydro plant currently has two Francis turbines made by Gilkes. Each are connected to 412 kW Kato Generators. These units are 17 years old. The remaining energy resource is diesel which is brought in intermittently by barge in the summer months and mostly flown in. The existing project is subject to regulations of both State and Federal agencies. As there will be no land disturbing activities, a minor permitting effort is expected related to replacement of the existing generating units. Authorization is expected to be required from Alaska Department of Natural Resources (ADNR), Alaska Department of Fish and Game (ADF&G) and the Federal Energy Regulatory Commission (FERC).

The total anticipated project cost is currently estimated at $2.6 million.

Project Status: The grant agreement was signed on 7/29/2013. The grant was amended in 9/15 to change the final scope, after the feasibility study, from a turbine generator replacement to increase capacity to improvements to the intake and powerhouse efficiency.

The reimbursement request of Jun 2015 indicates approximately 60k in grant funds remain with the next steps continued assessment of improvements aimed at increasing the water intake during winter months and reducing powerhouse energy consumption.

In December of 2016 consultants for the Grantee performed load and water measurements while onsite to better characterize and strategize on potential hydraulic improvements. While onsite consultants also discussed potential energy efficiency measures for the powerhouse.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$160,000.00	$99,859.55
Other State Funding	$0.00	$0.00
Total State	**$160,000.00**	**$99,859.55**
Required Local Match	$30,000.00	$5,382.38
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$190,000.00**	**$105,241.93**

Kvichak River RISEC

Grantees	Igiugig Village Council (Local Government)
Technology Type	OCEAN/RIVER
Region	Bristol Bay
AEDG Project Code	10165

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	265	Kvichak River RISEC Feasibility and Conceptual Design	2195466	408002	Feasibility	7/1/09	9/30/15	Active

Grant 2195466: Kvichak River RISEC Feasibility and Conceptual Design

Project Scope: The Village of Igiugig is located at the outlet of Lake Iliamna, 240 air miles southwest of Anchorage, on the southern shore of the Kvichak River. Igiugig has a year-round population of 56 (predominantly Yupik, Aleut, and Athabascan) rising in summer to about 75. Igiugig also provides goods and services to six area tourism lodges and their respective clients and workforce of 90 additional persons per week. This lake outlet location provides an ideal site for the study, testing and implementation of river-in-stream energy conversion that will also benefit other Alaska communities considering this form of renewable energy. A RISEC plant will convert available river kinetic energy into electric power, and feed into the existing Igiugig electric grid to reduce diesel fuel consumption at the Igiugig power plant.

Direct beneficiaries include the Lake and Peninsula School District (LPSD) and Igiugig electric service customers.

Project Status: The Igiugig Village Council (IVC) partnered with ORPC and the AEA EETF program to install the RivGen turbine in the Kvichak river. The turbine was deployed successfully and produced power during the summer. The turbine was removed in the fall. Summer of 2015 IVC again partnered with ORPC and installed the Rivgen for a second time. This deployment went exceptionally well. The turbine was pulled out in the fall. IVC has been working with FERC to move their licensing to the next stage. IVC has is currenly seeking funds to deploy version 2 of ORPCs RivGen on a long term basis.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$718,175.00	$698,552.18
Other State Funding	$0.00	$0.00
Total State	**$718,175.00**	**$698,552.18**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$718,175.00**	**$698,552.18**

Chignik Lake Area Wind-Hydro

Grantees	Lake and Peninsula Borough (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10064

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	62	Chignik Lake Area Wind-Hydro Final Design	2195409	410033	Feasibility	8/20/08	6/30/12	Closed

Grant 2195409: Chignik Lake Area Wind-Hydro Final Design

Project Scope: The proposed project is a wind/hydro hybrid intertie feasibility study for Chignik Bay, Chignik Lagoon and Chignik Lake. There is existing wind data confirming class 5 wind in the area, strong enough to be a good energy source. Part of the feasibility study will involve determining the most advantageous site for wind turbines by collecting supplemental met data. The Chignik Alaska Draft Small Hydropower Feasibility Report and EIS, by the Army Corps of Engineers, July 1984, evaluated hydro resources at Packers Creek, Mud Bay Lake and Indian Creek. Study found that Indian Creek had the best potential for economical development.

Project Status: The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$74,850.60	$74,850.60
Other State Funding	$0.00	$0.00
Total State	**$74,850.60**	**$74,850.60**
Required Local Match	$9,854.30	$9,854.30
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$84,704.90**	**$84,704.90**

Egegik Wind Feasibility Study

Grantees	Lake and Peninsula Borough (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10430

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	912	Egegik Wind Feasibility Study	7060912	410088	Feasibility	7/1/13	12/31/15	Active

Grant 7060912: Egegik Wind Feasibility Study

Project Scope: Lake and Peninsula Borough will complete a feasibility study investigating the advisability of building a wind farm along with any necessary controls or equipment needed to integrate the wind farm into the Egegik electrical grid.

A minimum 12 month long meteorological study will be performed and a wind resource analysis written. Electrical load data will be gathered from the power plant to identify hourly load data and dispatchable electrical loads. Thermal load data will be collected from sites being considered for secondary loads. Geotechnical reconnaissance work will be completed. The feasibility analysis will address the diesel power plant and distribution system to identify upgrades that are needed to integrate wind power. A variety of wind turbine models and quantity configurations will be considered.

Project Status: The grant is in place as of May 28, 2014. Lake and Peninsula Borough is working with V3 Energy to complete the scope of work. A meteorlogical tower was purchased and installed in August 2014. After one year of data, the wind resource looks to be a Class 5 (Excellent). HOMER modeling has started. Holding discussions with community with regards to their specific goals for the wind project, especially in light of the school being closed due to low enrollment. This would reduce winter electric loads and remove a significant secondary thermal load from the proposed energy system.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$60,000.00	$40,584.18
Other State Funding	$0.00	$0.00
Total State	**$60,000.00**	**$40,584.18**
Required Local Match	$6,666.00	$3,609.37
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$66,666.00**	**$44,193.55**

Igiugig Wind Turbine Design

Grantees	Igiugig Village Council (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10428

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1072	Igiugig Wind Resource Feasibility/Conceptual Design	7071072	410098		7/1/14	9/30/16	Active

Grant 7071072: Igiugig Wind Resource Feasibility/Conceptual Design

Project Scope: Igiugig Village Council will complete a feasibility study and conceptual design of a wind farm along with any necessary controls or equipment needed to integrate the wind farm into the local electrical grid. A minimum 12 month long meteorological study will be performed and a wind resource analysis written. Electrical load data will be gathered from the power plant to identify hourly load data and dispatchable electrical loads. Thermal load data will be collected from sites being considered for secondary loads. Geotechnical reconnaissance work will be completed. The feasibility analysis will address the diesel power plant and distribution system to identify upgrades that are needed to integrate wind power. A variety of wind turbine models and quantity configurations will be considered.

Project Status: Lake and Peninsula Borough is working with V3 Energy to complete the scope of work. AEA is revising the earlier wind resource report to comply with current best practices. The grant agreement was executed in November 2015. AEA revision of the wind resource report is nearly complete.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$80,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$80,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$80,000.00**	**$0.00**

Kokhanok Wind - Diesel

Grantees	Kokhanok Electric Utilities (Utility-Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10389

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	966	Kokhanok High-penetration Wind Energy	7060966	410089	Construction	7/1/13	12/31/15	Active

Grant 7060966: Kokhanok High-penetration Wind Energy

Project Scope: Kokhanok Electric will complete final design, construction and startup of any necessary controls or equipment needed to integrate the existing wind farm and wind-diesel components into the Kokhanok electrical grid.

By the end of 2011, the high development costs of the Kokhanok wind-diesel project, funded by a 2006 Legislative Appropriation, drove the original system designer, Sustainable Automation, out of business. The focus of this funding is to design and implement modifications that will allow a medium-penetration wind system with thewind turbines already installed.

Project Status: The grant agreement is in place. The grantee is reviewing bids from two subcontractors to get the system running in medium-penetration mode and demonstrate stability for six months of operation. Sustainable Power Systems, LLC has been dropped from consideration. The new grant amendment restructures the scope for Phase 1: Install new PLC controllers to automatically control diesel plant and allow for remote access and data collection for development in Phase 2: Complete a functioning medium penetration wind system with integrated secondary load controller to be tested by ACEP and installed in Kokhanok.

The grantee is seeking additional funding from other sources to purchase a commercially ready system controller. The project is on hold until the funding determination has been made.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$185,000.00	$62,030.97
Other State Funding	$0.00	$0.00
Total State	**$185,000.00**	**$62,030.97**
Required Local Match	$5,000.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$190,000.00**	**$62,030.97**

Lake Pen Borough Wind Feasibility Study

Grantees	Lake and Peninsula Borough (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10066

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	64	Lake Pen Borough Wind Feasibility Study	2195374	410032	Feasibility	8/20/08	6/30/12	Active

Grant 2195374: Lake Pen Borough Wind Feasibility Study

Project Scope: This project is a regional Resource Assessment/Feasibility Analysis/Conceptual design of Wind Power opportunities around the Lake and Peninsula Borough in the communities of Pedro Bay, Port Alsworth, Egegik, Port Heiden and Pilot Point. It is designed to build upon existing wind resource assessment efforts, including wind met tower data in some communities, as well as data from existing micro-scale (10kW) wind turbines that are in operation.

Project Status: The Port Heiden study is complete. The Port Alsworth and Chignik Lagoon towers were installed as of August 2010. Knight Piesold published wind resource reports for each community. The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$184,000.00	$184,000.00
Other State Funding	$0.00	$0.00
Total State	**$184,000.00**	**$184,000.00**
Required Local Match	$40,000.00	$60,562.47
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$224,000.00**	**$244,562.47**

Levelock Wind Reconnaissance Study

Grantees	Lake and Peninsula Borough (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10429

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	911	Levelock Wind Reconnaissance Study	7060911	410087	Feasibility	7/1/13	12/31/15	Active

Grant 7060911: Levelock Wind Reconnaissance Study

Project Scope: The Lake and Peninsula Borough will complete a reconaissance level wind study in Levelock. The study will determine the advisability of performing a feasibility study to create a Wind-Diesel Conceptual Design Report.

Project Status: The grant is in place as of May 28, 2014. Lake and Peninsula Borough will work with V3 Energy to complete the scope of work.

Lake and Peninsula Borought has added money to this project in order to install a 34 meter meterological tower to collect bankable data. The met tower was installed in July 2014. The met tower is indicating class 2 to 3 winds. A wind resource report will be written after a full year of data is collected.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$10,000.00	$10,000.00
Other State Funding	$0.00	$0.00
Total State	**$10,000.00**	**$10,000.00**
Required Local Match	$1,000.00	$1,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$11,000.00**	**$11,000.00**

New Koliganek Wind Heat Recovery Project

Grantees	New Koliganek Village Council (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10321

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	684	New Koliganek Wind Heat Recovery Project	7040011	410072	Feasibility	7/1/11	12/31/15	Active

Grant 7040011: New Koliganek Wind Heat Recovery Project

Project Scope: This grant consists of $105,050 from Round IV of the Renewable Energy Fund for a wind and heat recovery feasibility assessment in Koliganek. A wind resourcee analysis was already completed in 2006. The grantee will complete geotechnical reconnaissance to determine the advisability of installing wind turbines. The study will also consider heat recovery from the diesel generators.

Project Status: The grant in place. A draft Conceptual Design Report (CDR) has been submitted. Marsh Creek, LLC will be working with the Rural Power System Upgrades Program during the new power plant design to finalize the CDR.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$105,050.00	$77,853.48
Other State Funding	$0.00	$0.00
Total State	**$105,050.00**	**$77,853.48**
Required Local Match	$7,000.00	$2,575.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$112,050.00**	**$80,428.48**

New Stuyahok Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10197

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	515	New Stuyahok Wind	7030006	409025	Feasibility	7/1/10	12/31/15	Active

Grant 7030006: New Stuyahok Wind

Project Scope: This project will complete the feasibility assessment, including "resolution of land and regulatory issues" and "environmental analysis" for a proposed 300kW wind project with associated integration components in New Stuyahok.

Project Status: The grant agreement is in place. The met tower was installed on January 29, 2012 at the north end of the old runway. The Alaska Village Electric Cooperative (AVEC) continues to collect wind resource data. Manpower and a new data card have been dispatched for 4Q2012 to recover wind data. Stuyahok Limited did not agree with the appraisal of the Old Airport land conducted by the Alaska Department of Transportation and Public Facilities (ADOT&PF). There is disagreement about the value of the existing buildings on the land. This land was expected to be a key area for the placement of wind turbines. The issue will need to be resolved if construction at this site is deemed attractive after the feasibility study is completed. A draft conceptual design report (CDR) has been completed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$142,500.00	$111,583.00
Other State Funding	$0.00	$0.00
Total State	**$142,500.00**	**$111,583.00**
Required Local Match	$7,500.00	$6,379.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$150,000.00**	**$117,962.00**

Nushagak Community Wind Power Project

Grantees	Nushagak Electric and Telephone Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10302

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	9001	Dillingham Area Wind/Hydro Assessment	2195480	410019	Feasibility	6/1/08	12/31/13	Closed

Grant 2195480: Dillingham Area Wind/Hydro Assessment

Project Scope: This grant consists of $100,000 in Denali Commission funding from the 2008 Alternative Energy Request For Proposals. The funding will support feasibility assessment and conceptual design of integrating utility-scale wind generation into Nushagak Cooperatives electrical system. A $25,000 match is in the form of a hydroelectric and transmission study under Renewable Energy Fund grant 2195419.

Project Status: The grant is in place effective October 28, 2010. The grant was transferred from Bristol Bay Area Health Corp to Nushagak Cooperative. Nushagak Electric signed a contract with Marsh Creek to perform the study. A power plant visit completed by Marsh Creek. The final Hydro/Wind Integration Report written by WH Pacific has been received by AEA. The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$0.00	$0.00
Other State Funding	$97,637.49	$97,637.49
Total State	**$97,637.49**	**$97,637.49**
Required Local Match	$21,059.37	$21,059.37
Federal Grant Funding	$97,637.49	$97,637.49
Total Project Costs	**$118,696.86**	**$118,696.86**

Pilot Point Wind Power & Heat

Grantees	City of Pilot Point (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10139

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	486	Pilot Point Wind Power & Heat	7030007	409026	Construction	7/1/10	12/31/15	Active

Grant 7030007: Pilot Point Wind Power & Heat

Project Scope: This grant consists of $1,421,240 from Round III of the Renewable Energy Fund for a wind construction project in Pilot Point. $201,000 in grant funds is allocated for conceptual design, final design and permitting. $1,370,240 is currently unallocated for construction. Allocation of final design funds will be made through an amendment to this grant after the conceptual design report has been accepted by the Authority. Allocation of construction funds will be made through an amendment to this grant after the 65% design report has been accepted by the Authority. The total project cost is $1,571,240 with a match of $150,000 provided by the grantee. City of Pilot Point will complete a meteorological tower study, conceptual design, final design, permitting, construction and startup of a wind farm and heat recovery boiler, along with any necessary controls or equipment needed to integrate the wind farm into the Pilot Point electrical grid. It is expected that the wind farm will be approximately 100 kW in nameplate capacity and a transmission line from the wind farm to the power plant will need to be constructed.

Project Status: A meteorological study was performed from 2004-2006 with equipment attached to the Bergey wind towers, readings were taken at 10 meters and 30 meters. Over the three year period, about 50% of the data was lost and one month was not collected at all during the three year period. The calculated terrain roughness from the data was not consistent with the roughness of other studies with similar terrain and vegetation. Given the lack of consistent data, the questions regarding the calculated roughness, the placement of the data collection equipment and the off-set on the towers, there is a high probability that all the data could have been compromised. Based on these findings, and at the suggestion of AEA, the City of Pilot Point agreed to perform another meteorological study, this time using ten meter towers at multiple locations. Collecting data from multiple locations for a wind resource assessment provides the best analytical criteria for placement of the wind farm and the type(s) of turbines. The final site selection decision will also be based on site control, site access and development costs, transmission line construction costs and community preferences.

An amendment to change the scope of work and budget as well as to extend the grant is in place as of September 6, 2012. The grantee installed 10 meter masts at the old Bergey wind turbine site, Airport Hill and near the Post Office. A draft conceptual design report was been submitted that proposed all high penetration systems. A review of the CDR was submitted to the grantee and a revised draft CDR was submitted. Issues with the modeling and proposed systems still remained. The City decided to change contractors and a kick-off meeting was held on February 10, 2015. It was agreed that most information required to finish the CDR has been collected. The contractor will provide a budget and timeline for the CDR and Design work and if necessary the grant will be amended. A budget for construction activities will not be provided until the 65% Design has been accepted by AEA.

A draft CDR was submitted to AEA and the recommended project was not economically viable. A review of the CDR was supplied to the grantee and a revised CDR submitted in January 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,421,240.00	$54,243.75
Other State Funding	$0.00	$0.00
Total State	**$1,421,240.00**	**$54,243.75**
Required Local Match	$150,000.00	$4,301.19
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,571,240.00**	**$58,544.94**

Port Heiden Wind Turbine Project

Grantees	Lake and Peninsula Borough (Local Government)
Technology Type	WIND
Region	Bristol Bay
AEDG Project Code	10323

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	686	Port Heiden Wind Turbine Project	7040009	410062	Final Design	7/1/11		Active

Grant 7040009: Port Heiden Wind Turbine Project

Project Scope: Lake and Pen Borough proposed a design and construction project for a 330kW wind turbine in Port Heiden. AEA has not yet accepted a conceptual design and thus has limited funding to permitting and design work. A very-high penetration wind system was proposed without full consideration of the integration requirements.

Project Status: The current diesel power house and electrical distribution system are not capable of supporting a utility-scale wind system. A RPSU conceptual design is tentatively scheduled to begin in 2015. The due diligence process has been initiated. Money from this grant may be combined with RPSU funding for a combined wind-diesel system design.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$250,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$250,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$250,000.00**	**$0.00**

Chistochina Central Wood Heating

Grantees	Cheesh'na Tribal Council (Government Entity - Tribal Council)
Technology Type	BIOMASS
Region	Copper River/Chugach
AEDG Project Code	10018

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	15	Chistochina Central Wood Heating Construction	2195380	402028	Construction	8/20/08	12/31/14	Active

Grant 2195380: Chistochina Central Wood Heating Construction

Project Scope: This is a proposed biomass project that will use wood pellets as a fuel. The system will be designed to displace 90% of the oil previously used in the facilities. The application is for Resource Assessment/Feasibility Analysis /Conceptual Design; Final Design and Permitting; and Construction. The following will be accomplished:

1) A wood pellet-fired district hydronic heating system will be integrated with existing heating systems in 5 village buildings including Washeteria, Library, Community Hall. Tribal Office, and Clinic/Multiuse Facility.

2) A wood pellet-fired boiler will be designed and constructed in an insulated 8'x20' ocean container for the four duplex housing units and the water distribution loop nearby. This will contain boiler, hydronic pumps, and related piping.

3) The pellet-fired boiler will be connected to the building hydronic system and located in an 8'x10' enclosure of the new office building. All other buildings will have pellet stoves or furnaces retrofitted into building. Oil-fired appliances will stay as ready backups. A central silo or hopper will serve as storage for bulk pellets for all heating units. This will be filled in by commercially made pellets from the existing Dry Creek pellet mill or the new mill that will be constructed this summer in Fairbanks.

Project Status: This project is in the construction phase, but is short of funds to complete the boiler installation. The community is seeking additional funding.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$500,000.00	$490,000.00
Other State Funding	$0.00	$0.00
Total State	**$500,000.00**	**$490,000.00**
Required Local Match	$12,000.00	$61,107.97
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$512,000.00**	**$551,107.97**

Cordova Community Biomass

Grantees	Native Village of Eyak (Local Government)
Technology Type	BIOMASS
Region	Copper River/Chugach
AEDG Project Code	10121

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	622	Cordova Community Biomass Feasibility	7040054	402115	Feasibility	7/1/11	12/31/13	Closed

Grant 7040054: Cordova Community Biomass Feasibility

Project Scope: The Community of Cordova is interested in pursuing a biomass heating system utilizing waste cardboard and the community burn pile as fuel sources. A previously completed pre-feasibility study by Dalson Energy concluded that the waste cardboard and burn pile did not have enough fuel to support a biomass project. "A viable community-scale biomass heating system will require harvesting of local forest feedstock."

This project will conduct a biomass feasibility study in the community of Cordova that includes a resource assessment of all available fuel sources - cardboard, wood waste from the burn pile, clearing of road right-of-ways, and other potential local wood harvest options. The resource assessment will investigate sustainable harvest amounts available, land ownership, and estimated delivered cost.

The project will also develop a protocol for a community energy audit and conduct a feasibility study that will examine the current heat loads and fuel usage in community buildings.

Project Status: This project is complete, and identified sufficient wood supplies to support a small-scale heating system in Cordova.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$63,998.83	$63,998.83
Other State Funding	$0.00	$0.00
Total State	**$63,998.83**	**$63,998.83**
Required Local Match	$3,000.00	$9,235.50
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$66,998.83**	**$73,234.33**

Cordova Wood Processing Plant

Grantees	Native Village of Eyak (Local Government)
Technology Type	BIOMASS
Region	Copper River/Chugach
AEDG Project Code	10029

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	26	Cordova Wood Processing Plant-Purchase and setup	2195399	402027	Construction	8/20/08	12/31/09	Closed

Grant 2195399: Cordova Wood Processing Plant-Purchase and setup

Project Scope: The Native Village of Eyak will use the grant funds for the purchase, shipping and set-up of a firewood processor in Cordova. The Native Village of Eyak has identified a specific system that will meet their needs (a Cord King Model 60, with certain upgrades as detailed in the grant application).

Project Status: The project has been completed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$136,760.00	$136,760.00
Other State Funding	$0.00	$0.00
Total State	**$136,760.00**	**$136,760.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$136,760.00**	**$136,760.00**

Gulkana Central Wood Heating

Grantees	Gulkana Village Council (Government Entity - Tribal Council)
Technology Type	BIOMASS
Region	Copper River/Chugach
AEDG Project Code	10005

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	2	Gulkana Central Wood Heating Construction	2195381	402030	Construction	8/20/08	12/31/10	Closed

Grant 2195381: Gulkana Central Wood Heating Construction

Project Scope: The project consists of a Final Design and Construction of wood pellet-fired heating systems to heat nine community buildings and to contribute heat to the village water distribution system. Wood pellets will be produced from the existing pellet mill.

A wood pellet-fired boiler will be designed and constructed in an insulated 8'x20' ocean container. This will contain the boiler, hydronic pumps, and related piping. The new office building will have an 8'x10' enclosure with a pellet-fired boiler connected to the building hydronic system. All other buildings will have pellet stoves or furnaces retrofitted into the building. Oil-fired appliances will stay as ready backups.

Project Status: This project has been completed and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$500,000.00	$500,000.00
Other State Funding	$0.00	$0.00
Total State	**$500,000.00**	**$500,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$500,000.00**	**$500,000.00**

Kenny Lake School Wood Fired Boiler

Grantees	Copper River School District (Local Government)
Technology Type	BIOMASS
Region	Copper River/Chugach
AEDG Project Code	10049

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1, 1	-46, 46	Kenny Lake School Wood Boiler-Planning & Design	2195302	402019	Final Design	6/1/08	6/30/15	Closed
4	649	Kenny Lake School Wood Fired Boiler	7040055	402019	Construction	7/1/11	6/30/15	Active

Grant 2195302: Kenny Lake School Wood Boiler-Planning & Design

Project Scope:

AEA will contract for the planning and feasibility services related to the installation of biomass fired boilers for heating the Kenny Lake School, including a building to house the boilers and heat exchangers. Tasks to also be accomplished are the preliminary design and final design of the facility, identification of license and permit needs, surveying for the project, geo-investigation, determining site control issues, conducting public meetings related to the project and any necessary research efforts.

The Copper River School District (CRSD) will provide a project coordinator that will interface with AEA, the CRSD Board and Superintendent for all input, comments, concerns, approvals, and co-ordination with school operations and maintenance staff. The project coordinator will also provide public awareness and education about the proposed project and address all issues and concerns as the project is developed. This position will also conduct periodic design reviews with CRSD staff and School Board and send formal comments to AEA and the design team.

Note: Additional grant funds of $120,000 were made available from the Renewable Energy Fund to complete the feasibility assessment and final design for this project.

Project Status: This project has been completed and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$120,000.00	$99,899.34
Other State Funding	$2,114.55	$2,114.55
Total State	**$122,114.55**	**$102,013.89**
Required Local Match	$10,000.00	$17,472.04
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$132,114.55**	**$119,485.93**

Grant 7040055: Kenny Lake School Wood Fired Boiler

Project Scope: The Copper River School District (CRSD) will construct a 1.8MBTU wood pellet fueled boiler at the Kenny Lake School. The project will tie into the existing heating system for the school complex and will include pellet storage.

Project Status: Construction is scheduled for summer/fall 2014.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$565,485.00	$548,481.89
Other State Funding	$0.00	$0.00
Total State	**$565,485.00**	**$548,481.89**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$565,485.00**	**$548,481.89**

Mentasta Woody Biomass Community Facility Space Heating Project

Grantees	Mentasta Traditional Council (Government Entity - Tribal Council)
Technology Type	BIOMASS
Region	Copper River/Chugach
AEDG Project Code	10376

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	982	Mentasta Community Facilities Woody Biomass Space Heating Project	7060982	402127	Construction	7/1/13	6/30/15	Active

Grant 7060982: Mentasta Community Facilities Woody Biomass Space Heating Project

Project Scope: This grant consists of $460,000 from Round VI of the Renewable Energy Fund for the design and construction of a small biomass district heating system which will supply heat to the school, teen center, council building, post office, and clinic in Mentasta. The total project cost is $510,000 with $50,000 of in-kind building contribution provided by Mentasta Traditional Council (MTC) as a match.

MTC is the grantee. MTC will complete the final design, permitting, construction and startup of a small biomass district heating system to supply heat to the school, teen center, council building, post office, and clinic. Rex Goosby has been contracted by MVC to provide construction management services during the project.

Project Status: This system is operational. The project is awaiting final deliverables before closeout.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$460,000.00	$460,000.00
Other State Funding	$0.00	$0.00
Total State	**$460,000.00**	**$460,000.00**
Required Local Match	$50,000.00	$50,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$510,000.00**	**$510,000.00**

Cordova Heat Recovery

Grantees	Cordova Electric Cooperative (Utility-Cooperative)
Technology Type	HEAT RECOVERY
Region	Copper River/Chugach
AEDG Project Code	10025

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	22	Cordova Heat Recovery Construction	2195407	403028	Construction	8/20/08	6/30/13	Closed

Grant 2195407: Cordova Heat Recovery Construction

Project Scope: The project is to capture waste heat by installing an Organic Rankine Cycle (ORC) heat recovery unit on a new high-efficiency, low-emissions diesel generator, which will increase diesel generator electrical production by an additional 4-6%.

The average electric production efficiency of CEC's Orca Power Plant is 13.65 kWh/gallon of diesel. CEC has already placed a deposit on and will purchase and install the new, efficient generator (characteristics: 3.6 MW rated, EMD 710 series, 20-cylinder). The efficiency of the new generator is expected to peak at 15 kWh/gallon. The addition of the ORC will increase the generator's fuel efficiency by nearly 20% over CEC's average fuel efficiency. The new generator will supplement CEC's existing fuel generators and meet emergency redundancy needs.

Marsh Creek Energy Systems has been selected to design and manage construction of expansion of the Orca Power Plant to accommodate a new generator and heat recovery unit including installation of both units.

Project Status: Since start-up, Cordova Electric has been operating almost exclusively on hydroelectric power with just short runs of the diesel system. The Organic Rankine Cycle only functions during extended runs of the diesel system and has not been required.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,780,000.00	$1,780,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,780,000.00**	**$1,780,000.00**
Required Local Match	$1,990,000.00	$2,017,652.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,770,000.00**	**$3,797,652.00**

Tatitlek Heat Recovery Project

Grantees	Tatitlek Village IRA Council (Utility-Government)
Technology Type	HEAT RECOVERY
Region	Copper River/Chugach
AEDG Project Code	10282

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	823	Tatitlek Heat Recovery Project	7050823	403057	Construction	7/1/12	6/30/16	Active

Grant 7050823: Tatitlek Heat Recovery Project

Project Scope: This project will update the 2006 mechanical design and construct a heat recovery system that will supply the Tatitlek Community Center, which houses the Village IRA Council administrative offices, from the power plant, 50 feet away. The generating station and administration building were designed to accommodate a heat recovery application when the power plant was refurbished in 2006, and the only phases remaining for this project are design update and construction. The project is estimated to displace 6,000 gallons of fuel oil.

At the grantees request, this project will be managed by AEA. Tim Sandstrom has been assigned as the project manager.

Project Status: The heat recovery is system is operational and final puch-list items are being addressed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$265,000.00	$262,153.67
Other State Funding	$0.00	$0.00
Total State	**$265,000.00**	**$262,153.67**
Required Local Match	$30,800.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$295,800.00**	**$262,153.67**

Allison Lake Hydro

Grantees	Copper Valley Electric Association (Utility-Cooperative)
Technology Type	HYDRO
Region	Copper River/Chugach
AEDG Project Code	10030

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	27	Allison Lake Hydro Feasibility Study	2195390	407038	Feasibility	8/20/08	12/31/13	Closed
6	930	Allison Creek Project	7060930	407038	Construction	7/1/13	12/31/15	Active
7	1015	Allison Creek Hydroelectric Project Construction	7071015	407038	Construction	7/1/14	12/31/15	Active

Grant 2195390: Allison Lake Hydro Feasibility Study

Project Scope: This project is to fund Licensing and Feasibility and Final Design portions of the project.

The project is located adjacent to the Prince William Sound, immediately south of Valdez. Allison Lake is estimated to provide approximately 35% of Copper Valley Electric Association's (CVEA) generation needs. When Allison Lake is added to the existing hydropower generated at Solomon Gulch, only 5% of CVEA power will be generated from fossil fuels. This allows CVEA to displace approximately 3,125,000 gallons of fuel per year, which equates to approximately $9,885,000 per year.

CVEA entered into a Professional Services Contract with Hatch Acres Corporation to provide consulting services for a pre-feasibility study, which was completed in February of 2008. The preliminary permit to secure and maintain priority to study the power potential of Allison Lake was awarded on September 4, 2008. At the conclusion of the 3-year permit, CVEA expects to file a license application for the project development.

Project Status: This grant is closed. The grantee's design team has completed 100% design. The license application was filed with FERC in August 2011, and the FERC Original License was issued August 2013. CVEA received a $10M legislative grant in 2012 to add to their construction budget (grant #7910012).

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,288,000.00	$2,288,000.00
Other State Funding	$0.00	$0.00
Total State	**$2,288,000.00**	**$2,288,000.00**
Required Local Match	$572,000.00	$573,134.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,860,000.00**	**$2,861,134.00**

Grant 7060930: Allison Creek Project

Project Scope: The Allison Creek Hydro project is funded through multiple grants and fund sources and the estimated final price of the project is $49 Million. A cap of 50% State funding has been applied to this project. This grant consists of $2,085,509 from Round VI of the Renewable Energy Fund and $2,085,509 in cash matching funds for construction of the Allison Creek Hydroelectric Project and Copper Valley Electric Association is the grantee. A Round VII Renewable Energy Fund grant contributes $5,914,500 with an addition $5,914,500 in cash matching funds for construction of the Allison Creek Hydroelectric Project. A Legislative appropriation contributed an addition $10,000,000 to the project. Copper Valley Electric Association will finance the balance of the project.

The project is run-of-river and will consist of the following primary features: a 130-foot-wide, 16-foot-high diversion structure on Allison Creek; a Coanda screened intake at the spillway conveying flows to the powerhouse; a 42 to 36-inch-diameter, 6,900-foot-long buried steel penstock including a 700-foot-long tunnel section; a powerhouse containing one horizontal Pelton turbine/generator unit with a total installed capacity of 6.5 megawatts; a 70.5-foot-long tailrace extending from the north side of the powerhouse to Allison Creek via a concrete channel and the existing creek bed; a 550-foot-long permanent access road to the powerhouse; and a 3.8-mile-long, 25 kilovolt transmission line connecting to an existing substation. The project is estimated to

provide 15,057 MWh during an average year, and up to 23,300 MWh when fully subscribed. Final design drawings have been reviewed by FERC and all construction permits have been obtained.

Project Status: The grant was executed on August 19,2014. During the 2014 construction season the road work was completed, the power plant structure was constructed, and work on the transmission line, penstock, generator units was performed. Construction activities restarted in April 2015 after shutting down for the winter in October 2014. Damage to the tunnel walls believed to be caused from water seapage freezing in the rock walls has been repaired. The temporary coffer dam has been completed. The turbine installation at the power plant is underway.

As of the end of 2015 construction of the access road is complete and the penstock installation was underway. The remaining penstock and the diversion construction are expected to be complete by September 2016 with the project producing power shortly thereafter.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,085,509.00	$2,085,509.00
Other State Funding	$0.00	$0.00
Total State	**$2,085,509.00**	**$2,085,509.00**
Required Local Match	$2,085,509.00	$2,085,509.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$4,171,018.00**	**$4,171,018.00**

Grant 7071015: Allison Creek Hydroelectric Project Construction

Project Scope: The Allison Creek Hydro project is funded through multiple grants and fund sources and the estimated final price of the project is $49 Million. A cap of 50% State funding has been applied to this project. This grant consists of $5,914,500 from Round VII of the Renewable Energy Fund and $5,914,500 in cash matching funds for construction of the Allison Creek Hydroelectric Project and Copper Valley Electric Association is the grantee. A Round VI Renewable Energy Fund grant contributes $2,085,509 with an addition $2,085,509 in cash matching funds for construction of the Allison Creek Hydroelectric Project. A Legislative appropriation contributed an addition $10,000,000 to the project. Copper Valley Electric Association will finance the balance of the project.

The project is run-of-river and will consist of the following primary features: a 130-foot-wide, 16-foot-high diversion structure on Allison Creek; a Coanda screened intake at the spillway conveying flows to the powerhouse; a 42 to 36-inch-diameter, 6,900-foot-long buried steel penstock including a 700-foot-long tunnel section; a powerhouse containing one horizontal Pelton turbine/generator unit with a total installed capacity of 6.5 megawatts; a 70.5-foot-long tailrace extending from the north side of the powerhouse to Allison Creek via a concrete channel and the existing creek bed; a 550-foot-long permanent access road to the powerhouse; and a 3.8-mile-long, 25 kilovolt transmission line connecting to an existing substation. The project is estimated to provide 15,057 MWh during an average year, and up to 23,300 MWh when fully subscribed. Final design drawings have been reviewed by FERC and all construction permits have been obtained.

Project Status: The grant was executed on August 19,2014. During the 2014 construction season the road work was completed, the power plant structure was constructed, and work on the transmission line, penstock, generator units was performed. Construction activities restarted in April 2015 after shutting down for the winter in October 2014. Damage to the tunnel walls believed to be caused from water seapage freezing in the rock walls has been repaired. The temporary coffer dam has been completed. The turbine installation at the power plant is underway.

As of the end of 2015 construction of the access road is complete and the penstock installation was underway. The remaining penstock and the diversion construction are expected to be complete by September 2016 with the project producing power shortly thereafter.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$5,914,500.00	$5,914,500.00
Other State Funding	$0.00	$0.00
Total State	**$5,914,500.00**	**$5,914,500.00**
Required Local Match	$5,914,500.00	$5,914,500.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$11,829,000.00**	**$11,829,000.00**

Carlson Creek Hydroelectric

Grantees	Alaska Power Company (Utility-Private)
Technology Type	HYDRO
Region	Copper River/Chugach
AEDG Project Code	10127

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	226	Carlson Creek Hydroelectric	2195462	407060	Feasibility	7/1/09	12/31/11	Closed

Grant 2195462: Carlson Creek Hydroelectric

Project Scope: Project is to complete a reconnaissance study of the Carlson Creek Hydroelectric Project near Slana. Work includes stream gauging and preparing the reconnaissance engineering study that will provide information on proposed hydro scheme and layout, energy production by month, stream gauge data for two years, construction cost, cost of power production, and environmental and permitting costs.

Project Status: The project is closed. The grantee prepared a preliminary feasibility study after conducting a site visit. As a result of the study, the grantee concluded no alternative exhibited sufficient degree of feasibility to warrant further study. Thus, stream gauging was not completed and the grantee requested grant closure before expending all funds. Deliverable under the grant is Carlson Creek Hydroelectric Project Preliminary Feasibility Evaluation, dated December 2011, and prepared by Alaska Power & Telephone Company.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$8,811.26	$8,811.26
Other State Funding	$0.00	$0.00
Total State	**$8,811.26**	**$8,811.26**
Required Local Match	$2,202.82	$2,202.82
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$11,014.08**	**$11,014.08**

Chenega Bay Hydro

Grantees	Chenega IRA Council (Government Entity - Tribal Council)
Technology Type	HYDRO
Region	Copper River/Chugach
AEDG Project Code	10253

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	455	Chenega Bay Hydro Design and Permitting	7030010	407071	Final Design	7/1/10	12/31/15	Active

Grant 7030010: Chenega Bay Hydro Design and Permitting

Project Scope: The grant is to complete permitting and final design of a small-scale hydropower project (54 kW run-of-river) on Anderson Creek for Chenega.

Project Status: Chenega was completing design documents, permits and a business plan. The grant is anticipated to be closed out in 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$252,000.00	$242,231.05
Other State Funding	$0.00	$0.00
Total State	**$252,000.00**	**$242,231.05**
Required Local Match	$38,500.00	$34,932.95
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$290,500.00**	**$277,164.00**

Fivemile Creek Hydroelectric Project

Grantees	Chitina Electric, Inc. (Utility-Private)
Technology Type	HYDRO
Region	Copper River/Chugach
AEDG Project Code	10137

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	236	Fivemile Creek Feasibility/Conceptual Design	2195456	407058	Feasibility	7/24/09	6/30/15	Active
4	682	Fivemile Creek Hydroelectric Project	7040012	407058	Final Design	7/1/11	12/31/15	Active

Grant 2195456: Fivemile Creek Feasibility/Conceptual Design

Project Scope: The Alaska Energy Authority and Chitina Electric, Inc. will use the grant funds to complete feasibility study, conceptual design and permitting; with the requirement that the feasibility report affirms that a Fivemile Creek hydroelectric project near Chitina, Alaska is practical before subsequent funding is provided for conceptual design and permitting. Work includes environmental assessment, site control, permitting, penstock routing, intake structure location, turbine house, equipment selection and tail race design.

On behalf of the Grantee and through a separate grant agreement funded by the Denali Commission, the Authority has previously completed conceptual design, final design, and construction is underway for the diesel powerhouse and associated distribution tie line adjacent to the mouth of Fivemile Creek. The proposed hydroelectric project would provide power to the new powerhouse.

Preliminary investigation work along with initial stream gauging at Fivemile Creek mouth was previously completed in May of 2008 under the grant for the powerhouse upgrade project. A Notice to Proceed has been issued for additional stream gauging at the proposed intake location on Fivemile Creek.

Project Status: The feasibility report prepared by CRW is titled "Chitina Alaska Conceptual Design Report Fivemile Creek Hydroelectric Project" and is dated January 13, 2012.

The grant was amended in Feb 2014 with the scope of work consisting of permitting documents and completion of 65% design documents. Almost all the funds under the grant have been expended and the grantee's contractor (CRW through AEA) provided drawings titled "Chitina, Alaska, Fivemile Creek Hydroelectric Project, 65% Design Drawings, September 2014". Permit status is not known other than FERC ordered licensing is not required (May 2012).

AEA expects to perform some additional hydrological work in the spring of 2016 to shore up the feasibility analysis and address powerhouse location options with ADF&G. This grant is expected to close after remaining funds are expended to prepare a design build contract to complete the project.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$303,000.00	$302,455.47
Other State Funding	$0.00	$0.00
Total State	**$303,000.00**	**$302,455.47**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$303,000.00**	**$302,455.47**

Grant 7040012: Fivemile Creek Hydroelectric Project

Project Scope: Chitina Electric Inc. (CEI) has been awarded $277,000 in Round IV Renewable Energy Fund (REF) grant funds to complete permitting and final design of the Fivemile Creek Hydroelectric Project. This 300 kW high head, run-of-river hydroelectric plant has the potential to displace a significant portion of the diesel fuel now used to generate electricity for Chitina.

Chitina Electric Inc. (CEI) has been awarded $277,000 in Round IV Renewable Energy Fund (REF) grant funds to complete permitting and final design of the Fivemile Creek Hydroelectric Project. This 300 kW high head, run-of-river hydroelectric plant has the potential to displace a significant portion of the diesel fuel now used to generate electricity for Chitina. CEI received REF

Round II funding of $303,000 to complete conceptual design and feasibility assessment of the project (#2194556). In addition to the feasibility assessment, Chitina has begun the permitting and design process using remaining feasi- bility funds. This new grant is a continuation of the work. Project permitting, obtaining site control, completion of final design and a final business plan will be completed. Permitting jurisdiction is outside the authority of the Federal Energy Regulatory Commission and is through the resource agencies of the State of Alaska.As requested by the grantee the Alaska Energy Authority, is administering this grant for CEI.

Project Status: The conventional run of the river hydro project has completed the design phase. Chitina Electric Inc. has applied for hydro construction funds from the most recent AEA REF and USDA HECG grant programs. Once they secure construction funds the project will move into the construction phase.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$277,000.00	$159,628.96
Other State Funding	$0.00	$0.00
Total State	**$277,000.00**	**$159,628.96**
Required Local Match	$500,000.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$777,000.00**	**$159,628.96**

Humpback Creek Hydroelectric Project Rehabilitation

Grantees	Cordova Electric Cooperative (Utility-Cooperative)
Technology Type	HYDRO
Region	Copper River/Chugach
AEDG Project Code	10024

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	21	Humpback Creek Hydroelectric Construction	2195386	407037	Construction	8/20/08	6/30/11	Closed
3	407	Humpback Creek Hydroelectric Project Rehabilitation	7030009	407066	Construction	7/1/10	6/30/13	Closed

Grant 2195386: Humpback Creek Hydroelectric Construction

Project Scope: The project is to implement construction of a state-of-the-art hydroelectric renewable energy facility on Humpback Creek that would generate up to 4 million kWh per year, meeting 16% of Cordova's annual power demand with a renewable energy resource. This amount is well below the annual amount that must presently be provided from Cordova Electric Cooperative's (CEC) diesel generators, assuring full utilization of the resource. Project partners include Cordova Electric Cooperative, the Federal Emergency Management Agency (FEMA), the Eyak Corporation, and the City of Cordova.

The total cost for the Project is $11,240,238. Out of this amount, $3,840,000 occurred prior to the eligibility date of August 20, 2008, and, therefore, is not reflected in the financial reports.

The current estimate for Humpback tasks from August 20, 2008 to completion is $7,400,238. FEMA is estimated to contribute $2,970,000 for activities commencing after August 20, 2008. The Alaska Energy Authority grant totals $4,000,000. Cordova Electric Cooperative is committed to approximately $430,238. Note that contingency was excluded from the estimate for tasks from August 20, 2008 through completion, and Cordova Electric Cooperative will bear the risk of the additional cost of change orders, contingencies in labor and/or materials, etc.

The grant funds will be used to construct the access road, tunnel, penstock, power and communications, intake structure, and dam with an estimated cost of $7,400,238 as noted above. This work commences on August 20, 2008 through completion on January 13, 2010.

Project Status: This project is complete and the grant is closed.

Cordova Electric Cooperative's Humpback Creek Project went into revenue service on July 13, 2011. The project has operated reliably with no downtime since being placed in operation in July 2011. Commissioning was more labor and cost intensive than anticipated in part to the plant being idle for five years. Once the plant was placed in normal operation, the operations and maintenance expenses decreased considerably. The operations costs have been approximately 25% of the fuel savings to date. Annual production is anticipated to exceed 4,000,000 kWh per year.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$4,000,000.00	$4,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$4,000,000.00**	**$4,000,000.00**
Required Local Match	$3,400,238.00	$3,402,483.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$7,400,238.00**	**$7,402,483.00**

Grant 7030009: Humpback Creek Hydroelectric Project Rehabilitation

Project Scope: Cordova Electric Cooperative (CEC) is requesting $4 million to implement a construction-ready, state-of-the-art hydroelectric facility on Humpback Creek that would generate up to 4 million kWh per year, meeting 16% of Cordova's annual energy needs with a renewable energy source. CEC operates an isolated electric system and therefore is solely responsible for serving its 1,560 customers. Cordova's high electricity costs have been cited in several formal and informal community planning

documents as a primary inhibitor of economic development, and this project would assist in making electricity rates more affordable for residents and businesses as well as displacing diesel fuel, and reducing our particulate emissions. Competitive bids for project construction exceeded expected cost by $5,500,000, so CEC is requesting additional funding to that provided in the Authority's Round 1 Renewable Energy grant.

Cordova Electric Cooperative proposes to use the Renewable Energy Fund grant to complete relocation and replacement of the intake structure for the Humpback Creek hydro project, which was destroyed by both a fire in 2005 and flood in 2006. AEA previously awarded the Cordova Electric Cooperative $4 million in Round I for this work; however, the installed cost of the project has increased to $17,621,878 since construction bids came in much higher than expected. Cordova Electric Cooperative has awarded a construction contract and the project is now on schedule for completion by January 2011. There is substantial support from the local Native organization Eyak and fish processers. In addition, the federal agency, FEMA, has provided funding for the project. All permits, including a FERC license to construct are in place for the rebuild.

Project Status: This project is complete and the grant is closed.

Cordova Electric Cooperative's Humpback Creek Project went into revenue service on July 13, 2011. The project has operated reliably with no downtime since being placed in operation in July 2011. Commissioning was more labor and cost intensive than anticipated in part to the plant being idle for five years. Once the plant was placed in normal operation, the operations and maintenance expenses decreased considerably. The operations costs have been approximately 25% of the fuel savings to date. Annual production is anticipated to exceed 4,000,000 kWh per year.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$4,000,000.00	$4,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$4,000,000.00**	**$4,000,000.00**
Required Local Match	$5,805,000.00	$5,805,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$9,805,000.00**	**$9,805,000.00**

Tatitlek Wind/Hydro

Grantees	Tatitlek Village IRA Council (Utility-Government)
Technology Type	WIND
Region	Copper River/Chugach
AEDG Project Code	10212

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	316	Tatitlek Wind/Hydro Feasibility Assessment	2195461	410052	Feasibility	7/1/09	6/30/12	Closed

Grant 2195461: Tatitlek Wind/Hydro Feasibility Assessment

Project Scope: This is a grant for feasibility and reconnaissance including: transporting and installing a met tower; studying the wind resource for one year; conducting a geotechnical investigation to determine the soil conditions and needed engineering at the site, and performing a hydroelectric resource assessment. A conceptual design will be created based on the outcome of the met tower recordings, hydroelectric potential and geotechnical investigation.

Project Status: The grant agreement is in place. A wind resource assessment began in Summer 2010. TDX did a community visit and site scouting, May 31, 2010 to June 1, 2012. there was a site visit to install anemometers on the ferry dock light tower and on a hill above the water tank on July 21, 2010 and July 23, 2010. The data shows only high class 1 winds even though there are some strong wind eventsfrom time to time. AEA recommends the community move toward biomass energy given the local resources. The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$51,974.47	$51,974.47
Other State Funding	$0.00	$0.00
Total State	**$51,974.47**	**$51,974.47**
Required Local Match	$5,273.05	$5,273.05
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$57,247.52**	**$57,247.52**

Old Harbor Hydroelectric

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	HYDRO
Region	Kodiak
AEDG Project Code	10074

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	73	Old Harbor Hydroelectric Final Design	2195431	407039	Feasibility	8/20/08	12/31/13	Closed
4	644	Old Harbor Hydroelectric Project	7040014	407039	Final Design	7/1/11	12/31/13	Closed

Grant 2195431: Old Harbor Hydroelectric Final Design

Project Scope: This project is to conduct FERC licensing and permitting activities for the Old Harbor Hydroelectric project. Tasks that will be completed with this grant include a site visit, feasibility report, Phase I of permitting (FERC PAD), FERC scoping meetings, FERC study plan, and Phase II of permitting (field studies and initial study report).

Project Status: The project phase is complete. All tasks have been completed and all deliverables have been received and accepted. The phase completed the Alaska Village Electric Cooperative Old Harbor Hydroelectric Project Reconnaissance and Feasibility Study by Hatch and dated July 2011, FERC Pre-Application Document, Scoping Meetings, Proposed Study Plan and initial FERC fieldwork.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$225,000.00	$225,000.00
Other State Funding	$0.00	$0.00
Total State	**$225,000.00**	**$225,000.00**
Required Local Match	$25,000.00	$38,454.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$250,000.00**	**$263,454.00**

Grant 7040014: Old Harbor Hydroelectric Project

Project Scope: Project is to complete engineering and surveying tasks for Phase II of FERC licensing and preliminary design. FERC License Application Exhibit F, Exhibit G (Survey Control and R-O-W maps), and geotechnical investigation will be completed. Draft drawings (65% design) and specifications, including access road design, project transient analysis and hydraulic calculations, pipeline sizing, alignment and profile, anchorage and thrust block design will be prepared. A construction cost estimate will also be completed with this grant.

Project Status: Grantee revised the FERC Draft License Application (DLA) to address FERC, USFWS, and ADF&G comments. Anticipate completing revisions to the DLA and submitting the License Application to FERC October 31, 2013.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$237,500.00	$237,500.00
Other State Funding	$0.00	$0.00
Total State	**$237,500.00**	**$237,500.00**
Required Local Match	$12,500.00	$12,500.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$250,000.00**	**$250,000.00**

Terror Lake Unit 3 Hydroelectric Project

Grantees	Kodiak Electric Association, Inc. (Utility-Private)
Technology Type	HYDRO
Region	Kodiak
AEDG Project Code	10118

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	215	Terror Lake Capacity - Feasibility/Conceptual Design	2195460	407059	Final Design	7/1/09	12/31/12	Closed
3	401	Terror Lake Unit 3 Hydroelectric Project	7030011	407068	Final Design	7/1/10	12/31/12	Closed
4	653	Terror Lake Unit 3 Hydroelectric Project 2	7040013	407059	Construction	7/1/11	6/30/14	Closed

Grant 2195460: Terror Lake Capacity - Feasibility/Conceptual Design

Project Scope: The Terror Lake Unit 3 Hydroelectric Project is to install a third hydro turbine capable of producing an additional 11.25 megawatts (MW) in the existing Terror Lake Plant. The original engineers of the Terror Lake facility had the foresight to design the facility for expansion to three turbines. The original design assumed one day additional capacity would be required. Terror Lake is KEA's primary generation source and is located approximately 25 miles southwest of the City of Kodiak and is within the Kodiak National Wildlife Refuge. The current capacity of Terror Lake has been surpassed by Kodiak's growing load demand. Without the additional hydropower capacity, the synergistic relationship of more renewable variable energy sources and water cannot be fully realized. Expanding the capacity of Terror Lake will significantly enhance the stability of KEA's isolated grid system and reduce KEA's dependence on diesel fuel by providing ample backup capacity to cover peak loads and outage backup for the other two hydro turbine generator units.

Feasibility/Conceptual Phase: The project is to complete a feasibility analysis and conceptual design to install a third hydroelectric turbine generator unit in an existing bay of the powerhouse located at Terror Lake. A current analysis will identify the regulatory, engineering, and operational issues involved in expanding the facility's capacity. Upon its successful completion, Kodiak Electric Association will initiate the necessary environmental impact studies in order to develop an appropriate conceptual design for the engineering and operational modifications to the Terror Lake system.

Project Status: KEA received the FERC License Amendment. The project phase is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$224,418.68	$224,418.68
Other State Funding	$0.00	$0.00
Total State	**$224,418.68**	**$224,418.68**
Required Local Match	$224,418.68	$224,418.68
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$448,837.36**	**$448,837.36**

Grant 7030011: Terror Lake Unit 3 Hydroelectric Project

Project Scope: The Terror Lake Unit 3 Hydroelectric Project is to install a third hydro turbine capable of producing an additional 11.25 megawatts (MW) in the existing Terror Lake Plant. The original engineers of the Terror Lake facility had the foresight to design the facility for expansion to three turbines. The original design assumed one day additional capacity would be required. Terror Lake is KEA's primary generation source and is located approximately 25 miles southwest of the City of Kodiak and is within the Kodiak National Wildlife Refuge. The current capacity of Terror Lake has been surpassed by Kodiak's growing load demand. Without the additional hydropower capacity, the synergistic relationship of more renewable variable energy sources and water cannot be fully realized. Expanding the capacity of Terror Lake will significantly enhance the stability of KEA's isolated grid system and reduce KEA's dependence on diesel fuel by providing ample backup capacity to cover peak loads and outage backup for the other two hydro turbine generator units.

Final Design: Project is to assist with the completion of the final design and bid document development. Once complete, KEA intends to initiate the construction phase of the third turbine for the Terror Lake facility.

Project Status: KEA received the FERC License Amendment. This phase is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$248,160.00	$248,160.00
Other State Funding	$0.00	$0.00
Total State	**$248,160.00**	**$248,160.00**
Required Local Match	$200,000.00	$200,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$448,160.00**	**$448,160.00**

Grant 7040013: Terror Lake Unit 3 Hydroelectric Project 2

Project Scope: The Terror Lake Unit 3 Hydroelectric Project is to install a third hydro turbine capable of producing an additional 11.25 megawatts (MW) in the existing Terror Lake Plant. The original engineers of the Terror Lake facility had the foresight to design the facility for expansion to three turbines. The original design assumed one day additional capacity would be required. Terror Lake is KEA's primary generation source and is located approximately 25 miles southwest of the City of Kodiak and is within the Kodiak National Wildlife Refuge. The current capacity of Terror Lake has been surpassed by Kodiak's growing load demand. Without the additional hydropower capacity, the synergistic relationship of more renewable variable energy sources and water cannot be fully realized. Expanding the capacity of Terror Lake will significantly enhance the stability of KEA's isolated grid system and reduce KEA's dependence on diesel fuel by providing ample backup capacity to cover peak loads and outage backup for the other two hydro turbine generator units.

Construction: Project is for construction of the third hydropower turbine - generator unit in an empty bay within the existing powerhouse of the Terror Lake Hydroelectric Facility on Kodiak Island.

Project Status: Construction activities for Terror Lake Unit 3 addition have been completed and the unit has been commissioned.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$3,751,840.00	$3,751,840.00
Other State Funding	$3,750,000.00	$3,750,000.00
Total State	**$7,501,840.00**	**$7,501,840.00**
Required Local Match	$7,590,927.82	$7,590,927.82
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$15,092,767.82**	**$15,092,767.82**

Pillar Mountain Wind Project

Grantees	Kodiak Electric Association, Inc. (Utility-Private)
Technology Type	WIND
Region	Kodiak
AEDG Project Code	10099

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0, 1	-1, 103	Pillar Mountain Wind Project - Construction	2195371	410025	Construction	8/20/08	12/31/09	Closed
5	803	Pillar Mountain High Penetration Wind Project	7050803	410082	Construction	7/1/12	6/30/13	Closed

Grant 2195371: Pillar Mountain Wind Project - Construction

Project Scope: The scope of this project is to fund the costs associated with purchasing and transporting turbines for up to $1,000,000.

The Pillar Mountain Wind Project, both Phase I and Phase II, proposes to construct and operate a four and a half to nine MW wind farm utilizing up to six wind turbines located on the ridgeline of Pillar Mountain.

The project design for Phase I involves the installation of the first three wind turbines at sites T4, T5, T6, and the buried installation of a 25 KV line connecting to High Substation. The power line will follow an existing single-phase line currently providing power to antennas on Pillar Mountain.

Tetra Tech EC, Inc. will be responsible for the design and construction of the environmental, civil engineering, and turbine installation portion of the project. EPS, Inc. and Dryden & La Rue, Inc. will be responsible for grid interconnection design. KEA and EPS will be responsible for the installation of the grid interconnection for the project.

The majority of permits have been obtained. The necessary permits that have yet to be issued include the State of AK Land Lease from the Department of Natural Resources, City of Kodiak easements, and the Kodiak Island Borough building permit.

Project Status: The project was completed in August 2009

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$4,000,000.00	$4,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$4,000,000.00**	**$4,000,000.00**
Required Local Match	$1,000,000.00	$1,000,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$5,000,000.00**	**$5,000,000.00**

Grant 7050803: Pillar Mountain High Penetration Wind Project

Project Scope: Kodiak Electric Association (KEA) will expand their current wind farm from three to six GE 1.5 MW SLE turbines. The total nameplate capacity of the expanded system will be 9 MW. KEA will also install an Extreme Battery system to act as a bridge between the variable generation of the wind and the response of the Terror Lake Hydro generators. A protective coating will be added to turbine blades for all 6 turbines that will reduce leading-edge erosion.

Project Status: The wind turbine construction is complete and commissioning finished in mid September 2012. Battery construction and commissioning is complete, setting the two dynamic power units on their pads. The substation upgrade was completed in late September 2012 and went online in early October. A change order was made with Xtreme Power systems for the addition of a Clean Agent FE-25 unit fire suppression systems in light of the Kahuku wind farm battery system fire in early August 2012. Each fire suppression unit costs $55k. Testing of the system successfully supported a 3.4MW trip.

The grant was closed on March 1, 2013.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$7,800,000.00	$7,800,000.00
Other State Funding	$0.00	$0.00
Total State	**$7,800,000.00**	**$7,800,000.00**
Required Local Match	$7,800,000.00	$7,800,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$15,600,000.00**	**$15,600,000.00**

Atmautluak Washeteria Heat Recovery Project

Grantees	Atmautluak Traditional Council (Government Entity - Tribal Council)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10405

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	935	Atmautluak Washeteria Heat Recovery Project	7060935	403063	Construction	7/1/13	6/30/16	Active

Grant 7060935: Atmautluak Washeteria Heat Recovery Project

Project Scope: This grant consists of $350,000 from Round VI of the Renewable Energy Fund for construction of heat recovery project to capture the recovered heat from the existing electrical power plant to the Washeteria and is expected to reduce the fuel oil usage by 4,395 gallons per year, nearly offsetting the total fuel oil usage. The recovered heat fluid is pumped through arctic pipe to the end user and is tied into the end-user heating system using a plate heat exchanger. The waste heat infrastructure will include waste heat transmission lines and upgrades necessary in the power house and Washeteria.

The total project cost is $360,500 with $10,500 of in-kind contribution provided by Alaska Native Tribal Health Consortium (ANTHC) as a match.

Atmautluak Traditional Council (ATC) is the grantee. ANTHC will provide project/construction services for this project as an in-kind match, $10,500. ANTHC and the Atmautluak Traditional Council will execute a Cooperative Project Agreement (CPA) to define each entitys role in the project scope. The CPA must be accepted by AEA prior to the release of construction funds.

The final reimbursement of grant funds will not be disbursed without an O&M reporting plan accepted by AEA. AEA may retain up to 10% of the contributed grant funds until the grantee has submitted an acceptable O&M reporting plan.

Project Status: This project was constructed by ANTHC. AEA completed connections to new AEA provided power house in 2015. A handover from ANTHC to AEA took place in June 2015 concurrent with the power plant completion by AEA. The grant is being closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$350,000.00	$349,999.97
Other State Funding	$0.00	$0.00
Total State	**$350,000.00**	**$349,999.97**
Required Local Match	$10,500.00	$10,744.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$360,500.00**	**$360,743.97**

Emmonak Heat Recovery System

Grantees	City of Emmonak (Local Government)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10439

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1061	Emmonak Heat Recovery System	7071061	403072		7/1/14	12/31/17	Active

Grant 7071061: Emmonak Heat Recovery System

Project Scope: This grant consists of $689,300 from Round 7 of the Renewable Energy Fund for permitting, design, and construction of a heat recovery system in the community of Emmonak. The total project cost is $709,977 with $20,677 provided by the grantee as a match.

This project will provide recovered heat from the existing electrical power plant to the water treatment plant, the City Office, and the Boys and Girls Club. The estimated fuel oil savings to these facilities is projected to be 18,879 gallons of heating oil per year.

Project Status: CRW has completed 65% of the design.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$689,300.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$689,300.00**	**$0.00**
Required Local Match	$20,677.00	$454.57
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$709,977.00**	**$454.57**

Heat Recovery for the Water Treatment Plant & Community Store for Marshall

Grantees	City of Marshall (Local Government)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10409

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	940	Marshall Heat Recovery - Water Treatment Plant and Community Store	7060940	403066	Construction	7/1/13	12/31/16	Active

Grant 7060940: Marshall Heat Recovery - Water Treatment Plant and Community Store

Project Scope: This grant consists of $183,200 from Round VI of the Renewable Energy Fund for design and construction of heat recovery project to capture the recovered heat from the existing electrical power plant to the water treatment plant (WTP) and village store. To provide maximum recovered heat benefit, the piping in the WTP needs to be reconfigured, and the heat recovery controls need to be replaced. New work will include adding a hydronic unit heater and a BTU meter for billing. A bypass line around the heat exchanger in the power plant will be installed with a modulating valve to prevent back pressure against the generator engines. The proposed design will modify piping so that the heat recovery system serves the entire WTP building load, and the three-way valve will be replaced with a heat injection pump.

It is expected to reduce the fuel oil usage of the facilities by 7,700 gallons per year, fully offsetting the fuel oil usage. The feasibility study for this project was completed in 2012.

The total project cost is $189,200 with $6,000 of in-kind contribution provided by Alaska Native Tribal Health Consortium (ANTHC) as a match. ANTHC will be providing project and program management services.

The City of Marshall is the grantee. The City of Marshall and the power utility must finalize a heat sales agreement; a copy must be submitted to AEA before construction funds are released to grantee. Similarly, a final design must be accepted by AEA for review before construction funds are released to the grantee.

The final reimbursement of grant funds will not be disbursed without an O&M reporting plan accepted by the AEA Project Manager. AEA may retain up to 10% of the contributed grant funds until the grantee has submitted an acceptable O&M reporting plan.

Project Status: This heat recovery system is operational and is awaiting final deliverables for close-out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$183,200.00	$167,833.76
Other State Funding	$0.00	$0.00
Total State	**$183,200.00**	**$167,833.76**
Required Local Match	$6,000.00	$6,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$189,200.00**	**$173,833.76**

Heat Recovery for the Water Treatment Plant and Washeteria of Kwinhagak

Grantees	Native Village of Kwinhagak (Government Entity - Tribal Council)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10407

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	937	Kwinhagak Heat Recovery - Water Treatment Plant and Washeteria	7060937	403064	Construction	7/1/13	12/31/16	Active

Grant 7060937: Kwinhagak Heat Recovery - Water Treatment Plant and Washeteria

Project Scope: This grant consists of $668,350 from Round VI of the Renewable Energy Fund for design and construction of heat recovery project to capture the recovered heat from the existing Alaska Village Electric Cooperative (AVEC) power plant to the Washeteria and combined utility building. The estimated fuel savings of the combined utility building and Washeteria is projected to be 14,200 gallons of heating oil per year by adding marine jackets to the AVEC generators to increase available recovered heat. If practical an electric boiler will be added to pick up excess wind capacity when available. Air vents, thermometers, pressure gauges, drain valves, and pressure relief valves will also be added, including a BTU meters in each building. The system will also provide freeze protection in the event a users boiler system temperature falls below a minimum temperature, typically between 50-100 degrees F. The feasibility study for this project was completed in 2012.

The total project cost is $688,400 with $20,050 of in-kind contribution provided by Alaska Native Tribal Health Consortium (ANTHC) as a match. ANTHC will be providing project and program management services. ANTHC and the Native Village of Kwinhagak will execute a Cooperative Project Agreement (CPA) to define each entitys role in the project scope. The CPA must be accepted by AEA prior to the release of construction funds.

Native Village of Kwinhagak is the grantee. Native Village of Kwinhagak and the power utility must finalize a heat sales agreement; a copy must be submitted the Authority before construction funds are released to grantee. Similarly a final design must be accepted by the Authority for review before construction funds are released to the grantee.

A 65 percent final design, which includes any necessary contracts must be complete and accepted by AEA prior to release of funds for materials requiring long lead time items.

A 95% final design must be complete and accepted by AEA prior to release of construction funds. The 95% design must include a narrative, along with attached drawings and specifications as required to establish function of all major components within the biomass system. The 95% design will contain adequate system and component definition to manage construction of the project.

The final reimbursement of grant funds will not be disbursed without an O&M reporting plan accepted by the AEA Project Manager. AEA may retain up to 10% of the contributed grant funds until the grantee has submitted an acceptable O&M reporting plan.

Project Status: The construction of this project is nearing completion with an anticipated start-up of fall 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$668,350.00	$99,883.84
Other State Funding	$0.00	$0.00
Total State	**$668,350.00**	**$99,883.84**
Required Local Match	$20,050.00	$20,050.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$688,400.00**	**$119,933.84**

Heat Recovery for the Water Treatment Plant/Washeteria Building for Tuntutuliak

Grantees	Native Village of Tuntutuliak (Local Government)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10411

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1085	Tuntutuliak Heat Recovery	7071085	403075		7/1/14	12/31/17	Active

Grant 7071085: Tuntutuliak Heat Recovery

Project Scope: Provide a heat recover system connecting the existing power house to community buildings. ANTHC will be managing the project

Project Status: The grant was executed in December 2014 to ANTHC for design-build project. ANTHC is beginning the design process.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$455,600.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$455,600.00**	**$0.00**
Required Local Match	$13,669.00	$4,729.58
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$469,269.00**	**$4,729.58**

Nunam Iqua Heat Recovery Project

Grantees	City of Nunam Iqua (Local Government)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10438

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1052	Nunam Iqua Heat Recovery Project	7071052	403074		7/1/14	12/31/15	Active

Grant 7071052: Nunam Iqua Heat Recovery Project

Project Scope: Use heat from new Power Plant to provide heat to the WTP, Clinic, Motel, Community Hall and Store.

Project Status: Project was completed and operational in early October, 2015, with exception of installation of BTU Meters that will be installed this summer. Have had a few issues with the system including leaks and temperature controls in a couple of buildings. Final repairs were completed in early January, 2016 and the system is operating. Heat recovered from the Power Plant is adequate to meet the demands of all 5 buildings, except in extreme cold at which case the store system switches to oil fired heat.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$450,000.00	$438,250.13
Other State Funding	$0.00	$0.00
Total State	**$450,000.00**	**$438,250.13**
Required Local Match	$117,000.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$567,000.00**	**$438,250.13**

Russian Mission Heat Recovery System

Grantees	City of Russian Mission (Local Government)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10351

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	844	Russian Mission Heat Recovery System	7050844	403059	Construction	7/1/12	12/31/15	Active

Grant 7050844: Russian Mission Heat Recovery System

Project Scope: This project will provide the final design and construction of a heat recovery that will utilize waste heat from the existing Alaska Village Electric Cooperative (AVEC) power plant for use at the WTP and three LYSD teacher housing units in Russian Mission. The design will be developed based on recommendations from the Russian Mission, Alaska Heat Recovery study that was completed by Alaska Energy and Engineering, Inc. (AE&E). The construction will include retrofitting the AVEC generators and installing a waste heat transmission line, circulation pumps, heat exchangers, and other system appurtenances. The project will involve coordination with the AVEC, the City, LYSD, the Alaska Native Health Consortium (ANTHC), as well as the Alaska Rural Utility Collaborate (ARUC).

Project Status: The engineering design is in progress through the Alaska Native Tribal Health Consortium. ANTHC is anticipating a shortage of funds to complete the construction and is pursuing other funding opportunities.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$555,000.00	$29,708.33
Other State Funding	$0.00	$0.00
Total State	**$555,000.00**	**$29,708.33**
Required Local Match	$32,000.00	$28,797.51
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$587,000.00**	**$58,505.84**

Sleetmute Heat Recovery - Power Plant to Water Plant

Grantees	Sleetmute Traditional Council (Local Government)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10355

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	848	Sleetmute Heat Recovery - Power Plant to Water Plant	7050848	403058	Construction	7/1/12	6/30/16	Active

Grant 7050848: Sleetmute Heat Recovery - Power Plant to Water Plant

Project Scope: This project will provide the final design and construction of a heat recovery that will utilize the heat from the engines at the Middle Kuskokwim Electric Plant and send it to the water treatment plant to heat the building, the circulated water loops, and the water storage tank. Sleetmute Traditional Council, in collaboration with ANTHC, proposes to construct a waste heat from the Middle Kuskokwim Electric generating station to the water treatment plant. The project will displace approximately 1,779 gallons of diesel per year according to a 2010 Heat Recovery Analysis.

The Middle Kuskokwim Electric Power Plant and the Sleetmute water treatment plant are located in Sleetmute. A feasibility study has been done for this project as part of an energy audit of the water treatment plant, and the design will be completed soon with other funds. AEA will work with the grantee to ensure that building energy efficiency is addressed in conjunction with this project. AEA funding is only being provided for construction.

Project Status: This project is operational. The project will closeout pending of the final inspection.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$126,682.00	$122,911.15
Other State Funding	$0.00	$0.00
Total State	**$126,682.00**	**$122,911.15**
Required Local Match	$6,667.00	$6,667.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$133,349.00**	**$129,578.15**

St. Mary's Heat Recovery System

Grantees	City of St. Mary's (Local Government)
Technology Type	HEAT RECOVERY
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10445

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1043	St. Mary's Heat Recovery System	7071043	403073		7/1/14	12/31/16	Active

Grant 7071043: St. Mary's Heat Recovery System

Project Scope: This grant is for design and construction of heat recovery project to capture the recovered heat from the existing AVEC electrical power plant and deliver it to the city shop; water circulation loops; Cold Storage/Hotel; and City Office Building. The project is expected to reduce the fuel oil usage by 15,700 gallons per year, nearly offsetting the total fuel oil usage. The recovered heat fluid is pumped through arctic pipe to the end user and is tied into the end-user heating system using a plate heat exchanger. The waste heat infrastructure will include waste heat transmission lines and upgrades necessary in the power house and each facility served.

Project Status: CRW has completed the 65% design.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$735,200.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$735,200.00**	**$0.00**
Required Local Match	$22,057.00	$454.57
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$757,257.00**	**$454.57**

Kisaralik/Chikuminuk Hydro

Grantees	Association of Village Council Presidents (Local Government)
Technology Type	HYDRO
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10115

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	210	Kisaralik/Chikuminuk Hydro	2195447	407056	Feasibility	7/1/09	6/30/11	Closed

Grant 2195447: Kisaralik/Chikuminuk Hydro

Project Scope: The project is to prepare a preliminary feasibility study of hydroelectric development at the Kisaralik/Lake Chikuminuk area in the Kuskokwim region. A report will be prepared to confirm: project hydrology & output, conceptual design, proposed schedule, land status & transmission routing, costs, environmental impact & permitting, and path forward. A site visit, public meetings, geotechnical analysis, and assessment of regional wholesale utility planning will also be done.

Project Status: The grant is complete. The reconnaissance report titled Kisaralik River and Chikuminuk Lake Reconnaissance and Preliminary Hydropower Feasibility Study, dated May 2011, and prepared by MWH has been accepted.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$229,952.00	$229,952.00
Other State Funding	$0.00	$0.00
Total State	**$229,952.00**	**$229,952.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$229,952.00**	**$229,952.00**

Scammon Bay Hydro Design & Engineering

Grantees	City of Scammon Bay (Local Government)
Technology Type	HYDRO
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10354

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	847	Scammon Bay Hydro Design & Engineering	7050847	407092	Final Design	7/1/12	12/31/14	Active

Grant 7050847: Scammon Bay Hydro Design & Engineering

Project Scope: The City of Scammon Bay will use the $80,793 Round V Renewable Energy Fund grant, and $2,793 of in-kind matching funds, to assess the feasibility of and prepare conceptual design drawings of a 331 kW run-of-river hydroelectric power project on Ekashluak Creek to serve the community. Ekashluak Creek is located in the Askinuk Mountains, eleven miles west of Scammon Bay. The City and hydro site are located in the Yukon Delta National Wildlife Refuge. The power system in Scammon Bay is owned and operated by Alaska Village Electric Cooperative (AVEC). AVEC and several other entities provided letters of support for the grant. Hydroelectric development for Scammon Bay has been studied several times in the past. The most recent study was completed in 2003. That study found that a hydroelectric project at Ekashluak Creek could reduce diesel electrical generation significantly. Stream gage data was collected for 13 months at 2-hour intervals and indicated flow near the mouth of the creek ranged from 11 to 78 cfs. The project was estimated to cost $3.68M (2003 dollars) and annually generate up to 2.5 GWh, of which approximately 1 GWh was useable. It is possible more of this excess energy could be used in Scammon Bay today. The proposed Ekashluak Creek project has risks that need to be understood and some remaining unanswered questions that this study can help to resolve. This feasibility study will address, but it is not limited to, the following: anadromous or resident fish presence in the affected reach of the creek, suitability of geology at the proposed project intake and powerhouse sites, access to the project area for construction and system maintenance, transmission line routing, agency lead if the project moves on to licensing and permitting, the projects current economics, and estimated cost of power in comparison to diesel generation. The study will also complete conceptual design of the proposed project. If the study of Ekashluak Creek does not appear to be a viable site for hydroelectric development, a second smaller stream, which is located near Scammon Bay and serves as the source of the community water supply, can be reviewed for its hydroelectric potential. This stream has been studied as a potential hydroelectric power site in the past. Additionally, a new road recently constructed east of town may provide access to alternative hydropower sites that can also be investigated in this study. The City of Scammon Bay intends to designate Alaska Native Tribal Health Consortium (ANTHC) as its agent for the purposes of accomplishing the tasks funded by this grant. The hydropower engineering for this grant is expected to be conducted by an engineering consultant whose resume was provided in the application.

Project Status: The Grantee completed the work and issued a final feasibility report titled Hillside Creek Project, Final Draft Report For Hydroelectric Feasibility Study, Scammon Bay, AK, ANTHC 14-C-81313, Rev. 0, September 15, 2014.

The report found that the Hillside Creek hydroelectric project is a viable addition to electric generation in Scammon Bay that should be investigated further through design and permitting efforts. The proposed project resulting from the report has the following configuration:

Intake Watershed Area 0.73 sq mi Static Head 480 ft Hydraulic Capacity 6.0 cfs Pipeline Length 4300 ft Pipeline Diameter 16 in Transmission Length 0 mi Min Operational Flow 0.45 cfs Net Efficiency 82% Nominal Capacity 188 kW Annual Energy Potential 755,790 kWh Displaced Diesel Energy 646,537 kWh

Future work should include a focus on stream flow data collection, conceptual design improvement, community and other stakeholder consultation, initial permitting actions, land acquisition, potable water system integration, and compatibility and economics with wind generation and diesel heat recovery projects. Project design would follow if it is decided to construct the project.

The hydrology data is not adequate to recommend a project size for final design and permitting. Collection of stream flow data on Hillside Creek will be required if the project proceeds to design and permitting. It is recommended to install a stream gauge and collect 2 to 3 years of flow data for project design and permitting.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$80,723.00	$79,636.86
Other State Funding	$0.00	$0.00
Total State	**$80,723.00**	**$79,636.86**
Required Local Match	$2,793.00	$2,792.63
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$83,516.00**	**$82,429.49**

Lime Village Photovoltaic System Retrofit

Grantees	Lime Village Traditional Council (Government Entity - Tribal Council)
Technology Type	SOLAR PV
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10297

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	607	Lime Village Photovoltaic Retrofit	7040018	411005	Feasibility	7/1/11		Closed

Grant 7040018: Lime Village Photovoltaic Retrofit

Project Scope: This project will look at the feasibility of retrofitting an existing 12kW solar-battery-diesel system in Lime Village. The system was installed in 1999-2001 with donations by British Petroleum and Siemens for the PV panels. Although the panels are reportedly operable, the charger-inverter and control system does not work. The status of the ˜100 kWh lead acid battery system is unknown.

Project Status: Project was in proposal status pending a rebuild of the diesel power system. The appropriated Renewable Energy Fund budget for this project is $25,000, with no required local match.

This project was canceled by AEA on 7/25/14 due to a lack of response from the community.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$25,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$25,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$25,000.00**	**$0.00**

Akiachak Wind

Grantees	Akiachak Native Community/Akiachak Ltd. (Utility-Government)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10111

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	669	Akiachak Wind Feasibility & Conceptual Design	7040057	410078	Feasibility	7/1/11	12/31/15	Active

Grant 7040057: Akiachak Wind Feasibility & Conceptual Design

Project Scope: This grant consists of $110,000 from Round IV of the Renewable Energy Fund for a wind feasibility analysis, resource assessment and conceptual design. The total project cost is $125,000 with a match of $15,000 provided by the grantee.

Akiachak Native Community/Akiachak Limited will install a wind-measuring meteorological (met) tower to determine the advisability of installing wind turbines in Akiachak. The work will involve obtaining a letter of non-objection for placement of the wind tower, permitting plan, installing the met tower purchased with previous AEA funds and studying the wind resource for a minimum of one year. On completion of the wind study the met tower will be dismantled and returned to AEA.

Akiachak Native Community/Akiachak Limited will install instrumentation necessary to monitor the power plant, distribution system, and possible secondary load(s) (e.g. dispatchable electrical loads and heat loads) in order to adequately model the Akiachak electrical demand, power system, and heat loads for a minimum of one year. Akiachak Native Community/Akiachak Limited will review the current power generation, distribution and control systems to determine necessary upgrades for the integration of wind power.

A final report detailing the findings of these tasks along with recommendations for next steps will be submitted to the Authority.

Project Status: The grant is in place. The grantee has chosen to work with WH Pacific as their contractor. The meteorological (met) tower was installed June 6, 2012.

After one year of data collection the wind resource does not appear to support a feasible wind project. However, wind varies annually and it is not uncommon to measure the wind resource at a location for more than one year. Also, technology is advancing that allows for the development of lesser wind regimes. Additional wind data, coupled with data from the power plant and possible secondary loads, may indicate a viable wind project or demonstrate that another technology is more appropriate for use in Akiachak.

Acknowledging that a viable wind project may not be possible in Akiachak, a full Conceptual Design Report will not be required of the grantee. Instead these funds will be used to perform a rigorous data collection campaign to support future wind or other energy projects.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$110,000.00	$71,333.96
Other State Funding	$0.00	$0.00
Total State	**$110,000.00**	**$71,333.96**
Required Local Match	$15,000.00	$7,047.35
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$125,000.00**	**$78,381.31**

Atmautluak Wind Renewable Energy

Grantees	Atmautluak Traditional Council (Government Entity - Tribal Council)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10314

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	673	Atmautluak Wind Renewable Energy	7040002	410065	Feasibility	7/1/11	12/31/13	Closed

Grant 7040002: Atmautluak Wind Renewable Energy

Project Scope: This project will complete a wind conceptual design report and conduct geotechnical analysis in Atmautluak. Significant work has already been done on the CDR.

Project Status: The average wind speed is 6.93 meters per second at 30 meters above ground. Wind power density is 382 watts per square meter - low class 4. Turbulence is low at 0.09. Wind shear is moderate at 0.158. Estimated net capacity factor is 30.2% for a Northern Power 100-kilowatt turbine or which two turbines are recommended along with secondary loads and controls. The conceptual design report was accepted and the project is ready for design work upon further funding. The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$100,000.00	$100,000.00
Other State Funding	$0.00	$0.00
Total State	**$100,000.00**	**$100,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$100,000.00**	**$100,000.00**

Bethel Renewable Energy Project

Grantees	TDX Power, Inc. (Independent Power Producer)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10388

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	604	Bethel Renewable Energy Project	7040015	410086	Feasibility	7/1/11	12/31/15	Active

Grant 7040015: Bethel Renewable Energy Project

Project Scope: At the time of the Renewable Energy Fund Round IV application TDX Power was negotiating to purchase Bethel Utility Corporation (BUC) and applied for feasibility and design funding for a wind farm in the City of Bethel. Only the feasibility portion of the application was recommended for funding. The grant was placed in proposal status until such time as TDX Power purchased BUC. TDX Power was unsuccessful in purchasing BUC. Alaska Village Electric Cooperative (AVEC) has since negotiated the purchase of BUC. As the utility in Bethel, AVEC will be pursuing a wind farm using a Denali Commission and Renewable Energy Fund Round I grant transferred to AVEC from the City of Bethel. The scope of work for this grant has been adjusted accordingly.

TDX Power, working as a contractor for AVEC, will perform a feasibility study to determine the advisability of installing wind turbines on the Bethel electrical grid. A meteorological study has been performed as part of the Alaska Energy Authority Wind Program's Anemometer Loan Program but further study may prove necessary. The work will entail geotechnical reconaissance, a wind resource assessment, analysis of the current power plant and electrical grid, feasibility study and result in a conceptual design report.

Project Status: The grant is in proposal status while Alaska Village Electric Cooperative (AVEC) and TDX Power negotiate a Memorandum of Understanding (MOU).

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$213,690.00	$40,987.75
Other State Funding	$0.00	$0.00
Total State	**$213,690.00**	**$40,987.75**
Required Local Match	$37,710.00	$9,617.83
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$251,400.00**	**$50,605.58**

Bethel Wind Farm Construction

Grantees	City of Bethel (Local Government)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10069

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	122	Bethel Wind Farm	2195432	410034	Final Design	8/20/08	9/30/16	Active

Grant 2195432: Bethel Wind Farm

Project Scope: This grant was fully funded and contains $399,777 from a Round 0 Denali Commission grant, $2,598,320 from Round I of the Renewable Energy Fund (REF) and $199,889 from the grantee. The grant includes funding for the conceptual design, final design, and construction of a wind farm in the City of Bethel. The Denali Commission application proposed the installation of one Northern Power NW100b wind turbine and the Round I application proposed an additional three NW100b turbines. The electrical demand in Bethel warrants investigating wind turbines larger than the NW100b and the project will analyze multiple turbine sizes and types as part of the conceptual design. The final design will be based on the conceptual design. It is anticipated that the conceptual and final designs will recommend megawatt scale wind turbines and that additional funding will be sought to complete an expanded project.

Project Status: The City of Bethel was the applicant for the Denali Commission and Round I REF grants. The purchase of Bethel Utilities Corporation (BUC) by Alaska Village Electric Cooperative (AVEC) has been approved by the Regulatory Commission of Alaska (RCA) and completed. The City of Bethel has transferred this grant to AVEC. The City of Bethel (COB) is using Legislative Appropriation Grant #2195257 at the direction of AVEC to perform feasibility analysis of the wind resource in support of the project. TDX Corporation is performing feasibility analysis and conceptual design work funded through Round IV of the Renwable Energy Fund under a Memorandum of Understanding (MOU) with AVEC. The funds from this grant will be used to complete 65% and 95% designs with the balance going toward construction of a wind turbine and integration controls in the community. It is anticipated that AVEC will be seeking additional funds for construction of an expanded project.

Site control discussions for the location of met towers and wind turbines between AVEC and COB have been ongoing. TDX has completed an initial analysis of the Bethel electrical grid and power plant along with a baseline feasibility analysis of low, medium, and high penetration conceptual designs for the Wind-Diesel System. A proposal from AVEC to upgrade the switchgear at the power plant using the Denali Commission funds, prior to completion of the TDX feasibility study, is has been approved. A typical wind-diesel system would use electrically governed generators and automatic switchgear. Due to the age of the generators, and the expense of replacing them, fully modernizing the system is not feasible. While limited by the mechanically governed generators, the switchgear can be upgraded to incorporate greater amounts of wind generated electricity and testing an upgraded system would help identify additional necessary components prior to completion of the final design; this would reduce the amount of uncertainty in the cost and risk associated with construction.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,598,320.00	$2,030.80
Other State Funding	$399,777.00	$0.00
Total State	**$2,598,320.00**	**$2,030.80**
Required Local Match	$199,889.00	$17,655.00
Federal Grant Funding	$399,777.00	$19,253.20
Total Project Costs	**$3,197,986.00**	**$38,939.00**

Chefornak Wind

Grantees	City of Chefornak (Local Government)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10233

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	650	Chefornak Wind Feasibility Study	7040056	410076	Feasibility	7/1/11	12/31/15	Active

Grant 7040056: Chefornak Wind Feasibility Study

Project Scope: This grant was partially funded. This grant consists of $136,750 from Round IV of the Renewable Energy Fund for a wind feasibility assessment in Chefornak. A wind resource analysis will be completed after a year of data is collected. The grantee will complete geotechnical reconnaissance to determine the advisability of installing wind turbines.

Project Status: The grant is in place. The grantee initially worked with STG as their contractor and is now working with IES. The meteorological (met) tower was installed June 6, 2012. The required, minimum 12 months of data collection has been met and initially the data shows a class 6 wind resource. Data collection is continuing.

A Wind Resource Assessment was submitted on July 18, 2014. A Draft Conceptual Design Report (CDR) was submitted on August 23, 2014. A meeting was held on September 17, 2014 to discuss the CDR and additional information was requested. Supplemental information was submitted on November 12, 2014. Another meeting was held on December 22, 2014 to discuss the CDR. AEA provided further guidance on information necessary to complete the CDR. A draft CDR was submitted in June of 2015. The review of the proposed project found the project not technically or economically feasible based on existing systems with the same architecture. Another submittal of the CDR was made in January 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$136,750.00	$104,251.77
Other State Funding	$0.00	$0.00
Total State	**$136,750.00**	**$104,251.77**
Required Local Match	$8,205.00	$3,369.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$144,955.00**	**$107,620.77**

Eek Wind Feasibility

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10306

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	639	Eek Wind Feasibility	7040019	410067	Feasibility	7/1/11	12/31/15	Active

Grant 7040019: Eek Wind Feasibility

Project Scope: The Alaska Village Electric Cooperative (AVEC) will conduct a wind resource and feasibility assessment in Eek. This project consists of $142,500 from Round IV of the Renewable Energy Fund (REF) and $7,500 from the grantee. A detailed conceptual design will be delivered to AEA upon completion of the project.

Project Status: The meteorological tower was installed at the end of the old airport runway on December 20, 2012. The first 6 months of data, indicate a strong class 3 wind resource at the met tower location and that the wind vane has been malfunctioning. Data collection is ongoing, but hampered by an incorrectly formated SD card on the datalogger (manufacturer switched from MMC to SD card on newer dataloggers). V3 Energy traveled to Eek in October 2014 to correct datalogger communications issues. Village electric system is single-phase which may limit wind turbine options. Conceptual design report activity is underway.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$142,500.00	$99,897.00
Other State Funding	$0.00	$0.00
Total State	**$142,500.00**	**$99,897.00**
Required Local Match	$7,500.00	$5,258.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$150,000.00**	**$105,155.00**

Emmonak/Alakanuk Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10199

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	302	Emmonak/Alakanuk Wind Design and Construction	2195468	410055	Construction	7/1/09	12/31/12	Closed

Grant 2195468: Emmonak/Alakanuk Wind Design and Construction

Project Scope: Originally proposed as a $10.7 million design/construction project, the scope has changed with the $4 million rural cap applied to each community for a total Renewable Energy Fund (REF) grant of $8 million. The scope reduced to from 6 to 4 turbines in August 2010. The intertie increased to 10-miles due to better ground and barge access.

Project Status: The 95% design has been accepted by AEA. All 4 turbines are erected and interconnected into the distribution system. Wireless communication to the turbines is completed. Intertie construction is complete. Switchgear is installed and operational. The project had been closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$8,000,000.00	$8,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$8,000,000.00**	**$8,000,000.00**
Required Local Match	$888,889.00	$891,627.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$8,888,889.00**	**$8,891,627.00**

Hooper Bay Wind Farm

Grantees	City of Hooper Bay (Local Government)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10038

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	35	Hooper Bay Wind Farm Feasibility	2195439	410040	Feasibility	8/20/08	6/30/12	Closed

Grant 2195439: Hooper Bay Wind Farm Feasibility

Project Scope: The grant is to evaluate the potential for installing more wind capacity in Hooper Bay. The study is to consider both adding more wind to the existing Alaska Village Electric Cooperative (AVEC) wind farm and also look at installing some wind capacity at the city water treatment facility for heating.

Project Status: AEA reviewed preliminary feasibility report and requested that more deatailed data and analysis be completed. As expected, the feasiblity report appears to show that adding wind to the Alaska Village Electric Cooperative (AVEC) facility makes the most sense. AVEC transferred wind turbine data to CE2 Engineers. The budget amendment was approved to complete feasibility study. The grant has been closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$60,179.25	$60,179.25
Other State Funding	$0.00	$0.00
Total State	**$60,179.25**	**$60,179.25**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$60,179.25**	**$60,179.25**

Kwethluk Wind

Grantees	Organized Village of Kwethluk (Government Entity - Tribal Council)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10312

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	664	Kwethluk Wind Feasibility Study	7040020	410068	Feasibility	7/1/11	12/31/15	Active

Grant 7040020: Kwethluk Wind Feasibility Study

Project Scope: This grant consists of $145,000 from Round IV of the Renewable Energy Fund for a wind feasibility analysis, resource assessment and conceptual design. The total project cost is $161,000 with a match of $16,000 provided by the grantee.

Organized Village of Kwethluk will install a meteorological (met) tower to determine the advisability of installing wind turbines in Kwethluk. The work will involve obtaining a letter of non-objection for placement of the wind tower, permitting plan, installing the met tower purchased with previous AEA funds and studying the wind resource for a minimum of one year. On completion of the wind study the met tower will be dismantled and returned to AEA.

Organized Village of Kwethluk will install instrumentation necessary to monitor the power plant, distribution system, and possible secondary load(s) (e.g. dispatchable electrical loads and heat loads) in order to adequately model the Kwethluk electrical demand, power system, and heat loads for a minimum of one year. Organized Village of Kwethluk will review the current power generation, distribution and control systems to determine necessary upgrades for the integration of wind power.

A final report detailing the findings of these tasks along with recommendations for next steps will be submitted to the Authority.

Project Status: The grant was executed on October 24, 2011. The grantee is using WH Pacific as their contractor. The meteorological (met) tower was installed June 12, 2012. Data from installation through December 10, 2012 indicates a class 2 wind resource. Data collection is ongoing.

After one year of data collection the wind resource does not appear to support a feasible wind project. However, wind varies annually and it is not uncommon to measure the wind resource at a location for more than one year. Also, technology is advancing that allows for the development of lesser wind regimes. Additional wind data, coupled with data from the power plant and possible secondary loads, may indicate a viable wind project or demonstrate that another technology is more appropriate for use in Kwethluk.

Acknowledging that a viable wind project may not be possible in Kwethluk, a full Conceptual Design Report will not be required of the grantee. Instead these funds will be used to perform a rigorous data collection campaign to support future wind or other energy projects.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$145,000.00	$44,098.22
Other State Funding	$0.00	$0.00
Total State	**$145,000.00**	**$44,098.22**
Required Local Match	$16,000.00	$5,747.65
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$161,000.00**	**$49,845.87**

Marshall Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10310

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	643	Marshall Wind Feasibility	7040021	410069	Feasibility	7/1/11	6/30/14	Closed

Grant 7040021: Marshall Wind Feasibility

Project Scope: The Alaska Village Electric Cooperative (AVEC) will complete a wind resource and feasibility assessment in Marshall. A detailed conceptual design will be delivered to AEA upon completion of the project.

Project Status: Ten months of wind data was collected and a wind resource report completed. A draft Conceptual Design Report (CDR) was written based on this initial wind study. The AEA Wind Program requires an industry standard minimum of 12 months of wind data be collected prior to performing a Wind Resource Analysis or Conceptual Design Report. A met tower was installed September 28, 2012 to fill the gaps in the wind data. The final CDR has been accepted.

The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$111,150.00	$111,150.00
Other State Funding	$0.00	$0.00
Total State	**$111,150.00**	**$111,150.00**
Required Local Match	$6,985.00	$6,985.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$118,135.00**	**$118,135.00**

Mekoryuk Wind Farm

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10073

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	72	Mekoryuk Wind Farm Construction	2195384	410038	Construction	8/20/08	6/30/12	Closed
5	870	Surplus Wind Energy Recovery for Mekoryuk Water System Heat	7050870	410083	Construction	7/1/12	12/31/15	Active

Grant 2195384: Mekoryuk Wind Farm Construction

Project Scope: This project involves the final design, permitting, construction, erection, startup, and commissioning of two Northwind 100a wind turbines to supplement the existing power generation and distribution system for the community of Mekoryuk.

Project Status: Tasks 4.5 Transmission/Distribution lines and 4.9 Secondary Load Controller are additional costs at grantee's expense. The turbines were installed in the fall 2010. The control Module was repaired and secondary/dump loads were installed in spring 2011. As-built drawing received in mid-2013. This project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$3,155,765.00	$3,155,765.00
Other State Funding	$0.00	$0.00
Total State	**$3,155,765.00**	**$3,155,765.00**
Required Local Match	$390,493.00	$390,493.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,546,258.00**	**$3,546,258.00**

Grant 7050870: Surplus Wind Energy Recovery for Mekoryuk Water System Heat

Project Scope: The Alaska Village Electric Cooperative (AVEC) , in collaboration with Alaska Native Tribal Health Consortium (ANTHC), will design and construct a secondary load(s) to capture excess energy from the existing wind farm in Mekoryuk. The secondary loads will be used to provide heat for the washeteria, water treatment plant and drinking water storage tank. ANTHC will provide the match.

Project Status: The grant is in place. The Collaborative Project Agreement between AVEC and ANTHC is also in place. The final design was approved June 6, 2014 by AVEC. AEA accepted the design June 12, 2014 and has released procurement and construction funds. Construction has been completed and an inspection of the project by ANTHC, AVEC, and AEA was completed January 6, 2014. Upon receipt of as-builts and final reimbursement the project will be closed-out.

One of the two wind turbines in Mekoryuk suffered a fire inside the base of the tower. The fire was unrelated to this project and will decrease the amount of excess electricity available to the Water Treatment Plant. AVEC is assessing their options and will most likely replace the turbine (which is insured) with a newer model. Performance of this project should return to, or improve upon, initial expectations when the turbine is replaced.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$264,459.00	$242,753.00
Other State Funding	$0.00	$0.00
Total State	**$264,459.00**	**$242,753.00**
Required Local Match	$13,919.00	$13,919.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$278,378.00**	**$256,672.00**

Mountain Village Wind_City and Tribe

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10159

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1067	Mountain Village Wind Feasibility and Conceptual Design	7071067	410097	Construction	7/1/14	6/30/16	Active

Grant 7071067: Mountain Village Wind Feasibility and Conceptual Design

Project Scope: This grant consists of $123,500 from Round 7 of the Renewable Energy Fund for a wind energy feasibility assessment and conceptual design in the city of Mountain Village. The total project cost is $130,000 with $6,500 provided by the grantee as a match.

Alaska Village Electric Cooperative (AVEC) has already completed a wind resource assessment. The grantee will complete a feasibility study and conceptual design of a wind farm along with any necessary controls or equipment needed to integrate the wind farm into the Mountain Village electrical grid. At the grantees option, they may combine both documents into a single report.

Project Status: Schedule and budget have been negotiated with the grantee. Grant agreement has completed internal review at AEA. The grant agreement was signed by all parties in December 2014.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$123,500.00	$20,796.00
Other State Funding	$0.00	$0.00
Total State	**$123,500.00**	**$20,796.00**
Required Local Match	$6,500.00	$2,503.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$130,000.00**	**$23,299.00**

Napaskiak Wind Power and Heat Recovery Project

Grantees	City of Napaskiak (Utility-Government)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10322

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	685	Napaskiak Wind, Heat and Heat Recovery Project	7040016	410063	Feasibility	7/1/11	6/30/13	Active

Grant 7040016: Napaskiak Wind, Heat and Heat Recovery Project

Project Scope: This grant consists of $61,225 from Round IV of the Renewable Energy Fund for a wind feasibility assessment in Napaskiak. City of Napaskiak will install the wind-measuring meteorological (met) tower currently in Napakiak and complete geotechnical reconnaissance to determine the advisability of installing wind turbines in Napaskiak. The study will also consider heat recovery and tying in to the Bethel grid.

Project Status: The met tower study indicated a class 2 wind resource which does not provide for an economically feasible project. A final report is being prepared and the grant will be closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$61,225.00	$44,439.35
Other State Funding	$0.00	$0.00
Total State	**$61,225.00**	**$44,439.35**
Required Local Match	$2,800.00	$3,688.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$64,025.00**	**$48,127.35**

Quinhagak Wind Farm

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10071

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	70	Quinhagak Wind Farm Construction	2195383	410037	Construction	8/20/08	6/30/12	Closed

Grant 2195383: Quinhagak Wind Farm Construction

Project Scope: The Alaska Village Electric Cooperative (AVEC) will complete final design, permitting, construction, erection, startup, and commissioning of three Northwind 100 wind turbines in Quinhagak.

Project Status: The wind turbines are up and commissioned effective November 30, 2010. The secondary load controller was damaged in Bethel along with the Mekoryuk secondary load controller. The controllers have been repaired in the communities, but this created a large delay in the project. The switchgear has been installed. Vibration sensors and thermister strings are in. Wireless communication has been installed, as is the satellite internet. Commissioning of the control module and the secondary load controller was completed on January 27, 2012. The grant is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$3,437,322.00	$3,437,322.00
Other State Funding	$0.00	$0.00
Total State	**$3,437,322.00**	**$3,437,322.00**
Required Local Match	$381,924.00	$381,924.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,819,246.00**	**$3,819,246.00**

Scammon Bay Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10196

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	646	Scammon Bay Wind Feasibility	7040022	410071	Feasibility	7/1/11	12/31/15	Active

Grant 7040022: Scammon Bay Wind Feasibility

Project Scope: The Alaska Village Electric Cooperative (AVEC) will conduct a wind resource and feasibility assessment in Scammon Bay. A detailed conceptual design will be delivered to AEA upon completion of the project.

Project Status: The grant agreement is in place. A 50 meter meteorological tower was installed in September 22, 2012. The winter met tower data has raised icing concerns. AEA will lend a 10 meter mast to AVEC to install at another potential wind turbine location to collect data and AVEC will install instrumentation at 10 meters on the current met tower. This will allow wind and icing data to be correlated between the two sites in order to determine the best site. Data indicates a question as to the actual orientation of the wind vane. Local personnel will verify the orientation of the vane boom. Draft CDR is complete. A new turbine site will be selected closer to town with less icing potential.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$142,500.00	$131,420.00
Other State Funding	$0.00	$0.00
Total State	**$142,500.00**	**$131,420.00**
Required Local Match	$7,500.00	$7,096.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$150,000.00**	**$138,516.00**

St. Mary's/ Pitka's Point Wind

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10195

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	645	St. Mary's/ Pitka's Point Wind Construction	7040017	410064	Construction	7/1/11	12/31/15	Active

Grant 7040017: St. Mary's/ Pitka's Point Wind Construction

Project Scope: This grant consists of $275,554 from Round IV of the Renewable Energy Fund (REF) for completing a wind feasibility assessment and final design in St. Marys/Pitkas Point. The total project cost is $309,998 with a match of $34,444 provided by the grantee.

Project Status: The application requested the design and construction of three Northern Power NW100b wind turbines. Only funding for design work was awarded. At AEA's request the grantee is considering the installation of one Emergya Wind Technology EWT 900 in place of the Northern Power turbines; in response to the possible interties between Mountain Village, St. Marys, Pilot Station, and St. Mary's. The change in scope exceeds the original budget estimate for task 5. AEA does not expect task 1.5 to be 100% completed under the Round IV grant. If future Renewable Energy Fund money is awarded, the remainder of task 5 will be included in the scope of the awarded grant. The deliverable from task 5 will be required to be accepted by the Authority before construction funds are released in a later REF proposal.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$275,554.00	$178,252.00
Other State Funding	$0.00	$0.00
Total State	**$275,554.00**	**$178,252.00**
Required Local Match	$34,444.00	$22,530.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$309,998.00**	**$200,782.00**

Surplus Wind Energy Recovery for Chevak Water System Heat

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10372

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	875	Surplus Wind Energy Recovery for Chevak Water System Heat	7050875	410084	Construction	7/1/12	12/31/15	Active

Grant 7050875: Surplus Wind Energy Recovery for Chevak Water System Heat

Project Scope: The Alaska Village Electric Cooperative (AVEC), in collaboration with the Alaska Native Tribal Health Consortium (ANTHC), will design and construct a secondary load(s) to capture excess energy from the existing wind farm in Chevak. The secondary loads will be used to provide heat for the water treatment plant and drinking water storage tank. ANTHC will provide the match.

Project Status: The grant is in place. The Collaborative Project Agreement between AVEC and ANTHC is also in place. The final design was approved June 6, 2014 by AVEC. AEA accepted the design June 12, 2014. The system is operational and upon receipt of final deliverables will be closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$240,260.00	$178,441.00
Other State Funding	$0.00	$0.00
Total State	**$240,260.00**	**$178,441.00**
Required Local Match	$12,645.00	$12,641.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$252,905.00**	**$191,082.00**

Toksook Wind Farm

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10072

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	71	Toksook Wind Farm Construction	2195385	410039	Construction	8/20/08	12/31/11	Closed

Grant 2195385: Toksook Wind Farm Construction

Project Scope: The Alaska Village Electric Cooperative (AVEC) will install a 4th NW100 wind turbine in Toksook Bay.

Project Status: The project is functioning and closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,037,750.00	$1,037,750.00
Other State Funding	$0.00	$0.00
Total State	**$1,037,750.00**	**$1,037,750.00**
Required Local Match	$215,306.00	$153,937.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,253,056.00**	**$1,191,687.00**

Kongiganak High Penetration Wind-Diesel Smart Grid

Grantees	Puvurnaq Power Company (Utility-Government)
Technology Type	WIND TO HEAT
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10105

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	110	Kongiganak High Penetration Wind-Diesel Smart Grid	2195411	410035	Construction	8/20/08	6/30/13	Active
7	1073	Kongiganak Wind Heat Electrical Thermal Storage	7071073	410099		7/1/14		Active

Grant 2195411: Kongiganak High Penetration Wind-Diesel Smart Grid

Project Scope: This project consists of the construction of a 450 kW high-penetration wind system in Kongiganak with multiple secondary thermal loads in residences and the school. This project design is similar to systems being installed in Kwigillingok and Tuntutuliak. Half ($1.5 million) of the funding is being provided by a legislative grant.

Project Status: All turbines are fully functioning on the new variable speed controller. The electric boiler and thermal stoves are functioning. The supervisory system is being dialed in/optimized. PPC has federal funding for the smart grid system. The smart meters are installed. The fibre optic line is installed between turbines. IES has finished the install of all ETS stoves. The EasyGen controllers are complete. The grantee expects the project to be completed by Q4 2013. AEA has reviewd the final deliverables and is closing out the grant.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,699,791.57	$1,699,791.57
Other State Funding	$0.00	$0.00
Total State	**$1,699,791.57**	**$1,699,791.57**
Required Local Match	$1,475,169.97	$1,475,169.97
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,174,961.54**	**$3,174,961.54**

Grant 7071073: Kongiganak Wind Heat Electrical Thermal Storage

Project Scope: This project expands existing Kongiganak Wind Heat Smart Grid System by adding additional electric thermal storage (ETS) devices. An additional 30 residences will be installed with ETS units for a total of 50.

Project Status: It is anticipated that the grant will be executed in February 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$311,500.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$311,500.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$311,500.00**	**$0.00**

Kwigillingok High Penetration Wind-Diesel Smart Grid

Grantees	Kwigillingok Power Company (Utility-Government)
Technology Type	WIND TO HEAT
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10102

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	107	Kwigillingok High Penetration Wind-Diesel Smart Grid	2195410	410036	Construction	8/20/08	6/30/13	Active

Grant 2195410: Kwigillingok High Penetration Wind-Diesel Smart Grid

Project Scope: This project consists of the construction of a 450 kW high-penetration wind system in Kwigillingok with multiple secondary thermal loads in residences and the school. The project design is similar to a system being installed in Kongiganak. Half ($1.6 million) of the funding is being provided by a legislative grant.

Project Status: Four out of five turbines are fully functional. The 3-phase tie-line upgrade is complete. The entire integrated system is projected to be commissioned by the fall of 2013. The stove and controller installation is complete. Additional controllers have been ordered. KPC has signed an agreement with Calista Corp to sell two wind turbines. AEA is waiting on follow-up information related to the contractor's as-built drawings and operations and maintenance plan that were submitted for review. Notice of Project Completion was mailed to grantee on June 11, 2013.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,600,000.00	$1,600,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,600,000.00**	**$1,600,000.00**
Required Local Match	$1,600,000.00	$1,600,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,200,000.00**	**$3,200,000.00**

Tuntutuliak High Penetration Wind-Diesel Smart Grid

Grantees	Tuntutuliak Comm Svcs Assoc (Utility-Cooperative)
Technology Type	WIND TO HEAT
Region	Lower Yukon-Kuskokwim
AEDG Project Code	10173

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	273	Tuntutuliak High Penetration Wind-Diesel Smart Grid	2195457	410051	Construction	7/1/09	6/30/13	Active

Grant 2195457: Tuntutuliak High Penetration Wind-Diesel Smart Grid

Project Scope: This project consists of the construction of a 450 kW high-penetration wind system in Tuntutuliak with multiple secondary thermal loads in residences and the school. The project design is similar to a system being installed in Kongiganak. Half ($1.5 million) of the funding is being provided by a legislative grant.

Project Status: All five turbines are operational. The cables are buried. The 3-phase power is extended. The contractor has finished installing all 30 ETS stoves. The fibre optic lines are run from the turbines to the powerhouse. Power poles for upgraded transformers were straightened. TCSA has signed an agreement with Calista Corp to sell one wind turbine. Funds have been zeroed out, but grant agreement is still open until project completed. AEA is waiting on follow-up information related to the contractor's as-built drawings and operations and maintenance plan that were submitted for review. Notice of Project Completion was mailed 7/24/2013 this has not yet been received, on 12/9/2013 a letter was sent to grantee effectively closing the grant.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,760,000.00	$1,760,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,760,000.00**	**$1,760,000.00**
Required Local Match	$1,600,000.00	$1,600,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,360,000.00**	**$3,360,000.00**

Point Lay Heat Recovery

Grantees	North Slope Borough (Utility-Government)
Technology Type	HEAT RECOVERY
Region	North Slope
AEDG Project Code	10396

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	244	Point Lay Heat Recovery Construction	2195467	403036	Construction	7/1/09	12/31/14	Closed

Grant 2195467: Point Lay Heat Recovery Construction

Project Scope: The North Slope Borough will use the grant funds to pay a portion of the cost to construct a waste heat system to deliver recovered heat from the existing diesel powerhouse to several public buildings in the community of Point Lay.

Project Status: This project is fully operational and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$395,912.00	$395,912.00
Other State Funding	$0.00	$0.00
Total State	**$395,912.00**	**$395,912.00**
Required Local Match	$39,591.00	$39,591.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$435,503.00**	**$435,503.00**

Wainwright Heat Recovery

Grantees	North Slope Borough (Utility-Government)
Technology Type	HEAT RECOVERY
Region	North Slope
AEDG Project Code	10395

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	243	Wainwright Heat Recovery	2195471	403037	Feasibility	7/1/09	8/31/12	Closed

Grant 2195471: Wainwright Heat Recovery

Project Scope: The North Slope Borough will use the grant funds to complete the final design of a waste heat system to deliver recovered heat from the existing diesel powerhouse to several public buildings in the community. The North Slope Borough (NSB) recently commissioned an update of the Project Analysis Report (feasibility study) entitled, "Village Heat Recovery" dated February 2006. The prior study assessed the previously constructed waste lines and costs associated with waste heat utilization in Arctic and/or permafrost conditions in six NSB villages. The NSB will be the primary participant and will utilize internal expertise and retain external consultants and contractors that have special expertise in designing waste hast pipelines, connecting building heating plants to the pipe lines, and recommending operations and maintenance schedules.

Project Status: The final design was completed, and the grantee requested a change in scope for the construction phase of the project. The request for change in scope will not move forward because the scope items were for maintenance repairs and are not eligible for reimbursement under the Renewable Energy Fund. This project was closed June 2013 with no expenditure of funds.

Atqasuk Transmission Line

Grantees	North Slope Borough (Utility-Government)
Technology Type	TRANSMISSION
Region	North Slope
AEDG Project Code	10146

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	245	Barrow to Atqasuk Transmission Feasibility Study	2195448	409021	Feasibility	7/1/09	12/31/11	Closed
4	609	Atqasuk Transmission Line	7040023	409021	Final Design	7/1/11	12/31/14	Closed

Grant 2195448: Barrow to Atqasuk Transmission Feasibility Study

Project Scope: The North Slope Borough proposes to study the viability of an overhead transmission intertie between two of their communities. This grant is to fund a portion of the feasibility analysis of an intertie between the regional center, Barrow, and the nearby smaller village of Atqasuk. The intertie would allow Atqasuk to reduce or eliminate the use of diesel fuel for its electrical generators and rely on electricity from Barrow which is produced by natural gas generators.

Project Status: The final report was received and reviewed by AEA. The project will be closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$157,429.67	$157,429.67
Other State Funding	$0.00	$0.00
Total State	**$157,429.67**	**$157,429.67**
Required Local Match	$44,403.25	$44,403.25
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$201,832.92**	**$201,832.92**

Grant 7040023: Atqasuk Transmission Line

Project Scope: This phase of the Barrow to Atqasuk Power Transmission Project will initiate the engineering of the project concept that was proven to be the most viable in the feasibility study. The intent of the feasibility study was to first determine if there is an economical solution for providing electric power to Atqasuk from a low cost energy source. That source, of course, is the natural gas that is available in the Barrow area. The next goal of the study determines which power transmission concept is the most economical and compatible with the prevailing technical, environmental and social constraints. In short, the most attractive power transmission concept will be the result of the feasibility study.

The winning concept then enters the preliminary engineering phase. The purpose of the preliminary design is to adequately define the project so that all stakeholders can understand it. These stakeholders include the owners, end-users, financiers and the concerned regulatory bodies. It is the basis for gaining approval and agreement to go forth with the project. It should be noted that this preliminary phase of engineering constitutes about 30% of the entire engineering effort. The 70% balance is for final design engineering and is required solely for constructing the project. The final design consists of detailed drawings, specifications and other materials relevant to the construction phase.

Project Status: The grant agreement was signed on December 4, 2012. The progress report submitted by the grantee on July 24,2013, notes that the contract was awarded to Leland Johnson & Associated for the preliminary engineering phase.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$210,000.00	$209,875.00
Other State Funding	$0.00	$0.00
Total State	**$210,000.00**	**$209,875.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$210,000.00**	**$209,875.00**

Kaktovik Wind Diesel

Grantees	North Slope Borough (Utility-Government)
Technology Type	WIND
Region	North Slope
AEDG Project Code	10385

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	610	Kaktovik Wind Diesel Feasibility Study	7040025	410073	Feasibility	7/1/11	12/31/14	Closed

Grant 7040025: Kaktovik Wind Diesel Feasibility Study

Project Scope: This project will complete the Kaktovik wind feasibility assessment, including "resolution of land and regulatory issues" and "environmental analysis" for a proposed 300kW wind project with associated integration components.

Project Status: MET Tower readings were completed in 2009. HDL was selected to develop the conceptual design. AEA, NSB and HDL conducted a site visit in August. A draft CDR was completed on August 30, 2013 and revised on September 20, 2013 with AEA feedback. The grantee has applied for Renewable Energy Fund, Round VII & VIII funding for the design and permitting phase. The final CDR has been accepted by AEA. The grantee has submitted the final invoice in October 2014. The grant was closed out in the first quarter of 2015.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$131,859.00	$131,859.00
Other State Funding	$0.00	$0.00
Total State	**$131,859.00**	**$131,859.00**
Required Local Match	$13,041.00	$13,041.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$144,900.00**	**$144,900.00**

Point Hope Wind Diesel Generation Project

Grantees	North Slope Borough (Utility-Government)
Technology Type	WIND
Region	North Slope
AEDG Project Code	10224

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	413	Point Hope Wind Diesel Generation Project	7030012	409027	Feasibility	7/1/10	6/30/15	Active
4	611	Point Hope Wind turbine Design	7040026	409027	Final Design	7/1/11		Active

Grant 7030012: Point Hope Wind Diesel Generation Project

Project Scope: This project will complete the feasibility assessment, including "resolution of land and regulatory issues" and "environmental analysis" for a proposed 900-1000kW wind project with associated integration components in Point Hope.

Project Status: The grant agreement is in place. A wind resource analysis has been published. The geotech review is completed. An avian study was completed by ABR in Q1 2014. A CDRfinal report has been accepted by AEA. NSB provided additional funding to complete the Conceptual Design Report (CDR). The grant period has been extended to allow for changes to the CDR. US Fish & Wildlife consultation meetings were held with the Fairbanks regional office. Final site and turbine selection is necessary before the CDR will be accepted and design funds released through REF grant 7040026.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$132,000.00	$124,048.42
Other State Funding	$0.00	$0.00
Total State	**$132,000.00**	**$124,048.42**
Required Local Match	$14,667.00	$13,783.16
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$146,667.00**	**$137,831.58**

Grant 7040026: Point Hope Wind turbine Design

Project Scope: This project will complete the design and permitting for a wind farm in Point Hope. A grant for conceptual design was awarded to Point Hope in Round III of the Renewable Energy Fund (REF).

Project Status: The grant agreement is under internal review. No funds will be allocated until the conceptual design report from Round III grant #7030012 has been accepted by AEA and that grant has been closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$298,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$298,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$298,000.00**	**$0.00**

Point Lay Wind Generation

Grantees	North Slope Borough (Utility-Government)
Technology Type	WIND
Region	North Slope
AEDG Project Code	10145

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	412	Point Lay Wind Diesel Generation Project	7030014	409029	Feasibility	7/1/10	6/30/15	Active
4	612	Point Lay Wind Generation Design	7040027	403036	Final Design	7/1/11		Active

Grant 7030014: Point Lay Wind Diesel Generation Project

Project Scope: This project will complete the feasibility assessment, including "resolution of land and regulatory issues" and "environmental analysis" for a proposed 675-750kW wind project with associated integration components in Point Lay.

Project Status: The grant agreement is in place. A wind resource analysis has been published. The geotech review is completed. An avian study was completed by ABR in Q1 2014. A CDRfinal report has been accepted by AEA. NSB provided additional funding to complete the Conceptual Design Report (CDR). The grant period has been extended to allow for changes to the CDR. US Fish & Wildlife consultation meetings were held with the Fairbanks regional office. Final site and turbine selection is necessary before the CDR will be accepted and design funds released through REF grant 7040027.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$132,000.00	$114,845.38
Other State Funding	$0.00	$0.00
Total State	**$132,000.00**	**$114,845.38**
Required Local Match	$14,667.00	$12,760.60
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$146,667.00**	**$127,605.98**

Grant 7040027: Point Lay Wind Generation Design

Project Scope: This project will complete the design and permitting for a wind farm in Point Lay A grant for CDR was received for Point Lay in Renewable Energy Fund, Round III.

Project Status: This grant agreement is under internal review. No funds will be allocated until the CDR from Round III #7030014 has been accepted by AEA and that grant has been closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$298,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$298,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$298,000.00**	**$0.00**

Wainwright Wind Turbine

Grantees	North Slope Borough (Utility-Government)
Technology Type	WIND
Region	North Slope
AEDG Project Code	10144

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	414	Wainwright Wind Diesel Generation Project	7030013	409028	Feasibility	7/1/10	6/30/15	Active
4	613	Wainwright Wind Turbine	7040024	403037	Final Design	7/1/11		Active

Grant 7030013: Wainwright Wind Diesel Generation Project

Project Scope: This project will complete the feasibility assessment, including "resolution of land and regulatory issues" and "environmental analysis" for a proposed 750-900kW wind project with associated integration components in Wainwright.

Project Status: The grant agreement is in place. A wind resource analysis has been published. The geotech review is completed. An avian study was completed by ABR in Q1 2014. A CDRfinal report has been accepted by AEA. NSB provided additional funding to complete the Conceptual Design Report (CDR). The grant period has been extended to allow for changes to the CDR. US Fish & Wildlife consultation meetings were held with the Fairbanks regional office. The CDR has been accepted and this grant will be closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$132,000.00	$121,091.94
Other State Funding	$0.00	$0.00
Total State	**$132,000.00**	**$121,091.94**
Required Local Match	$14,667.00	$13,454.65
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$146,667.00**	**$134,546.59**

Grant 7040024: Wainwright Wind Turbine

Project Scope: This project will complete the design and permitting for a wind farm in Wainwright. A grant for CDR was received for Wainwright in Renwable Energy Fund, Round III.

Project Status: The grant agreement is under internal review. No funds will be allocated until the conceptual design from Round III grant #7030013 has been accepted by AEA and that grant is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$298,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$298,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$298,000.00**	**$0.00**

Kotzebue Paper and Wood Waste to Energy Project

Grantees	City of Kotzebue (Local Government)
Technology Type	BIOFUELS
Region	Northwest Arctic
AEDG Project Code	10184

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	667	Kotzebue Paper and Wood Waste to Energy Project	7040029	402117	Feasibility	7/1/11	12/31/12	Closed

Grant 7040029: Kotzebue Paper and Wood Waste to Energy Project

Project Scope: The purpose of this project is to determine the feasibility of converting paper, cardboard, and other wood-based waste into thermal energy for heating the municipal water system of Kotzebue. The City of Kotzebue will complete a feasibility study and conceptual design for a paper/wood waste thermal energy system. To this end, the City will study the paper/wood waste stream in Kotzebue, environmental impacts of the combustion process, and the economics of the process.

Project Status: The Kotzebue Paper and Wood Waste to Energy Project has been successfully completed and closed out. The City of Kotzebue project has submitted all final project documents. AEA has reviewed and accepted the final feasibility study and will provide future assistance to the City of Kotzebue if they decide to proceed with project.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$66,578.25	$66,578.25
Other State Funding	$0.00	$0.00
Total State	**$66,578.25**	**$66,578.25**
Required Local Match	$3,838.34	$3,838.34
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$70,416.59**	**$70,416.59**

Upper Kobuk River Biomass

Grantees	City of Kobuk (Local Government), Northwest Inupiat Housing Authority (Government Entity - Housing Authority), Northwest Arctic Borough (Government Entity - Housing Authority)
Technology Type	BIOMASS
Region	Northwest Arctic
AEDG Project Code	10061

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	59	Kobuk River Valley Woody Biomass Feasibility	2195397	402031	Feasibility	8/20/08	12/31/11	Closed
4	668	Upper Kobuk River Biomass	7040028	402031	Feasibility	7/1/11	12/31/14	Closed
5	840	Kobuk Biomass Design & Construction Project	7050840	402031	Construction	7/1/12	9/30/15	Closed

Grant 2195397: Kobuk River Valley Woody Biomass Feasibility

Project Scope: The feasibility study will include the following milestones.

Resource Assessment will determine the sustainable level of biomass harvest in the Upper Kobuk (Ambler, Shungnak, and Kobuk villages) and utilize Geographic Information Systems (GIS) for future harvest planning. Harvest System Assessment will assess a harvest cost delivery model based on two different scales: small individual village scale or a regional harvest scale to service all three villages. Wood Yard Conceptual Design that links production of wood product chips or cord wood with appropriate boiler configuration and a wood processing cost model. Boiler Feasibility and Conceptual Design will determine the most cost effective and best fit for chip or round wood boilers and the amount of annual wood usage, determination with a level one feasibility cost summary, the type of boiler locations and potential for district heating major buildings or houses. Preliminary Business Models will determine the initial appropriate organization and ownership of harvest systems, wood yards, and wood energy utilities and basic costs and cash flows for each village. Many sources will be utilized including the Cold Climate Research Center in Fairbanks. Communication Process will fully involve the communities in supporting, empowering, and making the decisions on the appropriate structure for sustainable wood utilization in the region. Final Presentation will inform project partners and especially villages of the wood energy feasibility, business model, and key pros and cons of moving forward with program construction and implementation.

Project Status: The Conceptual Design Report is complete and this project is in close-out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$231,606.00	$231,606.00
Other State Funding	$0.00	$0.00
Total State	**$231,606.00**	**$231,606.00**
Required Local Match	$257,212.00	$257,212.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$488,818.00**	**$488,818.00**

Grant 7040028: Upper Kobuk River Biomass

Project Scope: The Northwest Inupiat Housing Authority, in partnership with NANA Regional Corporation, Maniilaq Association, WH Pacific, Inc., and Kobuk, Shungnak, and Ambler Native Villages, will complete the design and permitting for a thermal biomass system. The system will be located in Kobuk, Shungnak, or Ambler based on the recommendation of the feasibility Conceptual Design report funded by Round III of the Renewable Energy Fund. This project will deliver project scoping and contractor solicitation, permit applications, and approvals, environment assessment and mitigation plans, resolution of land use and right of way issues, final system design, engineering cost estimate, economic and financial analyses, power sales agreements with approved rates and the final business/operational plan. Prerequisites for AEA grant reimbursement are acceptance of Resource Management Plan including resource assessment and harvest plan/costs, Preliminary Business/Operational Plan, and Boiler Feasibility and Conceptual Design Report and Drawings.

Project Status: The Conceptual Design Report is complete and this project is in close-out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$185,867.00	$185,867.00
Other State Funding	$0.00	$0.00
Total State	**$185,867.00**	**$185,867.00**
Required Local Match	$10,254.00	$10,254.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$196,121.00**	**$196,121.00**

Grant 7050840: Kobuk Biomass Design & Construction Project

Project Scope: This project will deliver final design and construction for a wood burning boiler system in Kobuk. The intent for this project is to increase the use of locally available, biomass energy for thermal heating. This project includes system design (must include metering and monitoring equipment and instrument), right of way and survey requirement, construction permitting, installation of a wood burning boiler system (Garn unit proposed), construction of a covered wood splitting and storage shed, gravel pad/foundation, perimeter fencing, hydronic piping and other mechanical components, electrical controls, harvesting and processing equipment (saws, wood splitters, etc.), and freight and travel costs.

The city must coordinate with NWIHA and their consultant in developing the project. AEA must accept final design before construction funding is disbursed. Wood supply contract for 5 years must be in place before construction funding is disbursed.

Project Status: This project operational and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$356,424.00	$354,193.95
Other State Funding	$0.00	$0.00
Total State	**$356,424.00**	**$354,193.95**
Required Local Match	$45,449.00	$45,449.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$401,873.00**	**$399,642.95**

Ambler Heat Recovery

Grantees	City of Ambler (Local Government)
Technology Type	HEAT RECOVERY
Region	Northwest Arctic
AEDG Project Code	10204

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	307	Ambler Heat Recovery Construction	2195453	403033	Construction	7/1/09	6/30/15	Closed

Grant 2195453: Ambler Heat Recovery Construction

Project Scope: The City of Ambler will use grant funds to construct buried piping, pumps, heat exchangers, and other system components required to recover waste heat from the existing Alaska Village Electric Cooperative (AVEC) power plant and confer this energy to the new City water plant and washeteria in Ambler. This project will involve coordination between the City of Ambler, AVEC, the Northwest Arctic Borough, and the Alaska Native Tribal Health Consortium (ANTHC).

Grant funding of $435,000 comes with the requirement that the City of Ambler and AVEC provide an acceptable heat purchase agreement to AEA before the disbursement of grant funds.

Project Status: This project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$434,928.09	$434,928.09
Other State Funding	$0.00	$0.00
Total State	**$434,928.09**	**$434,928.09**
Required Local Match	$65,000.00	$65,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$499,928.09**	**$499,928.09**

Heat Recovery for the Water Treatment Plant for Noorvik

Grantees	City of Noorvik (Local Government)
Technology Type	HEAT RECOVERY
Region	Northwest Arctic
AEDG Project Code	10410

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	941	Noorvik Heat Recovery - Water Treatment Plant	7060941	403067	Construction	7/1/13	12/31/16	Active

Grant 7060941: Noorvik Heat Recovery - Water Treatment Plant

Project Scope: This grant consists of $985,805 from Round VI of the Renewable Energy Fund for design and construction of heat recovery project to capture the recovered heat from the existing electrical power plant to the water treatment plant (WTP). To provide maximum recovered heat benefit, the piping in the WTP needs to be reconfigured, and the heat exchangers will be added, etc.

It is expected to reduce the fuel oil usage of the facilities by18,600 gallons per year by replacing that consumption with jacket heat from the diesel engines, nearly offsetting the total fuel oil usage. Arctic piping will run from the power plant alongside the road to the end-user building. The end-user facility will also receive a BTU meter to provide recovered heat use totalization and instantaneous use. The feasibility study for this project was completed in 2012.

The total project cost is $1,015,580 with $29,580 of in-kind contribution provided by Alaska Native Tribal Health Consortium (ANTHC) as a match. ANTHC will be providing project and program management services.

City of Noorvik is the grantee. City of Noorvik and the power utility must finalize a heat sales agreement; a copy must be submitted to AEA before construction funds are released to grantee. Similarly, a final design must be accepted by AEA for review before construction funds are released to the grantee.

The final reimbursement of grant funds will not be disbursed without an O&M reporting plan accepted by the Authority Project Manager. The Authority may retain up to 10% of the contributed grant funds until the grantee has submitted an acceptable O&M reporting plan.

Project Status: The design is 65% complete

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$985,805.00	$106,743.09
Other State Funding	$0.00	$0.00
Total State	**$985,805.00**	**$106,743.09**
Required Local Match	$29,580.00	$26,011.42
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,015,385.00**	**$132,754.51**

Kotzebue Electric Heat Recovery

Grantees	Kotzebue Electric Association (Utility-Private)
Technology Type	HEAT RECOVERY
Region	Northwest Arctic
AEDG Project Code	10136

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	235	Kotzebue Electric Heat Recovery Construction	2195454	403034	Construction	7/1/09	12/31/16	Active

Grant 2195454: Kotzebue Electric Heat Recovery Construction

Project Scope: This grant is to fund the purchase and installation of equipment that will recover unutilized heat from the diesel generator exhaust stacks for an expanded district heating system and a new absorption chiller to make ice for the fishing fleet in Kotzebue.

Project Status: This project is in the construction phase and is anticipating completion in 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$915,627.00	$824,064.30
Other State Funding	$0.00	$0.00
Total State	**$915,627.00**	**$824,064.30**
Required Local Match	$300,000.00	$120,752.52
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,215,627.00**	**$944,816.82**

Cosmos Hills Hydroelectric

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	HYDRO
Region	Northwest Arctic
AEDG Project Code	10075

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	74	Cosmos Hills Hydroelectric Feasibility Study	2195413	407040	Feasibility	8/20/08	6/30/14	Closed

Grant 2195413: Cosmos Hills Hydroelectric Feasibility Study

Project Scope: The project is to prepare a feasibility study of potential hydro resources in the Cosmos Hills area to serve Ambler, Shungnak, Kobuk, and Kiana. The first step will be to review prior studies, update cost estimates, and rerun economic analyses to arrive at a list of economic sites for further study, which will be documented in a reconnaissance report. Community outreach, stream gauging and hydrology study, survey and mapping, geotechnical review, field studies, environmental assessment and permitting will also be accomplished. The final outcome will consist of a feasibility level report and a conceptual design report.

Project Status: The Alaska Village Electric Cooperative (AVEC) and consultants WHPacific and Hatch completed the final feasibility report. A proposed 700 kW development on the Kogoluktuk River was recommended for further feasibility analysis, design, and permitting.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,025,000.00	$1,025,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,025,000.00**	**$1,025,000.00**
Required Local Match	$50,625.00	$50,625.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,075,625.00**	**$1,075,625.00**

Ambler Solar PV

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	SOLAR PV
Region	Northwest Arctic
AEDG Project Code	10076

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	75	Ambler Solar PV Construction	2195412	411002	Feasibility	8/20/08	8/30/10	Closed

Grant 2195412: Ambler Solar PV Construction

Project Scope: This project is for design / permitting and construction of a photovoltaic solar energy system. A grid-tied batteryless 50.4 kW photovoltaic system will be installed on property adjacent to the Alaska Village Electric Cooperative (AVEC) power plant and tank farm in Ambler. The system will consist of 225 ea 224-watt panels on adjustable 630 sq ft. racking mounted directly on a Triodetic Multipoint foundation system. Each adjustable array utilizes one 7000 watt inverter 277 VAC power.

Project Status: After the initial design work was completed, the grantee and AEA determined that the project as scoped was not economically feasible due to high costs of the Triodetic foundation. The project has been closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$20,122.00	$20,122.00
Other State Funding	$0.00	$0.00
Total State	**$20,122.00**	**$20,122.00**
Required Local Match	$2,012.00	$2,012.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$22,134.00**	**$22,134.00**

Buckland, Deering, Noorvik Wind Farm

Grantees	Northwest Arctic Borough (Government Entity - Housing Authority)
Technology Type	WIND
Region	Northwest Arctic
AEDG Project Code	10058

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	56	Buckland, Deering, Noorvik Wind Farm Construction	2195377	410042	Construction	8/20/08	6/30/16	Active

Grant 2195377: Buckland, Deering, Noorvik Wind Farm Construction

Project Scope: The current grant agreement allocates funds to complete feasibility studies, conduct geotechnical studies, collect detailed bids and complete final design and permitting in all three communities. The communities of Buckland and Deering have funds to construct wind projects. The grantee match is from NANA-funded wind studies and in-kind materials. This grant includes project codes 410058, 410059 and 410060.

Project Status: Buckland, Deering and Noorvik draft conceptual designs have been accepted by AEA. Buckland and Deering 95% designs have been accepted by AEA. The Noorvik project is on hold due to the lack of a strong nearby wind resource and a power plant that is not optimized for the integration of variable wind power. Deering turbine is delivered and being stored in Kotzebue over the winter. Construction bids were received and a contruction contractor has been chosen. Deering now has separate funding from NANA Corp. to overhaul all of their diesel gensets and has met with AEA to share their O&M plans. Buckland construction began in fall 2014 with the system in final commissioning as of summer 2015. Deering construction began in August 2015 and will continue through the fall.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$10,758,928.00	$7,538,053.24
Other State Funding	$0.00	$0.00
Total State	**$10,758,928.00**	**$7,538,053.24**
Required Local Match	$162,500.00	$154,777.12
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$10,921,428.00**	**$7,692,830.36**

Kivalina Wind-Intertie

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Northwest Arctic
AEDG Project Code	10292

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	512	Kivalina Wind-Intertie Feasibility Analysis & Conceptual Design	7030016	409024	Feasibility	7/1/10	6/30/15	Active

Grant 7030016: Kivalina Wind-Intertie Feasibility Analysis & Conceptual Design

Project Scope: This project will complete the feasibility assessment, including "resolution of land and regulatory issues" and "environmental analysis" for a proposed 300kW wind project in Kivalina with an associated intertie to the Delong Mtn Transportation System (DMTS) port 17 miles to the southeast.

Project Status: The grant agreement is in place. The Alaska Village Electric Cooperative (AVEC) has retained WH Pacific as their engineering contractor. V3 Energy installed a met tower in May 2011. The grantee is also getting wind data from the Red Dog port. The shoreline route from the port to Kivalina passes through Cape Krusenstern NM. The wind data at the port is very bimodal: calm (45%) or strong wind events. Data was collected from the Kivalina site for one year with more stable winds. Wind report final draft was completed July 2012. A preliminary analysis between the two sites has been completed as has a geotech recon report. AVEC has delivered the Final Conceptual Design Report and Options Analysis. AVEC has purchased, shipped and installed a new met tower to Kisimigiuktuk Hill to collect wind data with the remaining funds. AEA will write the wind resource analysis for the K-Hill site after at least a year of data collection has finished. Grant close out procedure has been initiated.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$183,350.00	$177,005.00
Other State Funding	$0.00	$0.00
Total State	**$183,350.00**	**$177,005.00**
Required Local Match	$9,650.00	$9,317.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$193,000.00**	**$186,322.00**

Kotzebue High Penetration Wind-Battery-Diesel Hybrid

Grantees	Kotzebue Electric Association (Utility-Private)
Technology Type	WIND
Region	Northwest Arctic
AEDG Project Code	10085

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	85	Kotzebue Wind Farm Expansion Construction	2195427	409022	Construction	8/20/08	12/31/12	Active
3	518	High Penetration Wind-Battery-Diesel Hybrid	7030015	409022	Construction	7/1/10	10/31/15	Active

Grant 2195427: Kotzebue Wind Farm Expansion Construction

Project Scope: This project expands the installed wind capacity in Kotzebue from 1.14 MW to 2.95 MW with the addition of two 900 kW turbines. Secondary loads will be installed at locations within the community to provide heat during times of excess power. An energy storage device will be installed to provide grid stability and time shift electrical generation.

Project Status: This grant has been closed out and the project is being finished under Grant #7030015.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$4,000,000.00	$4,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$4,000,000.00**	**$4,000,000.00**
Required Local Match	$1,404,460.00	$1,404,460.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$5,404,460.00**	**$5,404,460.00**

Grant 7030015: High Penetration Wind-Battery-Diesel Hybrid

Project Scope: This project expands the installed wind capacity in Kotzebue from 1.14 MW to 2.95 MW with the addition of two 900 kW turbines. Secondary loads will be installed at locations within the community to provide heat during times of excess power. An energy storage device will be installed to provide grid stability and time shift electrical generation.

Project Status: The turbines have been installed and commissioned and Kodiak Electric Association (KEA) is working on the final construction punch list for the wind farm and transmission line. Contracts for the thermal secondary loads are being negotiated. Premium Power shipped their flow battery out of Kotzebue after it was determined a major re-design was required. The decision not to continue with the Premium Power battery and Request for Information was sent out in late 2013 to identify an energy storage solution. Responses to a Request for Proposals were received in late 2014. KEA selected the lithium-ion Intensium Max 1000kWh/500kW battery from Saft and the batter was installed in the fall of 2015.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$4,000,000.00	$2,681,052.00
Other State Funding	$0.00	$0.00
Total State	**$4,000,000.00**	**$2,681,052.00**
Required Local Match	$1,404,459.00	$948,993.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$5,404,459.00**	**$3,630,045.00**

Selawik Hybrid Wind Diesel System Turbine Upgrade

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	WIND
Region	Northwest Arctic
AEDG Project Code	10311

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	647	Selawik Hybrid Wind Diesel System Turbine Upgrade	7040030	410074	Feasibility	7/1/11	12/31/15	Active

Grant 7040030: Selawik Hybrid Wind Diesel System Turbine Upgrade

Project Scope: The Alaska Village Electric Cooperative (AVEC) will conduct a wind resource and feasibility assessment to study the potential of replacing the old AOC turbines with NW100s or other models. A detailed conceptual design will be delivered to AEA upon completion of the project.

Project Status: The grant agreement is in place. AVEC is working with a consultant to identify met tower needs and options for new turbines. Information was collected on machines that could be used to repower the site. AVEC had discussions with their term consultant regarding repowering the wind site with different turbines. The consultant developed a proposal to perform the following and provided a fee proposal. AVEC purchased and delivered a 34 meter met tower to Selawik. The FAA permit for installation and operation of the met tower was approved. The tower has been raised and is collecting wind data.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$85,000.00	$31,606.00
Other State Funding	$0.00	$0.00
Total State	**$85,000.00**	**$31,606.00**
Required Local Match	$8,500.00	$3,342.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$93,500.00**	**$34,948.00**

Biomass-fired Organic Rankine Cycle System

Grantees	Chena Power, LLC (Utility-Government)
Technology Type	BIOMASS
Region	Railbelt
AEDG Project Code	10055

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0, 1	-53, 53	Biomass-fired Organic Rankine Cycle System	2195358	402025	Construction	8/20/08	12/31/13	Active

Grant 2195358: Biomass-fired Organic Rankine Cycle System

Project Scope: This project will demonstrate a biomass-fueled heat and power generation system utilizing an Organic Rankine Cycle (ORC) power plant that is potentially suitable for deployment in rural Alaskan communities with available biomass resource.

For the purpose of this demonstration unit, the biomass fuel will be waste paper from the Fairbanks Borough waste stream and other suitable woody material. The $2,000,000 in grant funds will be used to purchase fuel processing equipment, a fluidized bed boiler system, two United Technologies Research Center ORC units that will each generate 202 kWh net power, and miscellaneous balance of plant equipment. If changes in timeline are anticipated or occur, the grantee should inform AEA as soon as possible.

The grantee is required to petition Regulatory Commission of Alaska for a certificate of public convenience and necessity and economic rate regulation prior to release of construction funds.

Project Status: The system is shutdown, but the grant is not closed. Still discussing with grantee.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$1,900,000.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$1,900,000.00**
Required Local Match	$1,000,000.00	$2,109,009.34
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,000,000.00**	**$4,009,009.34**

Delta Junction Wood Chip Heating

Grantees	Delta/Greely School District (Government Entity - School District)
Technology Type	BIOMASS
Region	Railbelt
AEDG Project Code	10107

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	112	Delta Junction Wood Chip Heating	2195395	402033	Construction	8/20/08	6/30/12	Closed

Grant 2195395: Delta Junction Wood Chip Heating

Project Scope: The Delta/Greely School District proposes a Wood Chip Boiler Heating System to heat 44,000 sq. ft. of educational space in the sub-arctic. The building would be located 50 ft. away from the Delta High School new mechanical room. This grant will fund the cement building to house wood chip boiler, the chip storage room, four chip storage trailers, and the chip feeding and chip drying process

The following entities are involved in this project: DGSD and its committee, Alaska Department of Natural Resources Forestry, CTA, CE2 Engineers, T.R. Miles Technical Consultants, Delta Logging and Milling Associates, and USKH (architectural company).

Project Status: The project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$2,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$2,000,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,000,000.00**	**$2,000,000.00**

Port Graham Biomass Waste Heat Demo Project

Grantees	Port Graham Village Council (Local Government)
Technology Type	BIOMASS
Region	Railbelt
AEDG Project Code	10276

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	689	Port Graham Biomass Waste Heat Demo Project	7040061	402116	Feasibility	7/1/11	6/30/15	Closed

Grant 7040061: Port Graham Biomass Waste Heat Demo Project

Project Scope: The Village Council of Port Graham will complete the final design and permitting of a 1.45 MMBtu/hr. cordwood-fired district heating system that will supply the New Fire Hall, the Old Fire Hall (and accessory building housing a 4-wheeler foam fire trailer), the Port Graham Clinic, the Port Graham Village Council Office, the Port Graham Museum/Headstart Building and the Port Graham Corporation Office. The proposed site for the biomass facility is the Old Water Plant Building.

Project Status: Village has submitted design documents and requested round 8 RE Funds for construction. Project was not recommended for funding. The B/C ratio is 0.36. This grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$75,000.00	$58,600.00
Other State Funding	$0.00	$0.00
Total State	**$75,000.00**	**$58,600.00**
Required Local Match	$25,000.00	$14,119.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$100,000.00**	**$72,719.00**

Susitna Valley High School Wood Heat

Grantees	Matanuska Susitna Borough (Local Government)
Technology Type	BIOMASS
Region	Railbelt
AEDG Project Code	10299

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	623	Susitna Valley High School Wood Heat	7040062	402021	Construction	7/1/11	12/31/14	Closed

Grant 7040062: Susitna Valley High School Wood Heat

Project Scope: The Matanuska-Susitna Borough will complete the construction of a wood-fired heating system for the Susitna Valley High School. It includes the Energy Building which houses the boilers, the on-site storage of the wood fuel, the connection piping to the building and the controls required to monitor and control the system. The project also includes finalizing the harvest and business plan.

Project Status: AEA and MSB determined that there were both technical and operational problems that made continuation of the project unfeasible. The project has been terminated and MSB has returned the grants funds, $750,000.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$0.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$0.00**	**$0.00**
Required Local Match	$2,045.74	$2,045.74
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,045.74**	**$2,045.74**

Mount Spurr Geothermal Project

Grantees	Ormat Nevada, Inc. (Independent Power Producer), ORNI 46 LLC (Independent Power Producer)
Technology Type	GEOTHERMAL
Region	Railbelt
AEDG Project Code	10157

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	477	Mount Spurr Geothermal Project	7030018	406012	Feasibility	7/1/10	6/30/12	Closed
4	652	Mount Spurr Geothermal Project 2	7040032	406012	Construction	7/1/11		Closed

Grant 7030018: Mount Spurr Geothermal Project

Project Scope: ORNI 46 LLC used a Round III Renewable Energy Fund grant to complete a staged reconnaissance and assessment of the geothermal resources on Mt. Spurr. Work completed included: aeromagnetic gravity survey, electromagnetic geophysical surveys, LiDAR survey, field work, mapping, geochemical sampling, and drilling two temperature gradient and two slim holes. Work began in the summer of 2010 and was completed in the fall of 2011. Ormat Nevada, Inc. has previously completed the initial reconnaissance field work in 2009.

The activities completed with the grant funds are follow-up activities to determine whether to proceed to drilling production wells and further commercial development of the Mt. Spurr geothermal project. Preliminary analysis of data from field reconnaissance of the region conducted by Ormat Nevada, Inc. in July and August of 2009, coupled with historical exploration work from the mid-1980's, indicated the potential existence of a commercial size geothermal resource; however, further exploration is required in order to confirm it.

The grant had a two-phased program for continued resource studies and assessment surveys. Phase I, included mapping, further geochemical sampling, remote sensing, aerial and ground-based geophysics and temperature gradient drilling. Phase II included slim-hole drilling.

Project Status: Ormat reported disappointing exploration drilling results in 2011, drilling to a depth of 4,500 feet in the eastern leases on Mt. Spurr. The maximum temperature encountered was 140 degrees F, which is substantially less than the minimum for a commercial system.

In the summer of 2012, Ormat conducted a geo-hazard study of the central Mt. Spurr area. This was followed with additional field work in 2013, which was aimed at locating future drill targets in this area. The results of this field work, which was funded by Ormat, are currently under review.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,993,158.00	$1,993,158.00
Other State Funding	$0.00	$0.00
Total State	**$1,993,158.00**	**$1,993,158.00**
Required Local Match	$2,158,603.00	$2,549,052.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$4,151,761.00**	**$4,542,210.00**

Grant 7040032: Mount Spurr Geothermal Project 2

Project Scope: Mount Spurr represents what currently appears to be the best opportunity in Alaska to develop a utility-scale base-load geothermal energy power plant. Located 80 miles west of Anchorage on state lands which were leased by Ormat Nevada Inc. in October of 2008, a successful power project at Mt. Spurr would serve communities along the Railbelt through power purchased by one or more of the Railbelt electric utilities.

This grant request is for the start of construction of the geothermal well field and later on (beyond the scope of this grant application), the power plant itself. The first step in construction of a commercial geothermal well-field is to drill a full-size deep geothermal production well, in order to tap into the geothermal reservoir and flow test the geothermal fluid in order to measure its

temperature, pressure, chemical composition and other attributes. The location of this well will be based on a synthesis of 2010 and 2011 exploration work mentioned before. Follow-up steps (beyond the scope of this grant application) will include drilling additional production wells; drilling one or more injection wells; performing a long-term multi-well flow test to measure the size of the geothermal reservoir; drilling additional production and injection wells and building a power plant, including a geothermal gathering system, utility interconnection facilities etc.

Project Status: The Round 4 grant was never issued, as it was contingent upon successful exploration results from the Round 3 grant supporting feasibility work. The applicant requested that the Round 4 funds intended for production well drilling be used to continue earlier phase work of exploration drilling to identify a hot enough resource. AEA negotiated with Ormat but could not come to an agreement on cost share and Ormat cancelled the project. The Renewable Energy Fund budget for this project of $1,999,972 was released within the Fund to re-grant to Round 8 REF projects during the 2015 legislative session.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,999,972.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$1,999,972.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,999,972.00**	**$0.00**

Alaska Sealife Center Ph II Seawater Heat Pump Project

Grantees	City of Seward (Local Government)
Technology Type	HEAT PUMPS
Region	Railbelt
AEDG Project Code	10251

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	453	Alaska Sealife Center Ph II Seawater Heat Pump Project	7030017	406011	Construction	7/1/10	6/30/12	Closed

Grant 7030017: Alaska Sealife Center Ph II Seawater Heat Pump Project

Project Scope: The City of Seward used a Round III grant from the Renewable Energy Fund to complete the installation of a seawater heat pump to supply space heating for the Alaska Sea Life Center in Seward. (The City of Seward is the owner of the Alaska Sea Life Center, which is leased and operated by the Seward Association for the Advancement of Marine Science). This Round III grant was combined with another grant the Alaska Sea Life Center has received from the Denali Commission's Emerging Energy Technology grant fund ($426,720) for the completion of this project.

Project Status: During the Quarter ending June 30, 2012, system commissioning was completed, including Tracer operating system training. The sea water supply pump loop has performed well to date, including the submerged turbine pump, in-line strainer, and titanium plate heat exchanger. No evidence of fouling has been detected, and the heat exchanger is delivering approach temperatures that are consistently less than the design specification of 2 degrees F.

Issues with the systems data logger prevented data collection for several months; operational data is now available starting in March of 2013. Since commission, the system has since been expanded and is now able to provide heat to the concrete slabs, sidewalk heating for snow melt, and pre-heating of domestic hot water in addition to providing space heating for the building. The oil fuel boilers are available for backup, but have not been used since the heat pump system came online.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$286,580.00	$286,580.00
Other State Funding	$0.00	$0.00
Total State	**$286,580.00**	**$286,580.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$286,580.00**	**$286,580.00**

Seldovia House Ground Source Heat Pump Project

Grantees	Cook Inlet Housing Authority (Local Government)
Technology Type	HEAT PUMPS
Region	Railbelt
AEDG Project Code	10444

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1031	Seldovia House Ground Source Heat Pump Project	7071031	406023	Construction	7/1/14	6/30/15	Active

Grant 7071031: Seldovia House Ground Source Heat Pump Project

Project Scope: This grant consists of $318,289 from Round 7 of the Renewable Energy Fund for design, permitting, and construction of a ground source heat pump system that will provide supplemental space heat and domestic hot water heating to the Seldovia House Senior Housing Complex in the City of Seldovia. The total project cost is estimated to be $362,805 with $44,516 provided by the grantee as in-kind match. Cook Inlet Housing Authority (CIHA) will complete final design, permitting, construction and startup of the heat pump system and closed-loop vertical loop field along with any necessary controls or equipment needed to integrate the heat pumps into the existing heating system. A final design package including narrative, construction specifications, drawings, engineers cost estimates, and sequence of operations must be complete and accepted by the Authority prior to release of construction funds.

Project Status: Design is complete and construction of the system is underway.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$318,300.00	$311,753.20
Other State Funding	$0.00	$0.00
Total State	**$318,300.00**	**$311,753.20**
Required Local Match	$44,516.00	$48,964.43
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$362,816.00**	**$360,717.63**

North Pole Heat Recovery

Grantees	Golden Valley Electric Association (Utility-Cooperative)
Technology Type	HEAT RECOVERY
Region	Railbelt
AEDG Project Code	10101

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	105	North Pole Heat Recovery Construction	2195391	403029	Construction	3/25/09	11/30/10	Closed

Grant 2195391: North Pole Heat Recovery Construction

Project Scope: The project is to install a waste heat recovery system that would replace 15 existing electric unit heaters totaling 1/2 MW. Golden Valley Electric Association's (GVEA) North Pole Expansion Plant (NPEP) Waste Heat Recovery Project consists of installing 520' of underground supply and return piping, a glycol distribution piping system inside NPEP, installing 12 glycol unit heaters with Variable Frequency Drives (VFDs), and Heating, Ventilation and Air Conditioning (HVAC) controls. GVEA will manage and administer the project, perform the electrical / control installation, commissioning, and startup of the system. The mechanical portion of the work will be performed by a mechanical contractor. Electric power conservation/fuel savings will benefit all of GVEA's 33,000 members from Cantwell to Delta Junction.

Project Status: This project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$817,291.63	$817,291.63
Other State Funding	$0.00	$0.00
Total State	**$817,291.63**	**$817,291.63**
Required Local Match	$204,322.90	$204,322.90
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,021,614.53**	**$1,021,614.53**

Organic Rankine Cycle Field Testing

Grantees	University of Alaska Fairbanks (Non Profit Entity)
Technology Type	HEAT RECOVERY
Region	Railbelt
AEDG Project Code	10234

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	658	Organic Rankine Cycle Field Testing	7040046	403054	Feasibility	7/1/11	12/31/13	Closed

Grant 7040046: Organic Rankine Cycle Field Testing

Project Scope: The Alaska Center for Energy and Power will conduct the installation and field testing for a 50 kW pre-commercial ORC unit to understand the efficacy of generating power using recovered waste heat from a mid-sized rural power plant. The first phase of this project (funded through the Denali Commission and AEA) performed laboratory testing of the 50 kW unit. The field testing will include: performance data collection and analysis; evaluation of operation and maintenance requirements; economic analysis of potential power generation / cost savings; establish guidelines for future ORC applications throughout rural Alaska; and develop a methodology for selecting appropriate village sites. The analysis of the 50 kW unit will be compared to a 250 kW ORC unit presently being tested in Cordova. The 250 kW ORC unit testing is funded through a separate program.

Data will be collected and analyzed in the following areas: Overall efficiency of the system relative to fuel consumption and power output under varying load and environmental conditions, operational/maintenance requirements, number, type, and frequency of unit failures and required repairs, economic feasibility, measured reduction in fuel consumptions, measured effect on emissions and GHG production.

Prerequisites for AEA grant reimbursement are acceptance of the final report from the laboratory testing of the 50 kW pre-commercial ORC unit and the operational plan for the 50 kW unit to include the time after the field testing is conducted.

Project Status: The University of Alaska Fairbanks - Alaska Center for Energy and Power (ACEP) has submitted the final report for this project, and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$472,787.00	$472,787.00
Other State Funding	$0.00	$0.00
Total State	**$472,787.00**	**$472,787.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$472,787.00**	**$472,787.00**

AVTEC Hydro Training Facility

Grantees	Alaska Vocational Technical Center (Local Government)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10257

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	657	AVTEC Hydro Training Facility	7040058	407078	Final Design	7/1/11	12/31/13	Closed

Grant 7040058: AVTEC Hydro Training Facility

Project Scope: The project is for permitting and design of repairs, refurbishment and upgrade of the City of Seward's Marathon Hydroelectric plant in Seward. The plant will be used by AVTEC as an education and training tool in support of AVTEC's Hydro Power Plant Operator training program. The intent is to return the plant to productive use and maximize the training benefits it can provide. Additionally, the power generated by the Marathon Hydro Plant will be supplied to the Seward Electrical Utility Grid and provide monetary value for the produced power.

The project was constructed in the early 1980's. It consists of a small spring-fed diversion, approximately 3,500 ft. of 12-14" steel penstock, a small powerhouse housing a single jet pelton turbine and a 250 kW generator. The project has not been operational since sometime in the 1990's. The plant has been used to support the training in a limited way, but due to the poor condition and outdated equipment, the hydro plant does not meet the standards for training.

The land and existing power plant are owned by the City of Seward. The City supports AVTEC's use of this project and is currently developing a Memorandum of Agreement authorizing AVTEC to maintain, operate and utilize the hydro plant for 50 years. AVTEC will be responsible for the design of improvements to the plant and to maintain and operate the Marathon Hydro facility as a training facility and for energy production. AVTEC will use revenue gained from selling the power to the City to offset the operating costs.

In summer 2010, AVTEC commissioned a condition assessment of the plant. The assessment reviewed the feasibility of using the plant as a training facility and identified the major components to be replaced in order to bring the plant back online. It found the mechanical equipment to appear to be in generally good condition for having sat unused for such an extended period of time. However, a more detailed analysis is needed to describe the features and costs of the plant upgrades/replacements and to prepare plans and specifications for items needing replacement or refurbishment. A review of existing permits will also be conducted to verify they meet current regulatory requirements for this hydroelectric facility and any new or amended permits will be obtained as needed under this scope of work.

Some of the major elements of plant refurbishment include:

1) Repair intake screens and level sensor at the intake structure
2) Inspect penstock
3) Inspect and repair turbine and shutoff valve
4) Test generator and speed increasing gear
5) Replace controls and switchgear
6) Clean powerhouse and paint piping
7) Remove unused water supply equipment and piping.

Upgrades planned include:

1) Replace existing electrical turbine control system with hydraulic system
2) Replace existing induction generator with synchronous generator and new voltage controls
3) Connect plant communications to AVTEC
4) Add resistive load bank to plant.

Project Status: AVTEC has cancelled the grant.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$67,500.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$67,500.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$67,500.00**	**$0.00**

Battle Creek Diversion Project

Grantees	Alaska Energy Authority (Utility-Cooperative)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10316

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	675	Battle Creek Diversion Project	7040003	407075	Final Design	3/15/12	6/30/16	Active

Grant 7040003: Battle Creek Diversion Project

Project Scope: Chugach Electric Association, Inc. (Chugach), on behalf of the Bradley Project Management Committee (BPMC), has been awarded funds to perform feasibility studies and a conceptual design for the Battle Creek Diversion project. Additionally, a non-capacity FERC license amendment and permit applications will be prepared.

Battle Creek is located two miles to the west of Bradley Lake hydroelectric project on the Kenai Peninsula. The Bradley Lake project is located at the northeast end of Kachemak Bay, about 27 miles from the city of Homer. The communities that will benefit from the project include all the communities served by the six Railbelt electric utilities that receive a share of the Bradley Lake project. The BPMC is comprised of representatives of these six Railbelt electric utilities which include Chugach, Anchorage Municipal Light and Power, Homer Electric, Matanuska Electric, Golden Valley, and the Seward Electric System.

This is a project to divert water from the upper watershed of the middle branch of Battle Creek into Bradley Lake. Based on Battle Creek stream flow measurements from 1991 to 1993, diverting a portion of the stream flow to Bradley Lake has the potential to increase annual energy output by 27,000 to 45,000 MWh, depending on the amount of flow to be diverted. Environmental, geotechnical, preliminary engineering and analytical work is needed to evaluate fish habitat, the potential energy resource, and diversion dam and conveyance (i.e. tunnel, pipe, open channel) alternatives to divert the water.

The work that would be funded includes a variety of tasks related to the resource, permitting, environmental and fish studies, preliminary engineering and design and preparing a Federal Energy Regulatory Commission (FERC) license amendment. In addition to the $500,000 in grant funds, the BPMC members will provide a matching contribution of $500,000 to fund this work.

The Alaska Energy Authority (AEA), under Project Manager Bryan Carey, P.E., will be administrating this project.

Major permitting activities and permit requirements for this project include:

Submittal of a non-capacity license amendment to the Bradley Lake Project FERC license (AK-8221). Application for a Section 404 Permit from the U.S. Army Corps of Engineers. Completion of the Alaska Department of Natural Resources (ADNR) Division of Coastal & Ocean Management Consistency Review. Completion of the National Marine Fisheries Services Essential Fish Habitat Consultation process. Application for a water rights permit from ADNR. Application for a material sale contract from ADNR. Application for a ADNR land use permit and/or lease agreement for access to the project site and use of State lands for the project. Application for a Title 16 fish habitat permit from Alaska Department of Fish and Game. A contractor provided Stormwater Pollution Prevention Plan (SWPPP).

Project Status: The design has been revised and the process of amending the FERC license for the project has started. Agency consultations (Alaska Department of Fish & Game, US Fish & Wildlife Service, National Marine Fisheries) and the public have occurred. The license amendment application was submitted in 2015. Construction could occur in 2017 if the amendment is completed and permits are received in a timely manner.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$500,000.00	$500,000.00
Other State Funding	$0.00	$0.00
Total State	**$500,000.00**	**$500,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$500,000.00**	**$500,000.00**

California Creek Hydroelectric

Grantees	Alaska Green Energy (Independent Power Producer)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10079

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	78	California Creek Hydroelectric Feasibility	2195422	407052	Feasibility	8/20/08	12/31/11	Closed

Grant 2195422: California Creek Hydroelectric Feasibility

Project Scope: The project is to prepare a preliminary feasibility study level report addressing the feasibility of a micro-hydro system on California Creek in the Girdwood Valley. The grantee chose to work with the University of Alaska Anchorage School of Engineering for assistance. Surveying and mapping, hydrology, hydraulics, and geotechnical investigations, conceptual design, and preliminary environmental review will be completed, culminating in a final report.

Project Status: The project is closed. Deliverable for the grant is the report titled "California Creek Hydroelectric Feasibility Preliminary Engineering Analysis and Environmental Review", dated December 2011, by Alaska Green Energy.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$27,300.00	$27,300.00
Other State Funding	$0.00	$0.00
Total State	**$27,300.00**	**$27,300.00**
Required Local Match	$2,700.00	$2,700.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$30,000.00**	**$30,000.00**

Crescent Lk/Crk Low-Impact Hydro

Grantees	Homer Electric Association, Inc. (Utility-Cooperative)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10002

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0	-115	Crescent Lk/Crk Low-Impact Hydro Assess Pre-Construction	2195334	407023	Feasibility	6/30/08	12/31/09	Closed

Grant 2195334: Crescent Lk/Crk Low-Impact Hydro Assess Pre-Construction

Project Scope: The grant funds will be used to evaluate the potential for a small low-impact hydro facility utilizing the water resources provided by Crescent Lake and Creek. Work will be completed per the information submitted by Homer Electric Association dated February 11, 2008 (seven total pages) and incorporated into the grant agreement.

Project Status: A reconnaissance report was prepared with the grant. The report concluded the project was not feasible due to environmental concerns. The project is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$23,273.04	$23,273.04
Other State Funding	$30,000.00	$30,000.00
Total State	**$53,273.04**	**$53,273.04**
Required Local Match	$13,318.27	$13,318.27
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$66,591.31**	**$66,591.31**

Eska Creek Hydroelectric Project

Grantees	Bering Pacific Engineering (Independent Power Producer)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10265

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	676	Eska Creek Hydroelectric Project	7040063	407082	Feasibility	7/1/11	6/30/13	Closed

Grant 7040063: Eska Creek Hydroelectric Project

Project Scope: The project will complete a reconnaissance study of a potential run-of-river hydroelectric power plant on Eska Creek near Sutton. Funding for this work is from a combination of $37,000 in grant funding and grantee match with $2,200 cash and $5,200 in-kind contributions. Tasks include investigation of land ownership, mapping and surveying, resource data collection through stream flow monitoring, resource assessment, conceptual design, cost estimating and economic analysis. The data collected and analysis performed will be documented in a final report.

Eska Creek has a basin area of approximately 4.9 square miles. One hydropower scheme with over 2 1/2 miles of penstock would have potential capacity up to 1.5 MW. The proposed intake site is also located in (or adjacent to) several existing coal mining leases. The study will investigate potential project schemes and the possibility of acquiring easements for the project.

Environmental issues are undefined for this project. The Alaska Department of Natural Resources has noted potential conflicts with other users of this land and the proximity of the project to the Castle Mountain Fault.

Project Status: The project was found to not be economically viable. The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$14,407.70	$14,407.70
Other State Funding	$0.00	$0.00
Total State	**$14,407.70**	**$14,407.70**
Required Local Match	$2,881.54	$2,881.54
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$17,289.24**	**$17,289.24**

Falls Creek Low-Impact Hydro

Grantees	Homer Electric Association, Inc. (Utility-Cooperative)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10132

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0	-113	Falls Creek Low-Impact Hydro Assess Pre-Construction	2195331	407024	Feasibility	6/30/08	12/31/09	Closed

Grant 2195331: Falls Creek Low-Impact Hydro Assess Pre-Construction

Project Scope: The project will evaluate the potential for a small, low-impact hydro facility utilizing the water resources provided by Falls Creek. The work was completed per the information submitted by the Homer Electric Association dated February 11, 2008 (seven total pages) and incorporated into the grant agreement.

Project Status: A reconnaissance report was prepared with the grant. The report concluded the project was not feasible due to environmental concerns. The project is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$50,000.00	$50,000.00
Other State Funding	$50,000.00	$50,000.00
Total State	**$100,000.00**	**$100,000.00**
Required Local Match	$25,000.00	$25,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$125,000.00**	**$125,000.00**

Fourth of July Creek Hydroelectric Project

Grantees	Independence Power, LLC (Independent Power Producer)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10086

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	86	Fourth of July Creek Hydroelectric Reconnaissance	2195420	407044	Feasibility	8/8/08	6/20/10	Closed
4	693	Fourth of July Creek Hydroelectric Project 2	7040034	407044	Feasibility	7/1/11	12/31/13	Closed

Grant 2195420: Fourth of July Creek Hydroelectric Reconnaissance

Project Scope: Project is to complete a reconnaissance level assessment of a hydro resource on the 4th of July Creek. Independence Power, LLC will review existing available information pertinent to technical and permitting aspects of the project. A reconnaissance-level economic analysis of the project will be developed to determine if further work on the project is warranted.

The following will be accomplished by this grant: - Reconnaissance Study & Report ($20,000) - Hydrology Study ($6,500) - Initiate Contact with City of Seward & Chugach Electric (Report) ($3,000) - Initiate Permitting Process - Report ($6,500) - Stakeholder/Public Meeting - Minutes ($4,000)

Project Status: Reconnaissance assessment is complete. Deliverable under this phase is the report titled "Fourth of July Creek Hydroelectric Project Reconnaissance Study and Initial Feasibility Assessment Final Report", dated November 2009, and prepared by Independence Power, LLC.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$20,000.00	$20,000.00
Other State Funding	$0.00	$0.00
Total State	**$20,000.00**	**$20,000.00**
Required Local Match	$20,000.00	$20,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$40,000.00**	**$40,000.00**

Grant 7040034: Fourth of July Creek Hydroelectric Project 2

Project Scope: Project is to complete conceptual design and feasibility of a run-of-river hydroelectric project on Fourth of July Creek near Seward. Tasks include hydrology study, geotechnical investigation, topographic survey, land & regulatory issues, permitting & environmental analysis, including fish study if necessary, conceptual design and cost estimate, economic analysis, and conceptual business & operating plans, culminating in a feasibility report.

Project Status: The grant was cancelled before grant award due to lack of progress and unresponsiveness by the grantee.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$136,500.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$136,500.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$136,500.00**	**$0.00**

Grant Lake Hydroelectric Facility

Grantees	Kenai Hydro, LLC (Independent Power Producer), Homer Electric Association, Inc. (Utility-Cooperative)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10037

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0	-114	Grant Lk/Crk Low-Impact Hydro Assess Pre-Construction	2195333	407025	Feasibility	6/1/08	12/31/09	Closed
1	34	Grant Lake/Falls Creek Hydro Feasibility Study	2195428	407042	Feasibility	8/20/08	12/31/12	Closed
4	635	Grant Lake Hydroelectric Facility	7040035	407042	Feasibility	7/1/11	6/30/14	Closed

Grant 2195333: Grant Lk/Crk Low-Impact Hydro Assess Pre-Construction

Project Scope: Grant funds will be used to evaluate the potential for a small low-impact hydro facility utilizing the water resources provided by Grant Lake and Creek. Work will be completed per the information submitted by the Homer Electric Association dated February 11, 2008 (seven total pages) and incorporated into the grant agreement.

Project Status: A reconnaissance report was prepared with the grant. The report concluded the project was not feasible due to environmental concerns. The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$50,000.00	$50,000.00
Other State Funding	$50,000.00	$50,000.00
Total State	**$100,000.00**	**$100,000.00**
Required Local Match	$25,000.00	$25,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$125,000.00**	**$125,000.00**

Grant 2195428: Grant Lake/Falls Creek Hydro Feasibility Study

Project Scope: Kenai Hydro, LLC is an entity formed to investigate the feasibility of and develop hydro power projects on the Kenai Peninsula.

This project is located near Moose Pass, Alaska and grant funds will be used to complete Phase II of the feasibility study begun with grant funds from the Alternative Energy Solicitation issued by the Alaska Energy Authority in 2007. Kenai Hydro, LLC proposes to divert water flows from Falls Creek into Grant Lake by operating a 4.5 MW hydroelectric facility on Grant Creek. Power from the project will be available to Homer Electric Association and other areas served by the existing Railbelt transmission grid.

A Preliminary Permit from the Federal Energy Regulatory Commission was secured on October 7, 2008. Phase I studies (stakeholder consultations and preliminary identification of necessary studies and permitting) were partially funded by the grant funds from the Alternative Energy Solicitation noted. This project (Phase II) will build on the work previously completed.

Project Status: KHL carries out Phase II feasibility level field studies and scoping in support of FERC licensing for this project. The proposed route for the transmission line and road access to the hydro facilities are impacted by the recently discovered Iditarod National Historic Trail which has senior rights to this land. Mitigation of impacts from hydro project are being studied. Project effects on changes in lake levels and river streamflows are also being investigated to minimize impacts to fish habitat. Phase II studies will be supplemented with additional Round IV grant funds.

The earliest approval of FERC license is anticipated in March 2014.

The grantee expended all grant funds and the grant has been closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$816,000.00	$816,000.00
Other State Funding	$0.00	$0.00
Total State	**$816,000.00**	**$816,000.00**
Required Local Match	$204,000.00	$204,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,020,000.00**	**$1,020,000.00**

Grant 7040035: Grant Lake Hydroelectric Facility

Project Scope: Kenai Hydro LLC, a wholly-owned subsidiary of Homer Electric Association, proposes a continuation of field studies/environmental assessment and preliminary engineering/project scoping for developing a hydroelectric facility at Grant Lake. Under prior grants, Kenai Hydro received $100,000 for reconnaissance assessment from the Alternative Energy Request for Proposals and $816,000 in Renewable Energy Fund Round I (#34). Kenai Hydro will be providing a 25% cash match to the total grant.

The Grant Lake Hydroelectric Facility would consist of 4.5 MW of installed capacity with an average annual output of 20,600 MW of energy, installed on the Grant Lake watershed near Moose Pass. The proposed project is comprised of a diversion dam (under consideration) at the outlet to Grant Lake, an intake structure in Grant Lake, a tunnel, a surge tank, a penstock, a powerhouse, a tailrace detention pond, a switchyard with disconnect switch & step-up transformer, and an overhead or underground transmission line. The intake would be in Grant Lake near its outlet. Water would be conveyed from the intake through a 3200' penstock to a powerhouse containing two Francis-type turbines. The powerhouse would be located near the bank of Grant Creek and would discharge through a second penstock into Grant Creek. A transmission line would connect the facility to the Railbelt grid near Moose Pass. Kenai Hydro LLC (KHL), whose sole member is the Homer Electric Association (HEA), was created in 2008 to evaluate and possibly develop this site as a low impact hydroelectric facility.

KHL filed a preliminary permit application with FERC on April 28, 2008 and was issued a permit on October 7, 2008. The purpose of the preliminary permit is to determine the feasibility of the proposed project on Grant Lake and Creek in the Kenai Peninsula Borough, Alaska, and would occupy federal lands managed by the Chugach National Forest. A Pre-Application Document (PAD) was filed with FERC on August 6, 2009. FERC has approved the Traditional License Program (TLP) as the appropriate course with which to proceed and secure a FERC license.

The original grant application originally requested $2,500,000 in grant funds to complete the Phase II studies that were commenced in 2009. However, the grant award was capped at $1,184,000 due to the previous Round I Renewable Energy Fund grant award for this project phase. KHL has offered a cash match of $296,000. Though not tracked in this grant, KHL is also providing an in-kind match for the cost of management and administrative staffing which they have estimated to be $549,120. Two tasks are anticipated to be accomplished in this grant: 2011 - 2012 field studies and environmental assessment to be completed in March 2013 and 2011 - 2012 preliminary engineering and project scoping to be completed in October 2012.

Project Status: Aquatic and Water Resources field studies were conducted.

The grantee expended all grant funds and the grant has been closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,184,000.00	$1,184,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,184,000.00**	**$1,184,000.00**
Required Local Match	$296,000.00	$296,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,480,000.00**	**$1,480,000.00**

Hunter Creek Hydroelectric Project

Grantees	Eklutna, Inc. (Independent Power Producer)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10267

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	690	Hunter Creek Hydroelectric Project	7040060	407080	Feasibility	7/1/11	6/30/13	Closed

Grant 7040060: Hunter Creek Hydroelectric Project

Project Scope: Eklutna, Inc., an Alaska Native Corporation and an independent power producer, will perform a reconnaissance study of a potential run-of-river hydroelectric power plant on Hunter Creek near Palmer. With widely varying seasonal flows, Hunter Creek has an estimated installed capacity of up to 6.5 MW. The reconnaissance study will investigate the resource to determine if the project is viable and also to perform preliminary investigations to determine project location, size and resource availability. Funding for this work is from a combination of $84,000 in grant funding and grantee match with $12,000 cash and $4,000 in-kind contributions. Tasks include: investigation of land ownership; permitting and environmental analysis; resource identification and analysis through stream gauging and site inspections; preliminary design; cost estimating and reconnaissance level economic analysis. Eklutna, Inc. will evaluate business structures and concepts during the reconnaissance study. As an Independent Power Producer, Eklutna, Inc. will be subject to the provisions of paragraph 7 of Appendix B1. In preparing their Business plan, various aspects of this section will be explored, including affirmation from prospective utilities that they are interested in this opportunity to purchase power, cost-based rates and need for CPCN. The data collected and analysis performed will be documented with recommendations in a final report. Eklutna, Inc. has contacted Polarconsult, Inc. regarding the project and Polarconsult has agreed to contract for the reconnaissance work.

Hunter Creek has an East Basin and a West Basin whose total area is approximately 59 square miles. A preliminary configuration would involve a 2 and a half mile long cross basin pipeline and a larger main pipeline which would carry flow from both basins to a powerhouse. The estimated capacity of this scheme would be 6.5 MW. Eleven miles of transmission line would be needed to interconnect to the MEA electrical grid. The status of the land the project would be located on is to be investigated in the grant scope of work. If it is under federal Bureau of Land Management ownership, jurisdiction for future hydropower project licensing may be with the Federal Energy Regulatory Commission. Environmental issues are undefined for this project. The Alaska Department of Natural Resources has noted potential conflicts with other users of this land and the proximity of the project to the Castle Mountain Fault.

Project Status: The project is complete. The grant completed the report titled "Hunter Creek Hydroelectric Reconnaissance Study", prepared by Polarconsult Alaska, Inc., and dated April 2013.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$84,000.00	$84,000.00
Other State Funding	$0.00	$0.00
Total State	**$84,000.00**	**$84,000.00**
Required Local Match	$16,000.00	$16,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$100,000.00**	**$100,000.00**

Jack River Hydroelectric

Grantees	Native Village of Cantwell (Local Government)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10020

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	606	Jack River Hydroelectric Feasibility Study	7040064	407084	Feasibility	7/1/11	6/30/13	Closed

Grant 7040064: Jack River Hydroelectric Feasibility Study

Project Scope: The Native Village of Cantwell will perform a reconnaissance study of a potential run-of-river hydroelectric power project on Jack River near Cantwell. Tasks include: resource data collection through stream flow monitoring; resource assessment; land use and environmental analysis, including any fish issues and if there are any physical barriers to fish migration; conceptual design and cost estimating; cost of energy and market analysis; and a simple economic analysis. The data collected and analysis performed will be documented in a final reconnaissance report. Preliminary project configuration includes a dam and short tunnel to a powerhouse with an estimated installed capacity in excess of 1 MW. The study will further investigate potential project schemes.

Project Status: The grant is complete and closed. Deliverable under this grant, is the report "Jack River Hydroelectric Reconnaissance Study", dated March 2013, prepared by Polarconsult Alaska, Inc.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$30,000.00	$30,000.00
Other State Funding	$0.00	$0.00
Total State	**$30,000.00**	**$30,000.00**
Required Local Match	$1,500.00	$1,500.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$31,500.00**	**$31,500.00**

Ptarmigan Lk/Crk Low-Impact Hydro

Grantees	Homer Electric Association, Inc. (Utility-Cooperative)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10003

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0	-116	Ptarmigan Lk/Crk Low-Impact Hydro Assess Pre-Construction	2195335	407026	Feasibility	6/1/08	12/31/09	Closed

Grant 2195335: Ptarmigan Lk/Crk Low-Impact Hydro Assess Pre-Construction

Project Scope: The grant funds will be used to evaluate the potential for a small low-impact hydro facility utilizing the water resources provided by Ptarmigan Lake and Creek. Work will be completed per the information submitted by Homer Electric Association, dated February 11, 2008 (seven total pages) and incorporated into the grant agreement.

Project Status: A reconnaissance report was prepared with the grant. The report concluded the project was not feasible due to environmental concerns. The project is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$4,684.35	$4,684.35
Other State Funding	$50,000.00	$50,000.00
Total State	**$54,684.35**	**$54,684.35**
Required Local Match	$13,671.08	$13,671.08
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$68,355.43**	**$68,355.43**

South Fork Hydroelectric Construction

Grantees	South Fork Hydro, LLC (Independent Power Producer)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10059

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	57	South Fork Hydroelectric Construction	2195434	407041	Construction	7/1/09	7/31/09	Closed

Grant 2195434: South Fork Hydroelectric Construction

Project Scope: The grantee, an independent power producer, decided it was in their business's best interest to not accept the grant award and instead seek alternative financing options; therefore, the grant was cancelled before grant award.

Project Status: The grantee, an independent power producer, decided it was in their business's best interest to not accept the grant award and instead seek alternative financing options; therefore, the grant was cancelled before grant award.

Stetson Creek Diversion/Cooper Lake Dam Facilities Project

Grantees	Chugach Electric Association, Inc. (Utility-Cooperative)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10315

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	674	Stetson Creek Diversion/Cooper Lake Dam Facilities Project	7040005	407077	Final Design	7/1/11	12/31/12	Active
7	1082	Stetson Creek Diversion Cooper Lake Dam Facilities Project	7071082	407077	Construction	7/1/14	12/31/15	Active

Grant 7040005: Stetson Creek Diversion/Cooper Lake Dam Facilities Project

Project Scope: The project is for feasibility, permitting and final design of a project to divert water from Stetson Creek to Cooper Lake to release environmental flows into Cooper Creek. This change was part of a settlement agreement reached during the Federal Energy Regulatory Commission relicensing of the Cooper Lake Hydroelectric Project in 2007.

The main benefit of the proposed project would be the continued operation of the 19.4 MW Cooper Lake Hydroelectric Project. In addition, the diversion adds water to Cooper Lake, resulting in a new increase in hydroelectric generation. A new control structure will be added near the existing Cooper Lake embankment dam to regulate environmental flows in the upper reaches of the Cooper Creek below the dam. These flows will enhance fish habitat in this reach by using natural-warmed lake water to insure optimal water temperatures.

Chugach has agreed to match Renewable Energy funding awarded under this grant using cash and in-kind contributions on a dollar-for-dollar basis.

The diversion project is located within the Chugach National Forest.

Permits expected to be required include U.S. Army Corps of Engineers 404 Permit, Alaska Department of Environmental Conservation 401 Water Quality Certification, U.S. Environmental Protection Agency Storm Water Pollution Discharge Elimination System Permit, Alaska Department of Fish and Game Fish Habitat Permit, Alaska Department of Natural Resources Water Rights, and Alaska Department of Natural Resources Coastal Project Questionnaire.

Chugach has worked with all of the above agencies and does not anticipate any overwhelming barrier to securing the needed permits.

Project Status: CEA has completed final design documents and has started construction. As of the end of 2014 the Stetson diversion structure is nearly complete. Remaining work on the conveyance and siphon will be completed in 2015.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$576,080.00	$576,080.00
Other State Funding	$0.00	$0.00
Total State	**$576,080.00**	**$576,080.00**
Required Local Match	$576,080.00	$576,080.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,152,160.00**	**$1,152,160.00**

Grant 7071082: Stetson Creek Diversion Cooper Lake Dam Facilities Project

Project Scope: The grant is for the construction of the Stetson Creek Diversion.

Project Status: CEA has completed final design documents and has started construction. As of the end of 2014 the Stetson diversion structure is nearly complete. Remaining work on the conveyance and siphon will be completed in 2015.

Construction of the Stetson project is nearly complete. The report filed in Aug 2015 indicated that both the diversion and siphon system were operational and commissioned and that some minor work remained including retaining walls, final site grading, and demobilization. Final record drawings and FERC filings are also expected in the near future to complete the project. The Aug 2015 indicated approximately $1.375 million remaining in grant funds.

Only minor construction work remains consisting of communication links and closeout documents. As of January 2016 all the closeout documents are expected to be provided by the end of the month. A significant amount of construction retainage remains to be paid pending release of claims by the contractor/surety.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$3,453,900.00	$2,197,926.76
Other State Funding	$0.00	$0.00
Total State	**$3,453,900.00**	**$2,197,926.76**
Required Local Match	$3,453,900.00	$2,581,090.13
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$6,907,800.00**	**$4,779,016.89**

Whittier Creek Hydroelectric

Grantees	City of Whittier (Local Government)
Technology Type	HYDRO
Region	Railbelt
AEDG Project Code	10051

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	48	Whittier Creek Hydroelectric Reconnaissance	2195396	407043	Feasibility	8/20/08	5/1/12	Closed

Grant 2195396: Whittier Creek Hydroelectric Reconnaissance

Project Scope: The proposed work includes three technical tasks: 1) Research, review and evaluate past hydroelectric studies done in Alaska, especially the report that was generated for Whittier Creek at Whittier, Alaska during the late 1970's; 2) Install stream gauge and measure stream flow for two years; and 3) Analyze the data recorded by the United States Geological Survey (USGS) stream gauge for Whittier Creek. The results of this work will determine if the City of Whittier could benefit from generating their own electric power.

Task 1 will provide an interim report on Whittier Creek with July 2010 costs.

Research, review and evaluate the existing data, including the listed past publications, topo maps, and make a site visit to collect additional data on possible locations, including the USGS stream gauging data on Twenty-Mile River, a glacial feed river within 10 miles of Whittier. Results of this task will estimate the power available (kW) and the average annual energy (kWh) from Whittier Creek in addition to the capital cost and then estimate the cost of energy generated (in cents/kWh) to determine if the project is economical. Provide an interim report with costs. If the Interim Report results show the project is not economic in its cost of power compared to that provided by Chugach Electric, the grant funding for Whittier Creek will end. Re-programming of remaining grant funds to study other hydro sites will be subject to approval by the Alaska Legislature.

Following is a list of previous studies. USACE, Alaska District 1982. "Regional Inventory and Reconnaissance Study for Small Hydropower Projects - Southcentral, Alaska." USACE, Alaska District, 1979. "Regional Inventory and Reconnaissance Study for Small Hydropower Projects in Southeast Alaska." USACE, Alaska District, 1981. "Small-Scale Hydropower Reconnaissance Study Southwest Alaska." CH2M Hill Engineering of Alaska, 1979. "Reconnaissance Study of Hydropower Sites Near Cordova, Alaska."

Task 2 will include stream gauging Whittier Creek or possible other location and data collection.

Design of a hydroelectric facility on Whittier Creek or other location (Shakespear or Learnard Creek) would require detailed information on the flow regime at Whittier Creek. Therefore, work is proposed to develop this information through gauging the stream for a period of no less than one calendar year. The USGS will work with the Corps of Engineers to gauge the creek. The USGS will install a stream flow monitoring station including satellite telemetry or other means of automated data transmission (the new gauge shall be installed on Whittier Creek), run levels as needed to maintain gauge datum, collect continuous (15 minute) stream stage data, make six to eight discharge measurements annually to define and ensure the accuracy of the stage discharge rating and to help define winter stream flow under ice conditions, calculate daily mean discharge and additional statistical information, archive the stage and discharge data in the USGS data base. Recorded data and preliminary daily discharge will be provided to the Corps of Engineers upon request. Data will be finalized and published in the annual report, "Water Data Report-United States."

The cost for two years is approximately $60,000. If the stream gauge is installed on Whittier Creek before task one is successfully completed, then part of the first year cost may be shared with another project on Whittier Creek, depending upon the timing of the installation of the gauge. The Corps of Engineers would coordinate with the USGS and perform stream transport, erosion potential, and icing data during the gauging period.

Task 3 is data analysis and preliminary design concept.

Once the stream gauge data has been obtained from the USGS and rating curves have been developed, USACE will analyze the data to determine if the production of power is possible at Whittier Creek. Mean annual flow, mean monthly flow, 7-day, 2 year reoccurrence, low flow (both summer and winter), five points on the daily flow duration curve, peak flow, and the 100-year recurring interval will be calculated. These parameters will form the basis for estimating potential capacity and energy at the site. Twenty-Mile River data can be used to help correlate with the Whittier Creek flows to estimate historical Whittier Creek flows. The average annual energy will be calculated based on the net head and flow capacity at the site. From these calculations, a power plant capacity will be selected based on energy capabilities at Whittier Creek. Load characteristics would also need to be analyzed. From

there, several different preliminary alternatives will be developed. USACE, Alaska District would coordinate with the Corps center of expertise for hydroelectric generation, (Hydroelectric Design Center) in Portland, OR.

This grant will formulate preliminary alternatives, complete preliminary economic analysis by Jan 2012, determine power requirement forecast / load characteristics, develop power benefit stream and cost of energy (CORPS HH/ECON), identify physical works (plant description, site services, access, transmission lines, etc.), determine economic feasibility based upon avoided fuel costs (CORPS HH/ECON), identify critical issues, assess legal / institutional constraints (WIK), and assess licensing and environmental constraints (WIK).

A recon report will be provided to the Authority by May 2012 after it is reviewed by CORPS, City of Whittier, and the Authority. Preliminary mechanical and electrical work will be completed by Jan 2012.

Project Status: USACE completed an interim reconnaissance report of hydropower resources in the vicinity of Whittier in September 2011. The report concluded the available sites could not be developed economically when compared to the cost of railbelt power. The project is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$39,471.00	$39,471.00
Other State Funding	$0.00	$0.00
Total State	**$39,471.00**	**$39,471.00**
Required Local Match	$34,285.00	$34,285.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$73,756.00**	**$73,756.00**

Anchorage Landfill Gas Electricity

Grantees	Municipality of Anchorage (Local Government)
Technology Type	LANDFILL GAS
Region	Railbelt
AEDG Project Code	10070

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	68	Anchorage Landfill Gas Electricity Construction	2195430	402032	Construction	8/20/08	6/30/13	Closed

Grant 2195430: Anchorage Landfill Gas Electricity Construction

Project Scope: The Municipality of Anchorage (MOA) Solid Waste Services Department (SWS) will develop an electric power generating plant to be located at the Anchorage Regional Landfill (ARL). The plant will use landfill gas (LFG), a byproduct of anaerobic waste decomposition, as its primary fuel. Landfill gas will be collected and sold to Doyon, Limited who will generate electricity for Joint Base Elmendorf-Richardson.

Project Status: The Anchorage Landfill Gas Electricity Construction Project has been successfully completed and closed out. The Municipality of Anchorage (MOA) Solid Waste Services Department (SWS) has submitted all final project documents. AEA has reviewed and accepted the final feasibility study and will provide assistance during the mandatory end of project performance reporting.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$2,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$2,000,000.00**
Required Local Match	$1,423,866.00	$1,423,866.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,423,866.00**	**$3,423,866.00**

Cook Inlet TidGen Project

Grantees	Ocean Renewable Power Company (Independent Power Producer)
Technology Type	OCEAN/RIVER
Region	Railbelt
AEDG Project Code	10286

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	660	Cook Inlet TidGen Project	7040059	408005	Construction	7/1/11	12/31/15	Active

Grant 7040059: Cook Inlet TidGen Project

Project Scope: ORPC Alaska 2, LLC, a wholly owned subsidiary of Ocean Renewable Power Company, LLC, will install an array of four 150kW TidGen Power Systems with a total rated capacity of 600 kW near (within 3km) of East Foreland, Alaska. The devices are expected to be installed in water depths of 60-190 ft. at MLLW. Models have predicted peak velocities nearing 5 m/s (˜9 knots).

ORPC has received a FERC Preliminary Permit for the East Foreland Project in March 2011 (P-13821-000).

As ORPC is still in the process of developing its tidal technology, all required technology will be developed to a standard by which it will be expected to be operational throughout its economic life. This will be shown by another deployment of the TidGen technology in Maine. In September 2012, ORPC deployed a 150 kW TidGen Power System in Cobscook Bay, Maine, under a Department of Energy award.

The deployment of the four devices at the East Foreland project site was originally scheduled to occur in two stages over the summers of 2014 and 2015; however, initial deployment is now expected to be pushed into 2015. Prior to the installation of the first device, ORPC will complete all work needed for the regulatory compliance and technology development. This will include submission of an application for a FERC Pilot License- a special FERC license developed specifically for testing hydrokinetic devices on a relatively small scale (¡5 MW).

Project Status: The grant agreement is in place however the project has stalled while additional funding partners are identified.

May 2015 OPRC continues to seek additional funding. As of Sep 2015 no additional action is apparent and the future prospects of additional funding are unknown.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$0.00**
Required Local Match	$6,392,900.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$8,392,900.00**	**$0.00**

Nenana Hydrokinetic

Grantees	Golden Valley Electric Association (Utility-Cooperative), University of Alaska Fairbanks (Non Profit Entity)
Technology Type	OCEAN/RIVER
Region	Railbelt
AEDG Project Code	10096

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	97	Nenana Hydrokinetic Construction	2195437	407053	Feasibility	8/20/08	12/31/12	Closed
0	-6	Nenana River ROR Hydro Reconnaissance Study	7	407021	Reconnaissance	1/28/09	2/16/10	Closed

Grant 2195437: Nenana Hydrokinetic Construction

Project Scope: The University of Alaska - Fairbanks, Institute of Northern Engineering will conduct a detailed characterization of the hydrokinetic energy potential of the Tanana River adjacent to the community of Nenana over a 15-month period to include a summer-winter-summer cycle. While the year-round flow is the most important factor that determines the hydrokinetic energy potential of a river, the feasibility of deploying a hydrokinetic turbine system and its efficiency are also affected by the interaction of the hydrokinetic turbine and the river environment. These can involve interactions between turbines, and the anchors and cables holding the turbine in place, with fish populations, floating or submerged debris, ice, and sediment. The river characterization to be undertaken in this project is designed to investigate the interactions between the river environment and hydrokinetic power systems. This process will require the following studies.

Mapping the river flow throughout the summer and winter months to determine the seasonal impact of ice. Existing data from a local US Geological Survey gauging station will be used to estimate the historical river flows and its variation. Measurements of flow velocities just prior to river freeze-up (October) and river break-up (April) were completed in 2008 and 2009.

Monitoring the sediment carried in the river's main flow and along the bed to determine the baseline conditions and the variability of sediment accumulation and erosion that can affect turbine operations. This includes the influence of anchors and bed-mounted turbines. If a functioning turbine is available to the project, this monitoring will be extended to examine the effect of turbine operations on sediment deposition / erosion and sediment effects on turbine operation. The deployed anchoring system will be monitored to determine changes in sediment deposition and/or erosion that may occur as a result of flow disturbance by anchors.

Monitoring fish populations in summer and winter to determine their number, river usage patterns, and species and age composition. Fish populations, and their behavior, differ from summer to winter and understanding those differences may be important to bed-mounted turbines that plan to operate year-round under an ice cover. A study of fish interaction with turbines requires high-resolution sonar equipment that is beyond the budget of this project, but is intended to be incorporated into future studies. Determining fish behavior around turbines will be addressed by these studies. In addition, the impact on larval and juvenile fish drifting downstream will be studied.

Monitoring summer debris flow and possible mitigation strategies will also be completed. This will include the design and testing of an instrumented variable angle trash rack that can measure accumulated trash load. River flow measurements above and below the trash rack will be used to determine the influence of debris on the local flow that can affect turbine efficiency.

The results of this project will provide critical information to utilities, villages, and commercial hydrokinetic manufacturers who are considering using or commercializing hydrokinetic turbines. Information about what permits are needed and who are critical stakeholders, what are the challenges of deploying and operating hydrokinetic turbines in the river environment and how fish, sediment, ice, and river debris, and their mitigation may affect turbine operations and efficiency.

Project Status: The final report has been published and the grant closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$450,000.00	$450,000.00
Other State Funding	$0.00	$0.00
Total State	**$450,000.00**	**$450,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$450,000.00**	**$450,000.00**

Grant 7: Nenana River ROR Hydro Reconnaissance Study

Project Scope: The project is to prepare a reconnaissance study of the Nenana River for a run-of-river hydroelectric project. A report will be prepared to document findings of the study and shall address: power generation and capacity factor, narrative to describe plant, site services, access, transmission infrastructure, costs, critical issues, and conclusions as to the technical and economic feasibility of the project and recommendations for further study.

Project Status: The project is complete. The project completed the study titled "Nenana River Hydropower Scheme Healy, Alaska Reconnaissance Study", by Knight Piesold and Co., and dated January 2009.

McKinley Village Solar Thermal

Grantees	Golden Valley Electric Association (Utility-Cooperative)
Technology Type	SOLAR THERMAL
Region	Railbelt
AEDG Project Code	10103

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	108	McKinley Village Solar Thermal Construction	2195394	411003	Construction	8/20/08	9/30/09	Closed

Grant 2195394: McKinley Village Solar Thermal Construction

Project Scope: The SWHS consists of 36 Heliodyne flat panel solar thermal collectors mounted on a 50' X 30' array. Heat from the flat-plate collectors flow into an energy and distribution center that contains a large 3,000-gallon insulated heat storage/exchange tank containing a liquid medium. Heat is transferred through two independent separated copper coil loops in the heat exchange tank; one loop for the solar heated liquid and one loop for the domestic water. The heated domestic water is then distributed through a 2,000-foot insulated pipe system circulating in a loop between the laundry building at the south side of the campus, 13 guest cabins, the Riverside complex on the north side, and to the Sheldon Visitors Center to the west by circulating pumps.

Project Status: The system came online in August of 2009. Total solar energy to array was 39,000 kWh (132000 kBTUs). Total energy to loads was 3,750 kWh (12,800 kBTUs). Estimated maximum yield (@ 35% efficiency) is about 13,800 kWh (49,900 kBTUs). System utilization (i.e., yield/available energy) was 27% of available capacity. Monitoring limitations that were seen in 2010 were rectified in 2011 with additional fine tuning for 2012. System distribution problems experienced in 2010 were also rectified in 2011 but additional retrofit efforts were thwarted by a lack of labor resources. Complete retrofitting of end use stations is expected to be completed before the start up in 2012. With retrofits complete, the efficiency yield should also increase. 7/13: during PM site visit solar thermal system was operating well. Operator thrilled with savings and marketing potential of solar energy.

11/14: GVEA reported the system performed well in 2014. No problems.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$190,000.00	$190,000.00
Other State Funding	$0.00	$0.00
Total State	**$190,000.00**	**$190,000.00**
Required Local Match	$3,600.00	$20,878.92
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$193,600.00**	**$210,878.92**

CEA Transmission Line to Renewable Energy Resources

Grantees	Chugach Electric Association, Inc. (Utility-Cooperative)
Technology Type	TRANSMISSION
Region	Railbelt
AEDG Project Code	10279

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	615	CEA Transmission Line to Renewable Energy Resources	7040033	409031	Feasibility	7/1/11	12/31/12	Closed

Grant 7040033: CEA Transmission Line to Renewable Energy Resources

Project Scope: Chugach Electric Association, Inc. (CEA) has applied for a grant through the Alaska Renewable Energy Fund to evaluate the construction of a transmission line between the proposed Mount Spurr geothermal site (to be developed by Ormat Nevada, Inc.) and its existing Beluga generation plant. Phase I of the grant application is funded and will accomplish an initial feasibility study consisting of an analysis of permitting requirements, route selection, and a preliminary design. The narrative below outlines the anticipated time, cost estimates and deliverables for these tasks. CEA will provide in-house management as "other contributions." Consequently, these costs will be tracked and reported to the Alaska Energy Authority.

Permitting Requirements - CEA anticipates permitting application and approval to be a major driver in ultimate route selection. A clear and comprehensive study of existing land owners within the project region and their individual requirements for third-party land use will ultimately help clarify routing options. CEA expects some overlap between route selection and permitting since the two are heavily dependent on each other. CEA anticipates bringing a consultant on-board immediately upon approval of the grant with expectation of a completed study within six months (August 2011 through January 2012) at an estimated cost of $200,000. The completed study will include a comprehensive listing of land-owners and detailed analysis of necessary permitting to build/maintain facilities on their respective properties.

Preliminary Route Selection - CEA will explore multiple routing options: a) Use of an existing road ROW and the proposed new road extension into the geo-thermal site. "Piggybacking" the transmission line alongside new and existing roads can create lower construction costs and eliminate many of the permitting issues. b) Routing based on "least resistance," i.e. a potentially longer line, but situated where geographical and permitting issues are limited or nonexistent. c) Access to future potential energy sources or loads. The development of Lake Chakachamna, the Chulitina coal fields or future Coal to Liquids projects may require the addition of (future) substations, switchyards and/or tap lines off the main transmission corridor. d) A direct route from Beluga to the geo-thermal site. This option would minimize the line length but may have permitting and access issues.

Route selection and construction cost will be dependent on applicable permits, ancillary infrastructure requiring future electrical service and a more "finalized" proposal from Ormat Nevada, Inc. for construction access to the geo-thermal site. CEA would expect a decision on routing within three months (February through April 2012) at an estimated cost of $200,000.

Deliverables would include detailed topographic maps identifying the individual candidate routes with accompanying analysis highlighting pros and cons of each route. Evaluation of geographic barriers, permitting issues and access to other planned development in the area would be typical "commentary" for each route option. A final summary identifying the prime candidate would be included.

Preliminary Design - The transmission line design template is obviously heavily dependent on final route selection. In addition, CEA must consider potential customers along the chosen route such as the Chuitna Coal project, the proposed Lake Chakachamna Hydroelectric Facility and future Coal - to - Liquid (CTL) plants. Once a preliminary route is selected, a preliminary design is to be available within 3-4 months (April through July 2012) at an estimated cost of $200,000. This time frame and cost estimate assumes minimal field investigation by the consultant and a fairly well-defined accessible route. Deliverables would include a comprehensive project cost estimate, breakdown of major structures (wire sizes, type of tower(s), location of substations/switchyards, etc.) and analysis of the proposed right-of-way with detailed descriptions of individual transmission line segments and infrastructure.

Project Status: The grant award document has been prepared and signed by CEA. However, the grant award has not been issued. AEA is awaiting the results of ongoing exploration activities by Ormat to discover and define significant geothermal resources on Mt Spur. The appropriated Renewable Energy Fund budget for this project is $600,000, with a $20,000 anticipated local match.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$600,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$600,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$600,000.00**	**$0.00**

Delta Area Wind Turbines

Grantees	Alaska Environmental Power (Independent Power Producer)
Technology Type	WIND
Region	Railbelt
AEDG Project Code	10098

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0, 1	-102, 102	Delta Area Wind Turbines-Construction	2195370	410027	Construction	8/20/08	6/30/10	Closed

Grant 2195370: Delta Area Wind Turbines-Construction

Project Scope: The is the first project of its kind to integrate wind energy into the Railbelt Grid using an experimental program by Golden Valley Electric Association (GVEA), by using proven cold-weather wind turbine technology. The original scope was for 20 NW100 turbines, but the scoped changed to 1 NW100B turbine and 1 EWT900 turbine. This grant is a combination of Round 0 and Round I awards.

Project Status: Both wind turbines (1 megawatt total capacity) have been operating since 2010.
The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$2,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$2,000,000.00**
Required Local Match	$801,500.00	$954,534.37
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,801,500.00**	**$2,954,534.37**

Delta Junction Wind

Grantees	Alaska Wind Power, LLC (Independent Power Producer)
Technology Type	WIND
Region	Railbelt
AEDG Project Code	10068

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0, 1	-66, 66	Delta Junction Wind Assessment & Avian Study	2195465	410022	Feasibility	6/1/08	12/31/11	Closed

Grant 2195465: Delta Junction Wind Assessment & Avian Study

Project Scope: This is a proposal to study the wind resource potential along the Richardson Hwy south of Delta Junction.

Project Status: The grant is closed out. AEA received the avian study. The NRG raw files are confusing with different site numbers, coordinates and configurations. AEA has one previous study from V3 Energy LLC covering this region.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$65,412.09	$65,412.09
Other State Funding	$62,846.90	$62,846.90
Total State	**$128,258.99**	**$128,258.99**
Required Local Match	$184,567.79	$184,567.79
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$312,826.78**	**$312,826.78**

GVEA Eva Creek Wind Turbine Purchase

Grantees	Golden Valley Electric Association (Utility-Cooperative)
Technology Type	WIND
Region	Railbelt
AEDG Project Code	10104

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	109	Eva Creek Wind Farm Feasibility	2195425	410044	Feasibility	8/20/08	6/30/12	Closed
4	616	GVEA Eva Creek Wind Turbine Purchase	7040031	410044	Construction	7/1/11	3/31/14	Closed

Grant 2195425: Eva Creek Wind Farm Feasibility

Project Scope: Golden Valley Electric Association (GVEA) originally proposed feasibility, design, and construction of a 24 MW wind farm in the Healy area and requested $79 million in grant funding. AEA recommended $2.53 million for feasibility assessment, but the project was capped at $2 million.

Project Status: The grant agreement is in place. Detailed final design plans are being developed to address site access and equipment/material staging. The two minute wind analysis and geotech report was submitted to AEA on July 16, 2010. Geotech drilling was completed for substation foundation. Energy Yield Assessment was done for GE, Clipper, Siemens and REPower wind turbines. Field investigation was completed for wetlands determination. The archeological field studies are completed. Geotech drilling was finished in April 2011. The project was given a green light by board. RePower 2.05MW turbines were chosen. Michel is the EPC contractor. GVEA submitted design for road easements to the state. GVEA submitted exhibits to ACoE for wetland permits and avian/bat plans with the USFWS. The grant was closed out on January 4, 2012.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$2,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$2,000,000.00**
Required Local Match	$300,000.00	$300,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,300,000.00**	**$2,300,000.00**

Grant 7040031: GVEA Eva Creek Wind Turbine Purchase

Project Scope: The Eva Creek project will consist of 12 RePower 2.05 megawatt turbines for a total wind farm capacity of 24.6 megawatts. The grant consists of $1,463,200 in REF funds toward Q4 2011 turbine purchase, plus $10 million in legislative appropriation for construction costs. The construction funds can be spent first with match coming in subsequent quarters.

Project Status: All turbines have been erected. Roadwork is finished except for some minor culvert work. The substation equipment is installed. The collector grid is installed. The O&M building is with interior focus on communications room. The civil work finished at the communications site on the Parks Highway. The contractor has installed GSU transformers and secondary cable to the wind towers. The 138kW transmission tap to the Northern Intertie will need a permanent solution whenever the line is energized to 230kV - current workaround is using wooden poles for 138kV operation. An anti-freeze solution will be injected into the conduit from the GSUs into the wind turbine towers to prevent cable damage from freeze-up. All turbines are commissioned.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,463,200.00	$1,463,200.00
Other State Funding	$10,000,000.00	$10,000,000.00
Total State	**$11,463,200.00**	**$11,463,200.00**
Required Local Match	$23,731,049.51	$23,731,049.51
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$35,194,249.51**	**$35,194,249.51**

Nikiski Wind Farm

Grantees	Kenai Winds, LLC (Independent Power Producer)
Technology Type	WIND
Region	Railbelt
AEDG Project Code	10097

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	222	Nikiski Wind Farm Construction	2195433	410046	Construction	8/20/08	6/30/12	Closed

Grant 2195433: Nikiski Wind Farm Construction

Project Scope: This project consists of final design and construction project of a 9 MW wind farm at a refinery in Nikiski.

Project Status: The grant agreement is in place. Kenai Wind's power purchase agreement was cancelled by Homer Electric Association in May 2010. A request for grant extension through June 2012 was approved. The project was cancelled due to lack of a power purchase agreement.

The grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,102.87	$2,102.87
Other State Funding	$0.00	$0.00
Total State	**$2,102.87**	**$2,102.87**
Required Local Match	$18,925.88	$18,925.88
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$21,028.75**	**$21,028.75**

Craig Biomass Fuel Dryer Project

Grantees	City of Craig (Local Government)
Technology Type	BIOMASS
Region	Southeast
AEDG Project Code	10223

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	605	Biomass Fuel Dryer Project	7040042	402114	Construction	7/1/11	6/30/17	Closed

Grant 7040042: Biomass Fuel Dryer Project

Project Scope: The project will purchase and install a biomass fuel dryer with a capacity of approximately 13,000 tons of wood waste per year produced as a byproduct of the sawmilling process. Dried wood would then be burned in publicly owned facilities to provide reduced-cost, district-style heat for these facilities at reduced cost to the public entities that operate these facilities. The project enables recipient facilities to burn renewable fuels to provide heat at lower costs over time than the cost to burn fossil fuels to produce heat.

Prerequisite for release of AEA grant funds: - Acceptance of the lease/operation & maintenance/business agreement between Viking Lumber and the City of Craig. This is to assure public benefit of the grant funds.

Project Status: This project is operational and the grant is closed

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$350,000.00	$350,000.00
Other State Funding	$0.00	$0.00
Total State	**$350,000.00**	**$350,000.00**
Required Local Match	$250,000.00	$250,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$600,000.00**	**$600,000.00**

Haines (Chilkoot) Central Wood Heating System Construction

Grantees	Chilkoot Indian Association (Non Profit Entity)
Technology Type	BIOMASS
Region	Southeast
AEDG Project Code	10036

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	33	Haines Central Wood Heating Construction	2195373	402034	Construction	8/20/08	12/31/12	Closed

Grant 2195373: Haines Central Wood Heating Construction

Project Scope: The Chilkoot Indian Association is constructing a four-plex housing facility which will incorporate a cordwood-fired boiler - which is what this grant is funding. (The Chilkoot Indian Association will ultimately build four different four-plex units but currently only plans to build the first one.)

A separate boiler/fuel storage building will be built on one lot and recirculate hot water to be used in each of the four-plexes for building heat and domestic hot water. Architectural, civil, mechanical, and electrical design is complete except for an engineering refit to accommodate the wood boiler system. Grant funds will be used to complete the redesign and construction of the cordwood-fired boiler system.

Project Status: The project is operational and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$188,620.00	$188,620.00
Other State Funding	$0.00	$0.00
Total State	**$188,620.00**	**$188,620.00**
Required Local Match	$36,500.00	$36,500.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$225,120.00**	**$225,120.00**

Haines Central Wood Heating Feasibility Study (Community Buildings)

Grantees	Haines Borough (Local Government)
Technology Type	BIOMASS
Region	Southeast
AEDG Project Code	10044

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	41	Haines Central Wood Heating Feasibility Study	2195372	402036	Feasibility	8/20/08	12/31/13	Active
7	1021	Haines Borough Municipal Buildings Biomass Project	7071021	402036	Construction	7/1/14	12/31/17	Active

Grant 2195372: Haines Central Wood Heating Feasibility Study

Project Scope: The Haines Borough process to explore the potential for use of low-emission nontoxic wood biomass as the source for wood-fired boilers to provide heat (through an insulated pipe distribution system) initially to four buildings located within the Borough: the K-12 school, the Voc-Ed Building, the Municipal Administration Building, and the Public Library. The Haines Borough will contract with qualified consultants to perform reconnaissance and feasibility studies, and guide the Borough through the 35% conceptual design. Contracting will be in accordance with the Borough's standard procurement policies.

Project Status: In May 2012, Alaska Energy Engineering completed the Haines Borough Biomass Feasibility Study. It was concluded that biomass heating was not practical due to the high capital and maintenance costs associated with pellet boilers. However, AEA, Division of Forestry, and the Coast Guard Biomass staff disagree with some of the elements of the study.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$116,612.38	$116,612.38
Other State Funding	$0.00	$0.00
Total State	**$116,612.38**	**$116,612.38**
Required Local Match	$20,000.00	$20,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$136,612.38**	**$136,612.38**

Grant 7071021: Haines Borough Municipal Buildings Biomass Project

Project Scope: Provide final design and installation of low emissions, high efficiency pellet-fired boiler systems to heat the Haines School and Pool, Chilkat Center, Sewer Treatment Plant, Vocational Education Building, Library, old City Shop, new City Shop, Public Safety Building, and the Sheldon Museum.

Project Status: This project is in the design phase. A steering committee of has been formed of biomass technical resources to work with the community of the technology selection.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,237,400.00	$3,658.62
Other State Funding	$0.00	$0.00
Total State	**$1,237,400.00**	**$3,658.62**
Required Local Match	$137,448.00	$5,927.59
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,374,848.00**	**$9,586.21**

Kake Biomass

Grantees	Organized Village of Kake (Local Government)
Technology Type	BIOMASS
Region	Southeast
AEDG Project Code	10124

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1087	Kake Community Energy	7071087	402124		7/1/14	12/31/15	Active

Grant 7071087: Kake Community Energy

Project Scope: The Organized Village of Kake will complete the final design and permitting for a low emission, high efficiency, and 3rd party tested district wood-fired boiler and heating loop serving the Kake City School District, Tlingit and Haida Senior Center, and the City of Kakes Bingo Hall, and as funding allows, a tribal government office building and a lodge owned by the Organized Village of Kake (OVK), a federally recognized tribe. This project is estimated to displace approximately 35,000 gallons per year of fuel oil. The final design will include a wood supply analysis, a business/operational plan, and any required heat sales agreements.

Project Status: The grant agreement is in place and the Organized Village of Kake is finalizing the RFP for contractor selection. Grant is routing for approval

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$175,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$175,000.00**	**$0.00**
Required Local Match	$15,345.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$190,345.00**	**$0.00**

Ketchikan Gateway Borough Biomass Heating Project

Grantees	Ketchikan Gateway Borough (Local Government)
Technology Type	BIOMASS
Region	Southeast
AEDG Project Code	10441

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1037	Ketchikan Gateway Borough Biomass Heating Project	7071037	402129	Construction	7/1/14	12/31/16	Active

Grant 7071037: Ketchikan Gateway Borough Biomass Heating Project

Project Scope: The project will provide a biomass heating system at the airport.

Project Status: The grant was executed in June 2015 for $620,000 to Ketchikan Gateway Borough.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$620,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$620,000.00**	**$0.00**
Required Local Match	$117,929.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$737,929.00**	**$0.00**

Thorne Bay School Wood Fired Boiler Project

Grantees	Southeast Island School District (Local Government)
Technology Type	BIOMASS
Region	Southeast
AEDG Project Code	10116

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	211	Thorne Bay Wood Boiler	2195469	402044	Construction	7/1/09	6/30/13	Closed
4	636	Thorne Bay School Wood Fired Boiler Project	7040037	402044	Construction	7/1/11	6/30/13	Closed

Grant 2195469: Thorne Bay Wood Boiler

Project Scope: The grant is to fund the final design and construction of a wood fired boiler system that would provide heat to the school in Thorne Bay. The project involves placing Garn wood fired boilers adjacent to the school site and running underground piping from the wood fired boilers to the existing heating system. Wood would be supplied by local sawmills, USFS small sales, wood left behind on the landings from large timber sales, and from small local firewood cutters.

Project Status: This cordwood system is fully operational and the project is closed-out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$178,179.00	$178,179.00
Other State Funding	$0.00	$0.00
Total State	**$178,179.00**	**$178,179.00**
Required Local Match	$42,000.00	$42,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$220,179.00**	**$220,179.00**

Grant 7040037: Thorne Bay School Wood Fired Boiler Project

Project Scope: See above

Project Status: See above

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$236,507.12	$236,507.12
Other State Funding	$0.00	$0.00
Total State	**$236,507.12**	**$236,507.12**
Required Local Match	$60,000.00	$60,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$296,507.12**	**$296,507.12**

Yakutat Biomass

Grantees	City and Borough of Yakutat (Local Government), Yakutat Power (Utility-Government)
Technology Type	BIOMASS
Region	Southeast
AEDG Project Code	10062

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	60	Yakutat Biomass Feasibility	2195424	402035	Feasibility	8/20/08	6/30/13	Closed
7	1053	Yakutat Biomass District Heating Loop	7071053	402035	Construction	7/1/14		Active

Grant 2195424: Yakutat Biomass Feasibility

Project Scope: The grant funding under the phase of the project will provide for final design, permitting, equipment evaluation and resource evaluation of the forest project fuel source for its eventual replacement of diesel fuel.

The final design will include mechanical and electrical integration of the forest project system into the community of Yakutats electric generation infrastructure, as well as design of the fuel storage and handling system. The community of Yakutat has received initial funding from a separate funding source to relocate and upgrade its existing power generation system. The forest product design will be coordinated with the ongoing power plant upgrade design.

Permitting will include NEPA project level environment review of the proposed forest product fuel system and harvesting the resource. The City and Borough of Yakutat will work closely with stakeholders and the USFS to identify and mitigate potential impacts to the environment associated with harvesting the biomass resource.

In conjunction with the project level environmental review, the City and Borough of Yakutat through Yakutat Power will work with the borough planners, USFS, Yakutat Tlingit Tribe, Yak-Tat Kwaan Inc., and local stakeholders to define and refine the fuel resource available for this project: including identifying realistic costs associated with harvesting, transporting, processing, storing, and handling the biomass product.

Project Status: The project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$249,600.00	$249,600.00
Other State Funding	$0.00	$0.00
Total State	**$249,600.00**	**$249,600.00**
Required Local Match	$6,621.76	$6,621.76
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$256,221.76**	**$256,221.76**

Grant 7071053: Yakutat Biomass District Heating Loop

Project Scope: Primary heat sources in three municipal publicly accessible buildings will be replaced with two Garn WHS2000 boilers, which will use locally sourced cordwood biomass to provide heat through a supply loop linking all buildings. Existing antiquated hydronic heating systems in each building will be replaced and upgraded to improve efficiency.

Project Status: The grant agreement has not been put in place. The building with the largest heating load has elected to utilize a propane heating system and is no longer interested in participating in this project.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$103,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$103,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$103,000.00**	**$0.00**

Tenakee Inlet Geothermal Resource

Grantees	Inside Passage Electric Cooperative (Utility-Cooperative)
Technology Type	GEOTHERMAL
Region	Southeast
AEDG Project Code	10285

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	632	Reconnaissance Study of Tenakee Inlet Geothermal Resource	7040073	406018	Feasibility	7/1/11	6/30/13	Closed

Grant 7040073: Reconnaissance Study of Tenakee Inlet Geothermal Resource

Project Scope: Inside Passage Electrical Cooperative will use this Renewable Energy Fund (REF) Round IV grant to investigate the potential of using the known geothermal resource at Tenakee Inlet (approximately 57 59' 24" N, 135 56' 20" W) to produce power and evaluate alternative uses of the source.

The springs near the head of Tenakee Inlet have the highest recorded surface temperature (176F) of any of the numerous geothermal springs tested on Chichagof Island and listed on the Geothermal Resources of Alaska Map. Geochemistry of the spring waters indicates a maximum subsurface temperature of 243 F. The surface flow rate of the spring has been measured at 90 L/min and the convective heat discharge estimated at 0.5 MW.

The project area will be approximately 2 square miles, although the exploration is constrained by the fairly steep ridges to the west, south, and east, and will thus be focused on the valleys and southern portion of the area. The grant funded phase will include mapping, remote sensing, aerial and ground based geophysics, and geochemical sampling of soils, rocks, and surface waters. If this work is successful and promising, future work would include drilling necessary to confirm and develop the resource, necessary permitting, and power plant and infrastructure construction.

Project Status: In the fall of 2011, the contractor HDL conducted shallow temperature surveys, collected rock, water, and soil samples, and mapped geological strata.

In the spring and summer of 2012, the team completed a thermal imaging survey, collected additional shallow temperature data, and conducted a stream cross-section survey to estimate flow rates. Soil gas surveys were performed in the fall of 2012.

Results have been compiled into a final report which includes an economic analysis and recommendations for next steps to confirm the resource.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$568,729.62	$568,729.62
Other State Funding	$0.00	$0.00
Total State	**$568,729.62**	**$568,729.62**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$568,729.62**	**$568,729.62**

Japonski Island Boathouse Heat Pump

Grantees	City and Borough of Sitka (Local Government)
Technology Type	HEAT PUMPS
Region	Southeast
AEDG Project Code	10331

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	705	Japonski Island Boathouse Heat Pump	7040001	406015	Construction	7/1/11	12/31/14	Closed

Grant 7040001: Japonski Island Boathouse Heat Pump

Project Scope: The City and Borough of Sitka will use the Renewable Energy Fund, Round IV, grant to design and construct a hybrid ground source heat pump (GSHP) to serve the heating needs at the City and Borough of Sitka's Japonski Island Boathouse Historical Rehabilitation Project.

The Japonski Island Boathouse Heat Pump project hybrid system will consist of a ground source heat pump system that will meet approximately 81% of the facility's heating needs, with a supplemental electric heat system to make up the difference during periods when the facility's heat loads exceed the capacity of the ground source heat pump system.

The Renewable Energy Grant is for the additional design and construction costs for the hybrid ground source heat pump system. The grant funding is only for the costs associated with the ground source heat pump system portion of the hybrid system; the costs associated with the supplemental boiler and water heater are excluded from this grant. The large open work bay, which will have only a fabric curtain over the opening, will be heated as needed with a waste oil burner, since the heat pump system would have to be dramatically increased in size, for what would be a very intermittent load.

Project Status: The grantee was unable to provide the committed match and agreed to forfeit the grant. The grant has been closed out.

Juneau Airport Ground Source Heat Pump

Grantees	City and Borough of Juneau (Local Government)
Technology Type	HEAT PUMPS
Region	Southeast
AEDG Project Code	10001

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0	-111	Juneau Airport Ground Source Heat Pump	2195359	406008	Construction	10/7/08	6/30/10	Closed

Grant 2195359: Juneau Airport Ground Source Heat Pump

Project Scope: The use of geothermal energy at the Juneau International Airport Terminal is a part of an overall renovation and expansion project. Based on the feasibility study conducted by the Alaska Energy Engineering LLC, a Ground Source Heat Pump (GSHP) scheme offers the financial incentive to move away from traditional fuel oil-based heating systems to a system that extracts heat from the ground and obtains most of its purchased energy from cleaner hydroelectric sources.

The geothermal loop field is located under the pavement of the commuter plane airfield ramp. It consists of 108 vertical borings to a depth of 350 feet each. A mix of 88% water and 12% methanol circulates through a continuous underground loop of more than 16 miles of HDPE piping. The piping enters the building and is distributed to 31 electric heat pumps that provide heating, cooling, and ventilation to interior spaces, as well as heat to the building's front sidewalk that prevents build-up of ice and snow. The heat pumps are digitally controlled to efficiently respond to changing air conditions.

Construction of the loop field was completed in the fall of 2009. Installation of the heat pumps inside the building began in early 2010 and continued alongside other renovation work until May, 2011.

Project Status: The completed geothermal heat pump system has not yet been operating under design conditions long enough to draw substantive conclusions. Nearly half of the 96,000 sq. ft. building area is not using the new geothermal system and will continue to be served by diesel boilers until the Airport replaces these older portions of the terminal. Regardless of these obstacles, data gathered to date show promising evidence of a successful conversion from traditional diesel fired boilers to renewable geothermal heat pumps. Preliminary findings are as follows:

The savings in fuel oil between Calendar Year 2008 (pre-construction) and Calendar Year 2011 (post-construction) is 37,082 gallons. The average cost of fuel oil diesel #2 in Juneau during the period of this analysis is $3.52 per gallon. Therefore, the cost of fuel oil saved between Calendar Year 2008 and Calendar Year 2011 is approximately $130,529. The airport terminal project added approximately 12,000 sq. ft. of new area to the building.

The difference in electrical usage between Calendar Year 2008 (pre-construction) and Calendar Year 2011 (post-construction that includes 12,000 sq. ft. building expansion) is approximately 168,960 kWh. The electrical local cost, including demand charges, used for purposes of this analysis is $0.092/kWh. Therefore, the additional cost of electricity for the airport terminal is approximately $15,544.

Subtracting the additional electrical usage cost from the fuel oil cost savings results in $114,985 in direct annual fuel cost savings for the Juneau International Airport facility with the installation of the ground source heat pump system.

Another significant benefit that the airport has seen is the decrease in operations costs due to the snowmelt system. This is a new system, and while it demands significant energy to operate, the safety and passenger comfort issues are very positive. The snow melt system is energized by three water-to-water electric heat pumps that are integrally tied to the geothermal loop field. While not analyzed in detail, it is expected that operating this system by an equivalent diesel energy source would have made the installation cost prohibitive for the airports annual operating budget. The geothermal snow melt system savings over traditional snow removal operations is approximately $10,000 per year in staff labor and $1,000 in equipment and supplies.

Recognizing the limited scope of analysis to date, the Airport will conduct a full analysis following completion of planned energy efficiency projects and ongoing minor renovation.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$513,000.00	$513,000.00
Other State Funding	$0.00	$0.00
Total State	**$513,000.00**	**$513,000.00**
Required Local Match	$513,000.00	$513,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,026,000.00**	**$1,026,000.00**

Juneau Aquatic Ctr. Ground Source Heat Pump

Grantees	City and Borough of Juneau (Local Government)
Technology Type	HEAT PUMPS
Region	Southeast
AEDG Project Code	10106

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	111	Juneau Ground Source Heat Pump Constr	2195393	406009	Construction	8/20/08	3/31/12	Closed

Grant 2195393: Juneau Ground Source Heat Pump Constr

Project Scope: The City & Borough of Juneau designed (Phase III) and constructed (Phase IV) a hybrid ground source heat pump system to serve the heating needs at the Dimond Park Aquatic Center. The Center is a new competition, recreation, and education swimming facility in Juneau. Construction began on the facility in the spring of 2009 and completed in the fall of 2010. The system consists of a ground source heat pump that will meet 81% of the facility's heating needs and supplemental electric heat system to make up the difference during periods when the facility's heat loads exceed the capacity of the ground source heat pump system.

The facility primarily serves Juneau residents and visitors from nearby southeast Alaska communities. The City & Borough of Juneau Engineering and Parks and Recreation Departments were directly involved with the design and construction of the facility, as was the Juneau School District.

Project Status: The Ground Source Heat Pump (GSHP) system has been in nearly continuous operation since the spring of 2011 providing heating water to the building, ventilation system, domestic water pre-heating system, and pool water heating systems.

The system's capacity is so great that City-Borough has had some issues with insufficient load - in the summer months the system was operating at or just below minimums and needed more load in order to operate efficiently.

Despite being in operation since 2011, data was not successfully logged until November of 2012. The data that is available indicates that the system has performed with a Coefficient of Performance above 3.0 when more heavily loaded but the efficiency appears to decrease significantly when more lightly loaded in the summer months.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,450,000.00	$1,450,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,450,000.00**	**$1,450,000.00**
Required Local Match	$500,000.00	$500,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,950,000.00**	**$1,950,000.00**

Sitka Renewable Energy Feasibility Study for Wastewater Treatment Plant

Grantees	City and Borough of Sitka (Local Government)
Technology Type	HEAT PUMPS
Region	Southeast
AEDG Project Code	10332

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	706	Sitka Renewable Energy Feasibility Study for Wastewater Treatment Plant	7040072	406017	Feasibility	7/1/11	6/30/12	Closed

Grant 7040072: Sitka Renewable Energy Feasibility Study for Wastewater Treatment Plant

Project Scope: The City & Borough of Sitka used a Round IV Renewable Energy Fund (REF) grant to evaluate the technical and financial feasibility for the integration and optimization of heat pump technologies to offset heating oil and grid electricity usage in the Sitka Wastewater Treatment Plant of the waterfront of Japonski Island, Sitka.

Project Status: The feasibility study was completed in July 2012.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$16,699.14	$16,699.14
Other State Funding	$0.00	$0.00
Total State	**$16,699.14**	**$16,699.14**
Required Local Match	$2,376.48	$2,376.48
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$19,075.62**	**$19,075.62**

Sitka Renewable Energy Feasibility for Centennial Hall & Library

Grantees	City and Borough of Sitka (Local Government)
Technology Type	HEAT PUMPS
Region	Southeast
AEDG Project Code	10333

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	707	Sitka Renewable Energy Feasibility for Centennial Hall & Library	7040071	406016	Feasibility	7/1/11	6/30/12	Closed
7	1011	Sitka Centennial Hall Air Source Heat Pump	7071011	406016	Construction	7/1/14	1/31/17	Active

Grant 7040071: Sitka Renewable Energy Feasibility for Centennial Hall & Library

Project Scope: The City & Borough of Sitka will use a Round 4 RE Fund grant to evaluate the technical and financial feasibility of the integration and optimization of heat pump technologies to offset heating oil and grid electricity at Centennial Hall and the Kettleson Memorial Library on the waterfront of downtown Sitka.

Project Status: The feasibility study was completed in July 2012 and the grant is closed. The feasibility study provided information to the City of Sitka, who chose to construction the Kettleson Memorial Library air source heat pump with their own funding as part of a larger renovation and expansion project. The construction project is underway and the heat pump has been installed. The City re-applied for REF funding to construct the Centennial Hall air source heat pump.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$30,000.00	$30,000.00
Other State Funding	$0.00	$0.00
Total State	**$30,000.00**	**$30,000.00**
Required Local Match	$4,626.81	$4,626.81
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$34,626.81**	**$34,626.81**

Grant 7071011: Sitka Centennial Hall Air Source Heat Pump

Project Scope: This grant consists of $232,620 from Round 7 of the Renewable Energy Fund for design, permitting, and construction of an air source heat pump system that will provide space heat to Harrigan Centennial Hall in Sitka. The heat pump system will be installed in conjunction with major renovations to the building. The City and Borough of Sitka (CBS) will complete final design, permitting, construction and startup of the air-to-water heat pump system along with any necessary controls or equipment needed to integrate the heat pumps into buildings heating system. The heat pump units will be housed in a louvered enclosure; a variable refrigerant flow system will pipe refrigerant to indoor fan coils to provide both heating and cooling to the building. A final design package including narrative, construction specifications, drawings, engineers cost estimates, updated economic analysis, and operational plan must be complete and accepted by the Authority prior to release of construction funds.

Project Status: Construction activities are underway. The air source heat pump is part of a larger retrofit for the building which includes major energy efficiency improvements, a new roof, new windows, and more. As of January 2016 the interior walls are partially framed and the installation of the electrical, mechanical, plumbing, and building control infrastructure is in progress. The project construction is ahead of the original schedule by approximately two months. Windows and exterior doors are onsite and installation in planned to begin January 2016 along with the exterior siding and the covered walkways that surround the new Museum Area.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$232,600.00	$4,636.26
Other State Funding	$0.00	$0.00
Total State	**$232,600.00**	**$4,636.26**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$232,600.00**	**$4,636.26**

Hoonah Heat Recovery Project

Grantees	Inside Passage Electric Cooperative (Utility-Cooperative)
Technology Type	HEAT RECOVERY
Region	Southeast
AEDG Project Code	10324

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	687	Hoonah Heat Recovery Project	7040036	403053	Construction	7/1/11	12/31/13	Closed

Grant 7040036: Hoonah Heat Recovery Project

Project Scope: Inside Passage Electric Cooperative(IPEC) will construct a heat recovery project in the community of Hoonah. The Project will recover available jacket water heat from IPEC-Hoonah diesel generation that is currently being rejected to the atmosphere via radiators and reduce annual diesel heating fuel consumption of nearby community buildings by over 55,000-gallons/year. The buildings heated are the Hoonah City Schools' main school building, Hoonah City Schools' pool/gymnasium, Hoonah City police station, and the Hoonah City Fire Hall.

IPEC will contract with AE&E for the management of the design, permitting, system integration, and construction of the project. Project matching funds will be provided by IPEC through a Denali Commission grant in the amount of $530,000.

Prerequisites for AEA grant reimbursement are acceptance of: *NEPA Permitting *95% Engineering Design Drawings *Heat Sales Agreements *Utility Permits for routing

Project Status: The system is fully operational.

Grantee reports that the system is operating as intended.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$472,963.89	$472,963.89
Other State Funding	$0.00	$0.00
Total State	**$472,963.89**	**$472,963.89**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$472,963.89**	**$472,963.89**

Wrangell Hydro Based Electric Boilers

Grantees	City and Borough of Wrangell (Local Government)
Technology Type	HEAT RECOVERY
Region	Southeast
AEDG Project Code	10012

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	9	Wrangell Hydro Based Electric Boilers Construction	2195423	407055	Construction	8/20/08	12/31/11	Closed

Grant 2195423: Wrangell Hydro Based Electric Boilers Construction

Project Scope: This agreement is to fund final design, permitting, and construction of the conversion from diesel-fired boilers to electric-fired boilers in 5 public facilities located in Wrangell, Alaska. The conversion will use the reduced electric rate provided by the City to utilize the spilling of excess water (water not used in power production) provided by the existing Tyee Lake Hydroelectric facility. The project is handled by the City & Borough of Wrangell and Wrangell Municipal Light & Power (WMLP). Electrical Power Systems, Inc. performed 2 feasibility studies for this project and is a preferred choice to perform project management and engineering design.

The original application identified the total of 11 buildings for conversion. Due to the reduction of funds awarded, at this point, it is feasible to complete the first 5 facilities. The city's priorities are first the Nolan Center ($148,400), second the Public Safety Building ($139,875), third the High School ($195,000), fourth the Middle School ($133,938), and fifth the Elementary School ($137,375).

One facility, the Fire Satellite Station ($7,887) is already completed.

As additional funds become available to the community, the remaining 5 building will be completed in the order of sixth the Hospital ($169,490), seventh the Library ($88,600), eight the Power Plant ($144,265), ninth the Public Works Building ($121,607), and tenth the Harbor Office ($10,625).

Project Status: The project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,862,387.13	$1,862,387.13
Other State Funding	$0.00	$0.00
Total State	**$1,862,387.13**	**$1,862,387.13**
Required Local Match	$76,357.87	$76,357.87
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,938,745.00**	**$1,938,745.00**

Blue Lake Hydroelectric Expansion Project

Grantees	City and Borough of Sitka (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10416

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	917	Blue Lake Hydroelectric Expansion Project	7060917	407088	Construction	7/1/13	6/30/17	Active

Grant 7060917: Blue Lake Hydroelectric Expansion Project

Project Scope: The proposed Blue Lake Hydroelectric Expansion Project, a comprehensive upgrade of an existing hydroelectric project at Blue Lake, began construction in 2013. When completed in 2015, the project will increase the nameplate capacity of the Blue Lake facility from 7.54 to 16.9 MW and increase the annual energy generation by 32,000 MWh. It will result in an increase of the total annual hydroelectric generation of the City and Borough of Sitka (CBS) by 27%, from 120,000 to 152,000 MWh.

Some of the major features of this project include the following: The dam crest would be raised by 83 feet to a spillway crest elevation of 425 feet msl and a parapet elevation of 428 feet msl. The existing intake structure would be replaced by a new intake structure located at a higher elevation and closer to the dam. The existing power conduit intake would be abandoned in place. A new underground power conduit would be installed from the new intake structure to an interconnection point with the existing underground power conduit. The portion of the existing power conduit from the existing intake structure to the point of interconnection would be plugged at the point of interconnection. The steel liners at the portals to the power conduit would be lengthened. An underground 20-foot-diameter surge chamber would be installed along the power conduit with venting to the surface at elevation 465 feet msl. The existing 7-foot-diameter penstock would be replaced with a new 9-foot-diameter penstock between the lower portal and the new powerhouse. The existing powerhouse would be decommissioned and a new powerhouse would be constructed housing three new generating units. The existing 670-kW fish valve unit would be replaced with a new 1-MW generating unit. The existing 870-kW pulp mill feeder unit would be decommissioned. The existing powerhouse transformers would be replaced with new transformers. Equipment access and dam site staging facilities would be developed. Timber and other vegetation around the reservoir and in Blue Lake Creek Valley would be left in place and not cleared prior to inundation to the new water surface elevation. A 1,400-foot-long dam site power distribution line from the fish valve unit would travel along the tunnel alignment to Blue Lake Road and then follow Blue Lake Road to the dam site. The alignment of Blue Lake Road would be changed to accommodate heavy equipment transport. The project boundary would be expanded from 1,602 acres to 1,730 acres to accommodate the increased reservoir area. CBS was issued the capacity related amendment to its existing FERC license for the hydroelectric expansion project in May 2012.

The CBS advertised the construction contract in May, 2012 and opened bids in July. The bids received were well above the engineers estimate. CBS evaluated the bids and opted to select one of the bidders and then negotiate with them. A Notice to Proceed was issued on November 1 and the official ground breaking ceremony took place on December 21, 2012. A two year construction cycle is anticipated.

Funding for the $142,305,487 project began in 2009 under Grant 2195311 with a legislative appropriation of $12,500,000 and a CBS cash match. A portion of these funds, were used to complete project development, including licensing, permits and engineering design and initial payments for owner-purchased equipment. In FY 2010, a legislative grant provided $8,000,000 in new funding was added to the existing grant by an amendment. Grant 7910013 provided some funding for this project based on a combination of city funds, an FY 2012 state legislative grant and municipal utility revenue bonds. (AEA reserved $50,000 from the FY 2012 grant to pay for its grant administration costs.)

Funding for Grant 7060917 comes from Round VI of the Renewable Energy Fund Grant Program. The scope of work and the total of the overall project cost remain unchanged under this grant and the other two grants already issued. Because the total project cost is unchanged, Amendment 1 to Grant 7910013 will be created to reduce the CBS cash match in that grant by $8,000,000, being offset by this grants $4,000,000 increase in the Renewable Energy Fund grant funding and $4,000,000 in CBS cash match.

Project Status: The grant agreement was signed August 2, 2013. Substantial completion is scheduled for January 2015. Grant reporting is current through November 2014.

All grant have been expended and the reconstructed and reconfigured Blue Lake project was operational and commissioned at the end of 2014.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$4,000,000.00	$4,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$4,000,000.00**	**$4,000,000.00**
Required Local Match	$4,000,000.00	$4,000,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$8,000,000.00**	**$8,000,000.00**

Burro Creek Hydro

Grantees	Burro Creek Holdings, LLC (Independent Power Producer)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10045

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	42	Burro Creek Hydro Feasibility Study	2195400	407048	Feasibility	8/20/08	12/31/11	Closed

Grant 2195400: Burro Creek Hydro Feasibility Study

Project Scope: The project is to explore the potential of upgrading the current hydro system on Burro Creek in order to provide power either to Alaska Power & Telephone or the City of Skagway, culminating in a feasibility study. Conceptual design, stream gauging, investigation of impacts and permitting issues, exploration of power sales options, cost and benefit analysis, and the engineering report will be completed.

Project Status: The final feasibility report, Burro Creek Hydroelectric Feasibility Report, dated November 2011 and prepared by Polarconsult Alaska, Inc. was delivered and accepted by AEA December 2011. Final progress and financial reports were received and the project is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$48,000.00	$48,000.00
Other State Funding	$0.00	$0.00
Total State	**$48,000.00**	**$48,000.00**
Required Local Match	$12,000.00	$12,658.65
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$60,000.00**	**$60,658.65**

Connelly Lake Hydroelectric Project

Grantees	Alaska Power Company (Utility-Private)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10202

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	627	Connelly Lake Hydroelectric Project Feasibility Study	7040066	407079	Feasibility	7/1/11	6/30/14	Active

Grant 7040066: Connelly Lake Hydroelectric Project Feasibility Study

Project Scope: The Connelly Lake Hydroelectric Project is a proposed storage hydro located near the community of Haines in the Upper Lynn Canal transmission system of Southeast Alaska. The project would have a capacity of 8 MW and generate 43.2 GWh of energy annually from the project works consisting of a 75' high dam to create a 10,160 acre-feet storage reservoir, a 10,000' long tunnel and penstock arrangement conveying 57 cfs, and pelton turbines operating under 1965' of static head. Total estimated capital cost for the project is 87 million in 2014.

The scope of work under this grant is to analyze and document the feasibility of the project. Work included stream gauging, LIDAR topographic surveying, geotechnical investigations, FERC Scoping, fish, wildlife, botanical, wetlands, and heritage surveys, and preparing conceptual designs culminating in a feasibility-level report titled "Feasibility Report Connelly Lake Hydroelectric Project" by Alaska Power and Telephone dated August 2014.

Project Status: The study found that the project is not economical due to the limited demand and the high cost of the project. It was found that the Project is likely to be technologically feasible using well-known and reliable construction methods. However, the remote location of the lake and the need to develop storage makes the cost of the Project very expensive.

The report recommended the project should not be considered further for development as long as loads in the ULC system trend along the reference load case of the SEIRP. Should loads increase significantly more than the reference load forecast, or if the Palmer mine and/or Yukon Energy interconnection appear imminent, then development of Connelly Lake should be reconsidered.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$468,000.00	$468,000.00
Other State Funding	$0.00	$0.00
Total State	**$468,000.00**	**$468,000.00**
Required Local Match	$117,000.00	$117,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$585,000.00**	**$585,000.00**

Elfin Cove Hydro

Grantees	Community of Elfin Cove Utility Commission (Utility-Government), Community of Elfin Cove Non-Profit (Non Profit Entity)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10247

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0, 2	-17, 231	Elfin Cove Hydro Assessment	2195343	407015	Feasibility	10/29/08	12/31/11	Active
4	692	Elfin Cove Hydroelectric Project	7040043	407015	Final Design	7/1/11	12/31/16	Active

Grant 2195343: Elfin Cove Hydro Assessment

Project Scope: The project is to prepare a feasibility study of the Crooked Creek diversion to Jim's Lake for a run-of-river hydroelectric project. A site visit, evaluation of various sites for hydroelectric potential, power generation cost, detailed plant and site services design, access, transmission infrastructure, costs, critical issues, and conclusions as to the technical and economic feasibility of the project and recommendations for further studies will be completed, as well as stakeholder meetings, pre-application filings, and stream gauging.

Project Status: The feasibility grant is complete. Deliverables under this phase include the reports "Hydroelectric Reconnaissance Study Elfin Cove, Alaska", dated June 2010, prepared by Polarconsult Alaska and "Crooked Creek and Jim's Lake Hydroelectric Feasibility Study", dated June 2011 and prepared by Polarconsult Alaska.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$0.00	$0.00
Other State Funding	$99,667.80	$99,667.80
Total State	**$99,667.80**	**$99,667.80**
Required Local Match	$25,000.00	$25,000.00
Federal Grant Funding	$99,667.80	$99,667.80
Total Project Costs	**$124,667.80**	**$124,667.80**

Grant 7040043: Elfin Cove Hydroelectric Project

Project Scope: The project is to complete permitting and final design of a run-of-river hydroelectric project at Crooked Creek and a second storage hydroelectric project at Jim's Lake to serve the community. Before funds can be expended towards permitting and final design an independent, third party review of the hydro projects evaluated during the reconnaissance and feasibility studies, in regard to population, demand, and feasible project layout, must be completed. Upon completion of review and verification that project should proceed, then the project will move into the permitting and final design phases.

Project Status: The project received a FERC preliminary permit. Field work conducted include bald eagle and wildlife surveys, fisheries survey of Crooked Creek, Jim's Lake and Creek, field validation of LIDAR topography, preliminary wetlands and delineation, evaluation of potential routes for access, penstock, and powerline, flow measurements, and bathymetric survey. The consultant began preparation of preliminary design drawings.

The Grant was extended through 2015 and the grantee met ADNR at the project site in April 2015 as part of the land leasing process. The grantee needs to file a hydrology report, updated development plan, and obtain a fish habitat permit in order to obtain a final decision from ADNR on the lease. The grantee expects to complete that work in October 2015.

As of January 2016 the Community is working with the forest service to establish resource study requirements as part of the FERC licensing process. Permitting, continued hydrology data collection, and preliminary design are targeted for the reporting period.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$347,000.00	$148,963.76
Other State Funding	$0.00	$0.00
Total State	**$347,000.00**	**$148,963.76**
Required Local Match	$48,000.00	$25,957.86
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$395,000.00**	**$174,921.62**

Excursion Inlet Hydro Project

Grantees	Haines Borough (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10301

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	625	Excursion Inlet Hydro Project Phases I & II	7040069	407083	Feasibility	7/1/11	12/31/14	Active

Grant 7040069: Excursion Inlet Hydro Project Phases I & II

Project Scope: The project is to complete reconnaissance study of two potential hydroelectric sites on Excursion Inlet Creek for the community of Excursion Inlet. The study will be conducted in two separate phases. Phase I: project scoping and preliminary fish habitat study. First phase will determine if fish ladders will be necessary. If findings suggest fish ladders are necessary, the project work shall cease. Phase II: AEA must authorize. Includes resource identification & analysis, land status, permitting & environmental analysis, conceptual design, cost estimates, and simple economic analysis, culminating in a recon report.

Project Status: The Alaska Energy Authority (AEA) has received the final report and Haines Borough (Grantee) has completed the Hydropower Reconnaissance Study for Excursion Inlet as required by the scope of work (Report). AEAs finds the Grantees Report satisfies the requirements of the Grant.

A final review of the Grantees Report was performed by AEA resulting in the following general comments and recommendations for the Grantees consideration for future work.

AEA concurs with the final recommendations for stream gaging (particularly for South Creek), LIDAR surveys, geologic, land use, and permitting and aquatic investigations and consultations.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$78,384.40	$78,384.40
Other State Funding	$0.00	$0.00
Total State	**$78,384.40**	**$78,384.40**
Required Local Match	$8,418.43	$8,418.43
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$86,802.83**	**$86,802.83**

Falls Creek Hydroelectric Construction

Grantees	Gustavus Electric Company (Independent Power Producer)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10013

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	10	Falls Creek Hydroelectric Construction	2195387	407045	Construction	8/20/08	8/30/09	Closed

Grant 2195387: Falls Creek Hydroelectric Construction

Project Scope: Project is to finish construction of the Falls Creek Hydroelectric Project, which is an 800 kW run-of-river hydroelectric facility, located in Gustavus, Alaska that will provide electric power to the community of Gustavus. The project is being built by Gustavus Electric Company to displace existing diesel generation. Construction of the project is approximately 90% complete and will provide 90% of the community's electric needs.

All major equipment and materials are on hand except the power house control system, which will be supplied by Phoenix Power Control, Inc. (PPCI) of Monroe, Washington.

All required permits have been obtained and are listed in the final Environmental Impact Statement (EIS) for this project located at www.ferc.gov, project #P-11659.

Remaining tasks at the time of application: -Complete welding of 1200 feet of steel penstock -Prepare bedding and foundation for the penstock pipe -Form and pour 5 concrete thrust blocks for the penstock -Perform ultrasonic testing of pipeline welds -Paint and backfill the pipe -Complete finish work on the powerhouse -Finish turbine/generator installation -Complete purchase of generator control system from PPCI -Install the control system -Complete the substation -Complete installation of the fiberoptic communication cable -Finish miscellaneous items at the intake structure -Install slope protection at the powerhouse -Complete erosion and sediment control work throughout the project per the Environmental Compliance Monitor. -Survey the project boundary per the State of Alaska specifications. -Finish other work as required.

Project Status: The project is completed and began operation in July 2009.

The project is operating as intended.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$750,000.00	$750,000.00
Other State Funding	$0.00	$0.00
Total State	**$750,000.00**	**$750,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$750,000.00**	**$750,000.00**

Gartina Falls Hydroelectric Project

Grantees	Inside Passage Electric Cooperative (Utility-Cooperative)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10259

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	462	Hoonah-IPEC Hydro Project	7030019	407070	Feasibility	7/1/10	6/30/14	Closed
6	922	Gartina Falls Hydroelectric Project	7060922	407100	Construction	7/1/13	12/31/15	Active

Grant 7030019: Hoonah-IPEC Hydro Project

Project Scope: The project is to complete FERC licensing, project permitting and design for two potential run-of-river hydropower development projects at Water Supply and Gartina Creeks in Hoonah. Included in this scope will be the 4 mile transmission line interconnection of the projects with Hoonah. After the grant documents are in place, six project development tasks will be accomplished with the funds.

Project Status: The project received FERC License P-14066. A majority of the Terms & Conditions are filed except for the Final Project Design and Specifications, Article 302. Land agreements and ACOE Wetlands Permit received. Anticipate finalizing project design drawings and specifications during the next reporting period.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$850,000.00	$850,000.00
Other State Funding	$0.00	$0.00
Total State	**$850,000.00**	**$850,000.00**
Required Local Match	$450,000.00	$450,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,300,000.00**	**$1,300,000.00**

Grant 7060922: Gartina Falls Hydroelectric Project

Project Scope: Inside Passage Electric Cooperative (lPEC) will use up to $6,694,000 from a Round VI Renewable Energy Fund grant and $15,000 of in-kind match funds for construction of the 455 kW run-of-river Gartina Falls Hydroelectric Project. The project is located five miles south of the City of Hoonah and will annually generate up to 1,810 MWh and provide for approximately 30% of its annual electricity needs.

IPEC received Round III renewable grant funding from the Authority to complete permitting and final design for this hydroelectric project. A Federal Energy Regulatory Commission license was issued for the project in January 2013. Permitting and final design are underway at this time and will need to be submitted to AEA before construction can move forward under this grant.

The Gartina Falls Hydroelectric Project will consist of a small diversion dam and intake just above Gartina Falls, a steel penstock, a powerhouse located at the base of Gartina Falls, access road and a 3.8 mile overhead transmission line. The dam will be a rockfill dam with concrete core wall. It will consist of a center section with a moveable radial gate and a fixed crest overflow section.

Project Status: The grant agreement was signed on August 8, 2013.

In 2014, due to permitting and construction delays, the grant was extended until 12/2015.

The project construction shut down in December 2014 in order to allow the grantee to obtain additional financing.

The Grantee obtained additional financing and completed the construction of the project in June 2015. The project started operation at the end of July 2015.

All grant funds have been expended.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$6,694,000.00	$6,694,000.00
Other State Funding	$0.00	$0.00
Total State	**$6,694,000.00**	**$6,694,000.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$6,694,000.00**	**$6,694,000.00**

Gunnuk Creek Hydroelectric Feasibility Study

Grantees	Inside Passage Electric Cooperative (Utility-Cooperative)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10442

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1025	Gunnuk Creek Hydroelectric Feasibility Study	7071025	407104	Feasibility	7/1/14	12/31/16	Active

Grant 7071025: Gunnuk Creek Hydroelectric Feasibility Study

Project Scope: The utility will conduct a feasibility study for a hydroelectric project on Gunnuck Creek.
A reconnaissance study dated Sep 2015 was submitted with a round 9 grant application.

Project Status: IPEC has completed a reconnaissance and feasibility study using a REF $80K grant. IPEC has reported that it is pursuing final design using its own funds.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$80,000.00	$52,774.50
Other State Funding	$0.00	$0.00
Total State	**$80,000.00**	**$52,774.50**
Required Local Match	$7,000.00	$7,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$87,000.00**	**$59,774.50**

Hiilangaay (Reynolds Creek) Hydroelectric Project

Grantees	Haida Energy, Inc. (Independent Power Producer), Alaska Power Company (Utility-Private)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10100

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	104	Reynolds Creek Hydroelectric Construction	2195440	407032	Construction	8/8/08	12/31/15	Active
4	629	Reynolds Creek Hydro Electric Project Transmission Line	7040065	407032	Construction	7/1/11	12/31/13	Active

Grant 2195440: Reynolds Creek Hydroelectric Construction

Project Scope: The grant funds will be used to assist the construction of the Reynolds Creek Hydroelectric Project near Hydaburg, Alaska. The project will be funded and constructed per the Project Management Agreement negotiated between the various entities involved with the funding and construction of the project.

Project Status: Construction of Reynolds Creek began in the fall of 2011 with the clearing of a portion of the transmission route. Discussions are underway to consider changes to the project features so that more reservoir storage can be utilized by the project. If found feasible, this change will require opening the FERC license for amendment. There remain some impediments to move forward pending details of power sales agreement.

The PSA was drafted and submitted to the RCA with a Certificate of Public Conveynance and Necessity Application (CPCN). The CPCN was subsequently issued the Regulatory Commission of Alaska (RCA) in August 2015. The applicant is finalizing the design changes, license amendment, in negotiations with Sealaska to modify the land lease to comply with AIDEA loan requirements. The AIDEA loan agreement is in the final stages of negotiation and the project is expected to resume construction in late 2015 or 2016.

As of January 2016 the engineer/contractor (AP&T) is completing final revisions to the project design and consulting with agencies on FERC license amendments. Haida Energy are in the process of making revisions to leases and the construction contract to meet AEA's loan requirements. The project appears on track to resume construction in 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$1,501,661.46
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$1,501,661.46**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,000,000.00**	**$1,501,661.46**

Grant 7040065: Reynolds Creek Hydro Electric Project Transmission Line

Project Scope: The grant funds will be used to assist the construction of the Reynolds Creek Hydroelectric Transmission lines near Hydaburg, Alaska. This transmission will interconnect with the Prince of Wales Island grid which currently serves most of the communities on the Island. The project will be funded and constructed per the Project Management Agreement negotiated between the various entities involved with the funding and construction of the project.

Project Status: This Round IV grant has not been issued. Discussions are underway to consider changes to the project features to add more reservoir storage, allowing project energy to be dispatched during periods of low precipitation. If found feasible, this change will require re-opening the FERC license for amendment. There remain some impediments to move forward pending resolution/details of power sales agreement and ownership shares. The appropriated Renewable Energy Fund budget for this project is $2,000,000.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,000,000.00**	**$0.00**

Indian River Hydroelectric Project

Grantees	City of Tenakee Springs Electric Department (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10067

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	695	Indian River Hydroelectric Project	7040041	407014	Final Design	7/1/11	12/31/15	Active
6	978	Indian River Hydroelectric Project Construction	7060978	407014	Construction	7/1/13	12/31/15	Active

Grant 7040041: Indian River Hydroelectric Project

Project Scope: Project is to complete permitting and final design of a 120 kW run-of-river hydroelectric project on Indian River to serve the community of Tenakee Springs.

Project Status: All state permits necessary for construction have been issued. ADNR issued the City Early Entry Authorization for project easements on state land effective August 1, 2013. State Fish Habitat and Water Use permits have been issued. The City applied for and ADNR issued a final decision to reopen an existing rock quarry at approximately mile 0.8 of Indian River Road for use. USFS issued a road use permit for Indian River Road that is good for 5 years and is renewable indefinitely. The COE issued permits for wetlands fill and work in waters. Phase I (access) design drawings and contracts were finalized and issued for construction, 95% drawings for Phase II is in progress. Engineer's cost estimate for Phase I was completed and Phase II is being updated. Engineer's cost estimate for Phase II, updated financial and economic analysis, and draft business and operating plans are to be done during the next reporting period.

As of January 2016 the City is completing final revisions to the Phase II drawings to simplify the project and increase the available head slightly. Construction is expected to resume in 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$203,000.00	$184,654.54
Other State Funding	$0.00	$0.00
Total State	**$203,000.00**	**$184,654.54**
Required Local Match	$26,000.00	$24,795.75
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$229,000.00**	**$209,450.29**

Grant 7060978: Indian River Hydroelectric Project Construction

Project Scope: The City of Tenakee Springs, the electric utility provider, will use the $2,988,000 Round VI Renewable Energy Fund grant, $312,000 of cash matching funds from a Legislative grant, and $20,000 of in-kind local matching funds, to construct the 180 kW run-of-river Indian River Hydroelectric Project in Tenakee Springs.

Project features include a concrete diversion structure collocated near a U.S. Forest Service fish passage facility at the head of falls #4 on Indian River, a 1,534 foot long penstock, a powerhouse located below falls #2, and a new transmission line approximately 1 mile in length to connect to the existing electrical distribution system. The project will be developed on State and City land. The project is estimated to meet approximately 90% of the electrical demand of Tenakee Springs.

The City of Tenakee Springs received funding for feasibility assessment under Round I (2195348), and permitting and final design under Round IV (7040041) for the project. Final design is being completed under the Round IV grant at the time of this grant award. Before funds for construction are released permits and final drawings and specifications must be accepted by the Authority.

The City issued an invitation to bid May 2015 and then passed a unanimous resolution to award and provided notice of intent to award to Southeast Road Builders, Inc. and executed the contract for the Phase II construction which began in mid June 2015.

Project Status: Plans were submitted for AEA review in November 2014. Switchgear and hydro turbine specs were submitted for review in November 2014. The business & operating plan, cost estimate and engineers energy estimate were submitted for review in January 2015.

As of January 2016 the City is completing final revisions to the Phase II drawings to simplify the project and increase the available head slightly. Construction is expected to resume in 2016.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$2,988,000.00	$1,361,438.85
Other State Funding	$312,000.00	$57,406.83
Total State	**$3,300,000.00**	**$1,418,845.68**
Required Local Match	$20,000.00	$700.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,320,000.00**	**$1,419,545.68**

Neck Lake Hydro

Grantees	Alaska Power and Telephone (For Profit Entity)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10125

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	223	Neck Lake Feasibility Study & Conceptual Design	2195455	407057	Feasibility	7/1/09	12/31/10	Closed
		Neck Lake Hydroelectric Project	7030038	407057	Final Design	7/1/10	7/31/10	Closed

Grant 2195455: Neck Lake Feasibility Study & Conceptual Design

Project Scope: The project is to prepare a resource assessment, feasibility study and conceptual design of the Neck Lake Hydroelectric Project to serve the village of Whale Pass. Activities to be accomplished with this grant include: surveying and mapping, conceptual design, environmental surveys, geotechnical investigations, estimate of power by month, construction cost and permitting issues, culminating in a feasibility report.

Project Status: The grant is closed. The grantee decided to terminate the project due to its small size and increased costs of licensing, permitting, and design requirements associated with falling under FERC jurisdictional licensing. Preliminary design drawings and survey data were delivered under this grant.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$22,474.73	$22,474.73
Other State Funding	$0.00	$0.00
Total State	**$22,474.73**	**$22,474.73**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$22,474.73**	**$22,474.73**

Grant 7030038: Neck Lake Hydroelectric Project

Project Scope: The grant was cancelled before grant award. The grantee decided to terminate the project due to its small size and increased costs of licensing, permitting, and design requirements associated with falling under FERC jurisdictional licensing.

Project Status: The grant was cancelled before grant award. The grantee decided to terminate the project due to its small size and increased costs of licensing, permitting, and design requirements associated with falling under FERC jurisdictional licensing.

Pelican Hydroelectric Upgrade Project

Grantees	City of Pelican (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10325

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	688	Pelican Hydroelectric Upgrade Project	7040040	407076	Construction	7/1/11	12/31/14	Closed

Grant 7040040: Pelican Hydroelectric Upgrade Project

Project Scope: The City of Pelican proposes completing construction of a 650 kW run-of-river hydro project. Its completion will fully implement a six-year energy infrastructure upgrade project within the community of Pelican. Design and construction has been supported by the Denali Commission through an AEA-managed rural power system upgrade project. Other energy-related projects completed recently in Pelican by AEA include a bulk fuel plant and a new diesel powerhouse. The hydro project is a rebuild of the 1940's era hydro project that supplied a fish processing facility and the community. With current activity on the site continuing using federal funds, the project is now approximately 65% complete. It is scheduled for startup in 2012.

The first phase of the hydroelectric project consisted of replacement of a new dam wing wall and intake structure, renovation and rebuild of the 2 turbine/generators (a 550 kW Barber turbine/Kato generator and a 100 kW Cornell turbine/generator) and site work for the replacement penstock.

Among the items to be completed within this scope include: (1) replacement of a failed wooden flume and penstock with a new HDPE penstock, (2) install a new surge tank, (3) provide instrumentation and controls to upgrade hydro powerhouse for improved efficiency and reliability, (4) provide station power for the intake area, (5) provide communications between diesel plant and hydro powerhouse and (6) provide for excess hydropower to be used for space heating via a dispatchable electric boiler. The construction will continue to use a combination of force account and contracted services under the supervision of a construction manager.

AEA has provided management assistance for the recently completed City of Pelican Bulk Fuel project, the RPSU project and the first phase of the hydroelectric upgrade project. The City of Pelican has requested AEA to continue to provide management assistance through completion of the hydroelectric project.

Project Status: Final construction activities are nearing completion for this AEA managed project. It is anticipated the final work will be completed in summer 2014.

The Pelican hydro project was started up in March 2013 and has provided virtually all power required by the City. The only exceptions were a few short-term outages and the operation of the diesels required for ensuring reliability. It is currently being optimized.

Since the hydro came on-line, AEA has refined the operation of the electric boiler at the school to optimize frequency control and reduce fuel consumption at the City. This process still requires some final programming of the dispatchable boiler controls, which is expected to be completed this winter. Additionally, we are installing pipe clamp sleeves on the penstock. The most significant remaining work is to address erosion at the penstock caused by unanticipated artesian springs in the hillside above the penstock. These became most evident in a recent storm event which dumped 5inches of rain on Pelican in 24 hours.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,893,253.19	$1,893,253.19
Other State Funding	$19,871.15	$19,871.15
Total State	**$1,913,124.34**	**$1,913,124.34**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,913,124.34**	**$1,913,124.34**

Ruth Lake Hydro

Grantees	City of Petersburg (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10041

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	38	Ruth Lake Hydro Reconnaissance	2195415	407047	Feasibility	8/20/08	12/31/09	Closed

Grant 2195415: Ruth Lake Hydro Reconnaissance

Project Scope: The project is to complete Phase I of the Ruth Lake Hydroelectric Project, which is a conventional hydropower project located in an unincorporated area northeast of the City of Petersburg. Petersburg Municipal Power & Light (PMPL) prepared and filed an Application for Preliminary Permit with the FERC on February 3, 2009 and an Application for License is anticipated in 2011.

Development of hydroelectric power at the site will include construction of a reservoir, lake tap/power conduit, arch dam, unlined tunnel, power penstock, power plant, tailrace, access roads, and transmission line segments.

Power generated by the project will provide the interconnected Southern Southeast Alaska regional utilities with increased system reliability; replace current dependency on diesel generation; and enable regional utilities to meet the increasing demand for electricity.

The overall project phases include Phase I - Pre-feasibility and Application for Preliminary Permit ($205,000), Phase II - Application for License and FERC Licensing Proceeding ($2,520,000), Phase III - Final Design and Permitting ($5,820,000), and Phase IV - Construction and Project Startup ($101,430,000).

Project Status: The City conducted a feasibility study of Ruth Lake with this grant. The report is complete and the project is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$155,702.27	$155,702.27
Other State Funding	$0.00	$0.00
Total State	**$155,702.27**	**$155,702.27**
Required Local Match	$44,556.27	$44,246.73
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$200,258.54**	**$199,949.00**

Schubee Lake Hydroelectric Project

Grantees	Alaska Power Company (Utility-Private)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10243

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	630	Schubee Lake Hydroelectric Project Feasibility Study	7040067	407081	Feasibility	7/1/11	6/30/13	Closed

Grant 7040067: Schubee Lake Hydroelectric Project Feasibility Study

Project Scope: The project is to complete a reconnaissance study of a hydroelectric project on Schubee Lake to serve the interconnected communities of the Haines-Skagway area. Tasks include: stream gauge installation and flow monitoring, resource assessment, land use, permitting and environmental analysis, conceptual design, cost estimating, and economic analysis.

Project Status: A feasibility report was completed and the project was found to be uneconomic. The project is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$74,191.47	$74,191.47
Other State Funding	$0.00	$0.00
Total State	**$74,191.47**	**$74,191.47**
Required Local Match	$18,935.06	$18,935.06
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$93,126.53**	**$93,126.53**

Takatz Lake Hydroelectric

Grantees	City and Borough of Sitka (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10004

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	1	Takatz Lake Hydroelectric Feasibility	2195418	407049	Feasibility	8/20/08	6/30/15	Active

Grant 2195418: Takatz Lake Hydroelectric Feasibility

Project Scope: The goal is to determine feasibility of connecting City & Borough of Sitka and other communities in Southeast Alaska through a hydroelectric power plant located on Takatz Lake, Alaska. Application to FERC was submitted in June 2008, and a preliminary permit was issued on September 19, 2008 (FERC Project Number 13324-000). If the project proves feasible, then construction is anticipated to be completed in the 2020 to 2022 timeframe.

Project Status: The Alaska Energy Authority (AEA) has reviewed the final report prepared by Currents Consulting titled Takatz Lake Hydroelectric Development Appraisal Study Report, dated October 2014 and found it satisfied the requirements of the grant. AEA authorized continuation of stream gauging data collection at the site by the USGS through the end of 2015 in support of future development and regional interests. No further action is expected until there is significant need for additional energy.

The Grantee's July 2015 report indicated that remote site equipment had been removed including the stream gauges installed on the north fork of Takatz Creek were removed as requested by AEA. The grantee also coordinated with the USGS on the final dispostion of those stream gauges. No further work is expected on the project. There is approximately 156k in unexpended grant funds according to the July 2015 report.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$1,844,354.77
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$1,844,354.77**
Required Local Match	$231,768.00	$231,768.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,231,768.00**	**$2,076,122.77**

Thayer Lake Hydropower Project

Grantees	Kootznoowoo, Inc. (Independent Power Producer)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10293

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	670	Thayer Lake Hydropower Project	7040038	407074	Final Design	7/1/11	3/31/17	Active
5	825	Thayer Lake Hydropower Development Transmission Project	7050825	407074	Construction	7/1/12		Active

Grant 7040038: Thayer Lake Hydropower Project

Project Scope: The project is to complete pre-construction work to develop the Thayer Lake Hydropower Project (TLHP). The project is a run-of-river hydropower project on Thayer Creek approximately 6 miles north of Angoon. Thayer Creek flows out of the 64 square mile Thayer Lake at a gentle grade through a broad forested valley, then steepens for 6,800 feet through a narrow forested canyon and finally flattens again for 2000 feet before flowing into Chatham Strait. The development will tap the energy potential in the steep section of the creek and will avoid impact on anadromous fish that use the lower portion of the creek. Though the final concept remains to be identified, Kootznoowoo is funded to complete permitting, preliminary and final design for the hydropower project.

KI received a grant of $1,110,500 in August 2009 from the U.S. Department of Energy for hydropower development on Thayer Creek. It will be used as match for preconstruction activities to be completed with this AEA grant of $1,060,500.

Preliminary design, permitting and final design will be conducted with the available grant funds, with the intent that the project is construction ready at the completion of all grant activities. Additionally, special conditions associated with this grant include the following provisions to be completed prior to releasing any AEA grant funds: KI and IPEC must provide a written joint report acceptable to AEA that documents the integration of project design and operation with the needs of the existing IPEC system, the design specifying the power output capacity and monthly energy production from the new Thayer Lake Hydropower project, and demonstrating expected amounts of diesel consumption from existing diesel fired generation.

Project Status: After performing significant design work including costly geotechnical investigations the overall project concept has been discarded as too costly. This realization came about in early 2015. After another review of project concept options two emerged as potentially viable with the goal of constructing a project that could meet the present day demand in Angoon. A grant revision has been agreed upon but it is apparent that there are not enough funds remaining in the grant to complete all the permitting and final design work required. In Sep 2015 a new grant amendment was drafted that refocused work on completing a technical feasibility study for the two project options and then following up with revision of permits and completing a 35% design. It is expected that final design will occur in the construction phase.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,060,500.00	$824,630.24
Other State Funding	$0.00	$0.00
Total State	**$1,060,500.00**	**$824,630.24**
Required Local Match	$1,142,856.00	$883,995.94
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,203,356.00**	**$1,708,626.18**

Grant 7050825: Thayer Lake Hydropower Development Transmission Project

Project Scope: The proposed grant would fund construction of the Thayer Lake hydroelectric project, including the transmission connection to the IPEC managed power system at the City of Angoon. The grant remains in the planning stages.

Project Status: The Round V grant has not been issued and is pending completion of earlier grant funded preconstruction activities. The appropriated Renewable Energy Fund budget for this project is $7,000,000.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$7,000,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$7,000,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$7,000,000.00**	**$0.00**

Triangle Lake Hydroelectric Project

Grantees	Metlakatla Indian Community (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10126

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	655	Triangle Lake Hydroelectric Project Feasibility	7040074	407085	Feasibility	7/1/11	6/30/16	Active

Grant 7040074: Triangle Lake Hydroelectric Project Feasibility

Project Scope: The funded project tasks include establishment of a local project office, preparation of a feasibility study, completion of applicable permitting, a plan of integration of the proposed hydro plant with other energy generation, utility agreements for power sales, an economic feasibility study, 35% design documents, final design documents and a construction cost estimate.

Project Status: This grant was to pursue as far as funding would allow, the following: 1) establishing a Project Management Office; 2) preparing a project development plan; 3) preparing a plan of operations, maintenance and ownership; 4) 35% design documents & cost estimates; 5) final design documents & cost estimates; and 6) completed permits. The grant recipient Metlakatla Indian Community (MIC) arranged for SEAPA to prepare an initial study on hydro potential of Annette Island (consultant was McMillen, report 6/2014). MIC then arranged for DHittle & Associates to review the report (11/10/2014). This appears to be the end of MICs efforts as of early 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$500,000.00	$455,588.82
Other State Funding	$0.00	$0.00
Total State	**$500,000.00**	**$455,588.82**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$500,000.00**	**$455,588.82**

Whitman Lake Hydro

Grantees	Ketchikan Public Utility (Utility-Government), City of Ketchikan (Utility-Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10040

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	37	Whitman Lake Hydro Construction (reconnaissance)	2195441	407046	Final Design	8/20/08	12/31/11	Active
4	620	Whitman Lake Hydroelectric Project	7040044	407046	Construction	7/1/11	12/31/14	Closed

Grant 2195441: Whitman Lake Hydro Construction (reconnaissance)

Project Scope: The Ketchikan Public Utilities - Electric Division (KPU-Electric) received a license to construct from the Federal Energy Regulatory Agency (FERC) on March 17, 2009 for the Whitman Lake Hydroelectric project. The KUP-Electric will use the grant funds to prepare final design documents for the Whitman Lake Hydroelectric project. Grant funds will also be used to complete all remaining activities needing to be accomplished before construction bidding. This includes preparation of final drawings and specifications for the project, review and approval of these documents by the FERC Regional Office and preparation of a final construction cost estimate and project construction schedule. The project design work will be divided into three separate contracts; site preparation work, equipment procurement, and general civil engineering work.

Project Status: The project was completed in December 2014 & closed out. Some warranty work will extend through 2015.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,300,000.00	$1,300,000.00
Other State Funding	$0.00	$0.00
Total State	**$1,300,000.00**	**$1,300,000.00**
Required Local Match	$320,000.00	$320,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,620,000.00**	**$1,620,000.00**

Grant 7040044: Whitman Lake Hydroelectric Project

Project Scope: Project is to install 4.6 MW of generating capacity at an existing dam, supporting near term load demand increases in the Ketchikan area and displacing diesel generation as the existing Swan-Tyee resources become fully utilized. Ketchikan Public Utility (KPU) will also replace the aging water supply system of the Southern Southeast Regional Aquaculture Association Whitman Lake Hatchery, providing increased water quality, reliability and redundancy to a facility that is critical to the region's commercial fishing, seafood processing and sportfishing industries. The project will be located approximately four miles from the City of Ketchikan. It will generate up to an average of 16,000,000 kWh displacing up to 1,100,000 gallons of diesel fuel annually. Penstocks will lead to a new powerhouse containing two hydro turbine-generators: Unit 1, at 3.9 MW will generate power that would otherwise be spilled; Unit 2, at 0.7 MW will generate power from the water delivered to the fish hatchery located adjacent to the hydroelectric project.

Project Status: At the beginning of 2014, construction was underway. Fabrication of valves, turbines and generators in progress and testing of units had commenced. Switchgear had been delivered to site. Powerhouse, excavation for penstock and access road, concrete foundation for new hatchery head tank, demolition and replacement of valves at dam were completed. KPU had begun installing conduit for transmission and communication, and powerhouse electrical system. KPU had submitted applications for construction of the Achilles Diversion at an alternate site and is awaiting approvals from FERC, USFS, DNR, and ACOE. The project was completed in December 2014 & closed out. Some warranty work will extend through 2015

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$700,000.00	$700,000.00
Other State Funding	$8,025,000.00	$8,025,000.00
Total State	**$8,725,000.00**	**$8,725,000.00**
Required Local Match	$17,500,000.00	$17,933,205.24
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$26,225,000.00**	**$26,658,205.24**

Wrangell Electric Vehicle Feasibility Study

Grantees	City and Borough of Wrangell (Local Government)
Technology Type	OTHER
Region	Southeast
AEDG Project Code	10300

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	624	Wrangell Electric Vehicle Feasibility Study	7040070	407086	Feasibility	7/1/11	6/30/13	Closed

Grant 7040070: Wrangell Electric Vehicle Feasibility Study

Project Scope: The City & Borough of Wrangell will perform a recon study of potentially using electric and PHEV vehicles to utilize excess hydro from the SEAPA grid. Tasks include assessing the various types of vehicles most appropriate for use in southeast Alaska and their costs; review of codes & standards and any permitting requirements; evaluate impacts on the electric grid; study 'smart grid' and demand-side management applications associated with battery charging; and completing economic analysis of purchasing and operating electric and/or PHEVs. Analyses and findings will be documented in recon report.

Project Status: The grantee's consultant completed the feasibility report. AEA reviewed and provided comments. Awaiting finalization of final feasibility report.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$25,000.00	$25,000.00
Other State Funding	$0.00	$0.00
Total State	**$25,000.00**	**$25,000.00**
Required Local Match	$428.48	$428.48
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$25,428.48**	**$25,428.48**

Kake-Petersburg Intertie

Grantees	Kwaan Electric Transmission Intertie Cooperative (Utility-Cooperative)
Technology Type	TRANSMISSION
Region	Southeast
AEDG Project Code	10032

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	29	Kake-Petersburg Intertie Final Design	2195414	409019	Feasibility	8/20/08	6/30/16	Active

Grant 2195414: Kake-Petersburg Intertie Final Design

Project Scope: The Kwaan Electric Transmission Intertie Cooperative, Inc. (KWETICO) will use the Round I grant funds from the Renewable Energy Fund to continue environmental documentation and permitting work for the Kake-Petersburg Transmission Line project. This work was begun with a legislative grant to the Southeast Conference and this grant will continue these efforts in conjunction with work the Authority is also directing to complete the federal NEPA processes, permitting, and final design.

Initially, the applicant, along with the State Department of Transportation (AKDOTPF), proposed to build a road and 69-kv transmission line to connect the community of Kake with Petersburg. Funding for the road portion of the project has not been obtained; however, the grantee wants to continue the intertie project.

The Kake-Petersburg intertie will provide an interconnection between the Kake electric distribution system and the transmission system owned by Southeast Alaska Power Agency (SEAPA) and allow Kake to be served by SEAPA provided hydroelectric power. The Regulatory Commission of Alaska (RCA) regulated distribution utility Inside Passage Electrical Cooperative (IPEC) will continue to provide retail electricity to Kake ratepayers. IPEC will negotiate wholesale power purchase agreements with SEAPA. Savings from obtaining SEAPA power (presently being sold to SEAPA distribution utility customers at a wholesale rate of $0.068/kWh) will be passed onto Kake ratepayers by IPEC.

Grant funds will allow KWETICO to assist IPEC, SEAPA, the Southeast Conference, AEA, and other affected parties to identify the best ownership form for the intertie, and who will be responsible for maintenance and operations of the transmission line and who will be responsible for the design and construction of the intertie. These arrangements will be defined in a participants' agreement between KWETICO, IPEC, SEAPA, and other affected parties, that KWETICO agrees to facilitate in cooperation with AEA. KWETICO agrees to author and sign an appropriate participants' agreement for the project. Completion of the participants' agreement, identifying an owner for the intertie and determining a preferred route acceptable to stakeholders and the Authority will be the first milestone for this grant. Grant funds of up to $500,000 may be used to complete these tasks. Deliverables will include a fully-signed participants' agreement by all impacted parties identifying an owner for the intertie and a preferred route agreed to by all parties impacted. At a minimum the following parties shall be signatory to the agreement: Cities of Kake and Petersburg, SEAPA, IPEC, Southeast Conference and the Organized Village of Kake. KWETICO shall undertake all reasonable efforts to complete these tasks by December 31, 2010.

KWETICO will accomplish all necessary tasks to facilitate the federal NEPA process for the project, and accomplishment of design and permitting. It is understood that AEA has additional legislative appropriation funding to assist in bringing the project to completion of environmental analysis, permitting and design, and KWETICO will coordinate with AEA in its expenditure of grant funds for the project.

KWETICO will undertake two other specific tasks under this grant that will support the ongoing federal NEPA process for the project, and provide additional, needed input for a second federal register NEPA notice for the project as follows:

1. Work with SEAPA as a potential owner of the transmission line, to evaluate the northern intertie route and the southern routes have been analyzed in recent feasibility studies, to identify a preferred route that can be supported by SEAPA, IPEC, local governments in Kake and Petersburg, and Petersburg Municipal Power and Light, and others. Work with the US Forest Service to include this in the planned second Federal Register notice planned by the US Forest Service.

2. Work with SEAPA and others to develop an approach for ownership of the transmission line, and the means to reasonably recover the costs of ownership, operations and maintenance, that is satisfactory to AEA, local governments of Kake and Petersburg, and the ratepayers of Kake and SEAPA. Facilitate the naming of the project advocate in the planned second Federal Register notice planned by the US Forest Service.

Grant/Project management will be provided by the Southeast Conference, which has historically facilitated KWETICO's efforts in Southeast Alaska and has a Memorandum of Understanding with KWETICO for such cooperative efforts. A portion of the grant

funds will be allocated to Southeast Conference for management of the work under this grant. Southeast Conference will submit cost reimbursement invoices through KWETICO to the Alaska Energy Authority, for both Southeast Conference in-house expenses and expenditures it has made on behalf of KWETICO in the discharge of its responsibilities under this grant.

Project Status: In permitting. Public meetings to comment on the DEIS were held in Kake & Pertersburg in January 2015. The final ROD is expected in early 2016. SEAPA then anticipates moving into Final Design, for a shovel ready project. IPEC would like to divert some of the KPI funding toward a small hydroelectric project on Gunnuck Creek. There is no construction funding yet for KPI. A recent grant amendment was issued calling for a participant meeting after the ROD has been issued.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$2,990,000.00	$1,377,348.10
Other State Funding	$0.00	$0.00
Total State	**$2,990,000.00**	**$1,377,348.10**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,990,000.00**	**$1,377,348.10**

Metlakatla-Ketchikan Intertie

Grantees	Metlakatla Indian Community (Local Government)
Technology Type	TRANSMISSION
Region	Southeast
AEDG Project Code	10023

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	20	Metlakatla-Ketchikan Intertie Design and Permitting	2195429	409020	Final Design	8/28/08	12/31/16	Active
4	656	Metlakatla-Ketchikan Intertie	7040068	409020	Construction	7/1/11	6/30/16	Active

Grant 2195429: Metlakatla-Ketchikan Intertie Design and Permitting

Project Scope: The Metlakatla Indian Community (MIC) through their electric utility Metlakatla Power and Light will use the grant funds to complete the design of the 34.5kV transmission line interconnecting the electric systems of Metlakatla Power & Light (MP&L) and Ketchikan Public Utilities (KPU). The proposed transmission line will follow an existing road and require a submarine cable to interconnect the Metlakatla electric system with the Ketchikan electric system. In addition, grant funds will be used to complete design upgrades to the various control systems of the Metlakatla electric system (including the governor and SCADA systems). These upgrades are necessary to accommodate the connection between the Metlakatla and Ketchikan electric systems.

Since July, 2009 the Metlakatla Indian Community has moved forward with this project by hiring a contractor to work on the designs needed and to further refine the specifications for the submarine crossing that will be needed to interconnect the two electric utilities.

Project Status: MIC has requested assistance from AEA in managing this grant. Progress has been stalled pending MIC letter which would address power sales, project management of grant, ownership and O&M responsibilities for the intertie. As of the end of 2014 MIC has contracted with HDR for project management services.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$820,000.00	$500,860.53
Other State Funding	$0.00	$0.00
Total State	**$820,000.00**	**$500,860.53**
Required Local Match	$160,833.00	$64,561.51
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$980,833.00**	**$565,422.04**

Grant 7040068: Metlakatla-Ketchikan Intertie

Project Scope: The Metlakatla Indian Community (MIC) through their electric utility Metlakatla Power and Light will use the grant funds to complete the design of the 34.5kV transmission line interconnecting the electric systems of Metlakatla Power & Light (MP&L) and Ketchikan Public Utilities (KPU). The proposed transmission line will follow an existing road and require a submarine cable to interconnect the Metlakatla electric system with the Ketchikan electric system. In addition, grant funds will be used to complete design upgrades to the various control systems of the Metlakatla electric system (including the governor and SCADA systems). These upgrades are necessary to accommodate the connection between the Metlakatla and Ketchikan electric systems.

The grant tasks included in the draft award document include setting up a local project office, completion of all permits and final design, negotiation of applicable power sales agreements, and preparation of an economic feasibility study and a construction cost estimate.

Project Status: SEAPAs consultant McMillen prepared a report on hydro potential of Annette Island, and an MIC sponsored review was provided by D Hittle & Associates (along with HDR, EPS, Metlakatla F&W). Regarding the intertie, MIC awarded a

PM contract to HDR, however, no additional work has been completed. MIC anticipates that the Annette Island study will serve as the basis for the design of MKI. The intertie has been constructed except for the submarine section.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$1,180,000.00	$51,410.70
Other State Funding	$0.00	$0.00
Total State	**$1,180,000.00**	**$51,410.70**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,180,000.00**	**$51,410.70**

North Prince of Wales Island Intertie Project

Grantees	Alaska Power and Telephone (For Profit Entity)
Technology Type	TRANSMISSION
Region	Southeast
AEDG Project Code	10026

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	23	North Prince of Wales Island Intertie Project	2195360	409018	Construction	6/1/08	12/31/15	Active

Grant 2195360: North Prince of Wales Island Intertie Project

Project Scope: North Prince of Wales Island Intertie Project is to construct a line extension to the communities of Coffman Cove and Naukati Bay, placing these communities on the Prince of Wales Island (POW) electric grid, which is supplied with renewable energy from two hydroelectric projects. The total line is to be 48 miles (Coffman Cove = 37 miles and Naukati Bay = 11 miles) of overhead 4/0 ACSR three-phase 34.5 kV line with a 1/0 ACSR neutral conductor on single pole wood structures. This line extension will come off the existing 34.5 kV line between Klawock and Thorne Bay, near Control Lake.

Project Status: The line was energized to Coffman Cove on September 2, 2011. Savings are reflected starting from that date. Construction has slowed this reporting period, permitting is on-going but was delayed for the 12 miles of transmission to Naukati.

The line to Naukati was energized on January 27, 2015 at noon. Work has continued throughout this calendar year on stringing fiber optic cable, setting transformers, and resetting poles.

This grant may need to be extended due to DOT road work.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$3,752,181.00	$3,177,086.54
Other State Funding	$2,402,838.00	$2,402,838.00
Total State	**$3,752,181.00**	**$3,177,086.54**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$2,402,838.00	$2,402,838.00
Total Project Costs	**$6,155,019.00**	**$5,579,924.54**

Snettisham Transmission Line Avalanche Mitigation

Grantees	Alaska Electric Light & Power Company (Utility-Cooperative)
Technology Type	TRANSMISSION
Region	Southeast
AEDG Project Code	10313

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	672	Snettisham Transmission Line Avalanche Mitigation	7040039	409030	Construction	7/1/11	12/31/12	Closed

Grant 7040039: Snettisham Transmission Line Avalanche Mitigation

Project Scope: The project is to provide avalanche protection to six aluminum towers in the Snettisham transmission line. This will greatly improve reliable delivery of a hydroelectric resource and lessen the financial impacts of diesel fuel generation. The Snettisham Transmission Line extends 43.5 miles to the southeast of Juneau, Alaska and provides the only power connection to this community's primary hydroelectric resource. There are multiple areas of avalanche concern along this line; however, the highest priority is a section from 3 to 5 miles from the Snettisham Hydroelectric powerhouse.

The Snettisham Hydroelectric Power Plant is a State owned project administered by the Alaska Industrial Development and Export Authority (AIDEA) and operated by AELP. This is a 78 MW power plant serving the primary electrical needs for Juneau. It is connected through a single 43.5 mile 138 KV transmission line in very rugged coastal mountain terrain. The line is located on federally owned US Forest Service (USFS) lands of the Tongass National Forest. In 2008 and 2009, this line was hit by massive avalanches that accounted for 66 days of hydroelectric interruption. The community of Juneau was placed in economic shock when electric service rates rose nearly five hundred percent to $0.52/kWh in 2008 and $0.24/kWh in 2009 due to the cost associated with using 3,800,000 gallons of diesel fuel. The total fuel, repair, and mitigation efforts have exceeded $17.4M since 2008, in addition to $400,000 in annual forecasting and control work.

A conceptual design report was completed in 2010 for the six towers of highest avalanche risk. The report was based upon experience and engineering solutions gained during the 2008 and 2009 emergency repairs to other sections of the transmission line from avalanches. It outlines $4,019,600 in construction costs needed to complete the improvements.

AELP proposes to complete design and construct the mitigation improvements to the towers in two phases over a two-year period, from 2011-2012. Because grant funds can only reimburse for expenses incurred after July 1, 2011, there will be some expenses incurred which will be ineligible for these funds. Phase 1 work will include the 2011 design and construction of the replacement of tower 3/4 and structural modifications to existing towers 4/1 and 4/2 for an estimated $1,562,000. Phase 2 work will include the 2012 design and construction of a large diversion structure above tower 4/5 similar to the one constructed in 2009 above tower 4/6. There would also be a smaller diversion structure constructed above tower 4/4. The total estimated cost of this phase is $2,457,600.

AELP will be responsible for the project costs incurred before the grant eligibility date of July 1, 2011. Their match to this grant will provide the balance of funding needed to complete the two phases of work, estimated at $2,019,600.

To date, AELP has conducted the following studies: LIDAR survey, avalanche potential force models, biological assessments, geotechnical considerations and conceptual design. A USFS amended permit was obtained covering the scope of this construction. AELP does not anticipate that additional permitting would be necessary other than agency scoping/advisory meetings.

Project Status: The project is to protect the Snettisham transmission line that carries the majority of Juneau-Douglas area power from failing because of avalanches. Two transmission towers will be protected with avalanche diversion structures. To date the foundations are completed for both diversion structures (4-4 & 4-5) and the heavy equipment required for the foundation preparation have been removed. The steel has been flown to the sites and the steel is being welded together. The project has had approximately four weeks of weather delays. The diversion structure for tower 4-5 should be completed by winter. Because of weather delays and materials costs expenses have been higher than budgeted.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,000,000.00	$2,000,000.00
Other State Funding	$0.00	$0.00
Total State	**$2,000,000.00**	**$2,000,000.00**
Required Local Match	$500,000.00	$500,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$2,500,000.00**	**$2,500,000.00**

Biomass Heat for Minto Community Buildings

Grantees	Village of Minto (Local Government)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10446

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1032	Biomass Heat for Minto Community Buildings	7071032	402128		7/1/14	12/31/16	Active

Grant 7071032: Biomass Heat for Minto Community Buildings

Project Scope: Project includes design and construction of a cordwood fired central heating system to serve Minto's Multi-Purpose Building/Lodge and the Health Clinic.

Project Status: Minto has elected to partner with ANTHC for the design and construction of this project. The grant is waiting a CPA agreement between Minto and ANTHC.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$274,800.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$274,800.00**	**$0.00**
Required Local Match	$28,800.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$303,600.00**	**$0.00**

Chalkyitsik Biomass Central Heating

Grantees	Chalkyitsik Village Council (Local Government)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10190

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	292	Chalkyitsik Biomass Central Heating Conceptual Design	2195451	402041	Feasibility	7/1/09	6/30/12	Closed

Grant 2195451: Chalkyitsik Biomass Central Heating Conceptual Design

Project Scope: The project as described in the application is a wood energy district heating project located in Chalkyitsik, Alaska for two groups of buildings: District Heat 1: the school, school housing and water system; District Heat 2: the washeteria/water plant and Village/Tribal Office. Although the full project will be a two-year project, the current grant funding is for completion of the feasibility study and conceptual design of the proposed boiler systems only. A level one feasibility and reconnaissance of forest wood resources have been performed in the summer of 2008 under a Department of Energy Tribal energy grant for the Yukon Flats through Council of Athabascan Tribal Governments (CATG).

Project Status: The project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$32,500.00	$32,500.00
Other State Funding	$0.00	$0.00
Total State	**$32,500.00**	**$32,500.00**
Required Local Match	$9,103.00	$9,103.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$41,603.00**	**$41,603.00**

City-Tribe Biomass Energy Conservation

Grantees	City of Tanana (Local Government)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10268

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	476	City-Tribe Biomass Energy Conservation	7030022	402048	Construction	7/1/10	6/30/13	Closed

Grant 7030022: City-Tribe Biomass Energy Conservation

Project Scope: The City of Tanana in collaboration with the Tanana Tribal Council applied for the Round III grant from the Renewable Energy Fund to install a biomass heating facility for the Assisted Living Facility for elders in Tanana, the Tanana Tribal Offices and the Internet high tech training center in Tanana. Since the application was submitted in 2009, the City of Tanana has also been awarded $1,540,000 from the US Department of Energy (DOE) to conduct energy efficiency activities in the community and to design and construct biomass heating systems for the school, tribal complex, water/sewer system, fire hall, and city offices.

In order to more efficiently complete the design and construction of all of the biomass projects, the City of Tanana requested authority to manage all of the work as one project, utilizing the same design and construction services. DOE funding will provide for the energy efficiency improvements, the design of all of the biomass systems, and the purchase of equipment and construction materials. The Renewable Energy funds will provide for labor and fringe benefits for the construction of the biomass systems.

The scope of the original Renewable Energy Fund grant application, the design and construction of a biomass heating system for the Tanana Assisted Living Facility, the Tanana Tribal Offices, and the Internet high tech training center will be completed as part of the larger project, thus satisfying the intent of the Renewable Energy Fund grant.

The City of Tanana will oversee the construction and implementation of this project; the Tribal Council will provide in-kind and collaborative oversight of the project.

Prerequisites for Renewable Energy grant reimbursement are acceptance of Resource Management Plan, Final Business Plan - including wood supply projections, 95% Engineering Design Drawings, Fire Marshal Approval, and any other required permits.

Project Status: The project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$412,641.32	$412,641.32
Other State Funding	$0.00	$0.00
Total State	**$412,641.32**	**$412,641.32**
Required Local Match	$95,723.00	$95,723.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$508,364.32**	**$508,364.32**

Fort Yukon Central Wood Heating

Grantees	Gwitchyaa Zhee Utility Company (Utility-Private)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10034

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	31	Fort Yukon Central Wood Heating Design	2195405	402040	Final Design	8/20/08	12/31/14	Active
3	445	District Wood Heating in Fort Yukon	7030021	402047	Construction	7/1/10	6/30/17	Active

Grant 2195405: Fort Yukon Central Wood Heating Design

Project Scope: This project has multiple funding sources. The following summarizes the scope of the project development and funding sources: Project Development Tasks to be completed are (based on revised information submitted June 17, 2009): Task One: Project Initiation and Dynamic Planning - $0. Completed Task Two: Schematic Design & Oversight (Completed): $30,000 Renewable Energy Fund $40,000 Council of Athabascan Tribal Governments (CATG) grant from DOE totaling $70,000 An initial level 2 feasibility study was conducted by Efour Engineering to determine a conceptual design and feasibility for district heating and heating of key other commercial buildings. This feasibility determined that chip systems were the best all- around approach. The next step is to develop a specific schematic design by a district heating engineering specialist and develop specific parameters for a final engineered design build construction bid process. Task Three: Final Design: $100,000 Renewable Energy Fund $40,000 CATG grant from DoE Totaling $140,000 Final design will be a design build document that will complete the design phase. This will be the plan that the three planned heating systems will be built from including the CATG Clinic, the downtown district heat system and boilers for the VoTech Campus. An Alaskan based engineering firm with rural Alaska design and build experience will be selected. Task Four: Permitting Process: $20,000 Renewable Energy Fund $0 CATG grant from DoE Totaling $20,000 Boiler permitting at the midscale 2-8 MMBTU/h has essentially not been done in rural interior Alaska. An experienced biomass boiler engineer will complete the process in conjunction with the State of Alaska. Task Five: Land ownership agreements and donations: $5,000 Renewable Energy Fund $0 CATG grant from DoE Totaling $5,000 The project is anticipating the donation of land from GZ Corporation for a wood yard, a building and land from the Fort Yukon School District and an old Quonset hut for a shop and wood chip storage from the federal government. The placing of boilers and piping in various locations will require coordination with owners and may require easements. This task will negotiate, create and finalize all necessary agreements. Task Six: Environmental Analysis: $15,000 Renewable Energy Fund $0 CATG grant from DoE Totaling $15,000 Both AEA and DoE require a complete analysis on the potential positive and negative environmental impacts. An analysis following the NEPA Environmental Analysis process will be prepared on boiler installations and a general analysis on forest management impacts. Task Seven: Power Sales Agreements: $5,000 Renewable Energy Fund $0 CATG grant from DoE Totaling $5,000 Each heating customer in the heating district will be required to complete a BTU purchase agreement from the newly formed heat utility. Under this task, the utility will develop a purchase price for BTUs that will reflect the cost of production plus operations, maintenance, and profit. Long-term agreements will be developed tied to the cost of fuel oil with escalation and reductions clauses. Task Eight: Project Management, reporting and technical assistance: $35,000 Renewable Energy Fund $35,000 CATG grant from DoE Totaling $70,000 Project manager will coordinate the entire project among the various organizations and contractors. He will be responsible for report writing to AEA and DoE Tribal Energy. Contractor will also give technical support on the development of a forestry program at CATG as well as support the initiation of the Wood Energy Utility under GZ Corporation.

Project Status: The Environmental Assessment has been completed clearing the way for the development of the final design. Harvest equipment has been purchased, so that initial wood harvesting can take place as soon as the harvest plan is developed. CATG is leading the development of the harvest plan, and staffing changes have delayed the harvest plan completion.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$210,000.00	$210,000.00
Other State Funding	$0.00	$0.00
Total State	**$210,000.00**	**$210,000.00**
Required Local Match	$140,656.47	$140,656.47
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$350,656.47**	**$350,656.47**

Grant 7030021: District Wood Heating in Fort Yukon

Project Scope: This project will complete the construction of the chip-fired biomass heating system in conjunction with the replacement of the GZ diesel power plant

Project Status: Construction of the gravel pad began fall of 2015. Construction of the building and installation of the boiler and district heating pipes is schedule for this construction season. Operation is expected late 2016 or early 2017.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$2,318,255.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$2,318,255.00**	**$0.00**
Required Local Match	$1,290,000.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,608,255.00**	**$0.00**

Huslia Water System & Clinic Wood Boiler Project

Grantees	Huslia Traditional Council (Government Entity - Tribal Council)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10340

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	821	Huslia Water System & Clinic Wood Boiler Project	7050821	402119	Construction	7/1/12	12/31/15	Active

Grant 7050821: Huslia Water System & Clinic Wood Boiler Project

Project Scope: This project will deliver feasibility study and final design, including system design (must include metering and monitoring equipment and instrumentation), comprehensive fuel wood inventory and supply plan for community of Huslia, Alaska. In order for funding to be released and made available for final design, AEA must accept the feasibility report.

Originally, the Huslia Traditional Council in collaboration with ANTHC proposed the design and construction of a biomass heating system for the water treatment facility and the clinic. The project is estimated to replace 21,736 gallons of fuel oil. The water treatment plant operator would be responsible for the operation and maintenance of the wood heating system. The project will use approximately 254 cords per year.

However, AEA had some concerns about the wood supply sustainability, the wood supplier, and the lack of comprehensive feasibility study to evaluate the fuel availability and alternatives. Therefore, AEA recommend $50,000 for completion of feasibility and final design, including fuel wood inventory and supply plan with the requirement that AEA accept the feasibility report before funding is made available for final design.

Project Status: This project is complete. The community is pursuing construction funding.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$50,000.00	$29,581.88
Other State Funding	$0.00	$0.00
Total State	**$50,000.00**	**$29,581.88**
Required Local Match	$2,470.00	$2,470.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$52,470.00**	**$32,051.88**

Interior Regional Housing Wood Energy

Grantees	Interior Regional Housing Authority (Government Entity - Housing Authority)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10056

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	54	Galena Wood Heating Construction	2195443	402037	Construction	7/1/09	7/31/09	Closed

Grant 2195443: Galena Wood Heating Construction

Project Scope:

Interior Regional Housing Authority (IRHA) proposed the installation of a biomass heat source and solar electricity source in the Yukon-Koyukuk Assisted Living Center, a NAHSDA, Denali Commission, ICDBG, FHLB, and AHFC funded project that would provide a 9 unit housing complex for the elderly of the Yukon Koyukuk Region. The design included a multi-purpose area, office space, and dormitory-type housing for transient village health care workers.

Project Status: Funds were not used. This project did not move forward.

Kaltag Biomass Hydronic Heating

Grantees	Yukon-Koyukuk School District (Local Government)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10160

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	260	Biomass Hydronic Heating	2195474	402045	Feasibility	7/1/09	12/31/10	Closed

Grant 2195474: Biomass Hydronic Heating

Project Scope: The Yukon - Koyukuk School District will use the grant funds to develop a wood energy project for the Kaltag school and community. The project will be developed in phases and only the first phase is funded by this grant. The first phase is to identify the energy requirements and to confirm the availability of the resource. A preliminary cost benefit analysis will be conducted to verify that the project and fuel supply has the potential to be sustainable and that the projected cost will justify the development costs. Environmental issues will be identified and community meetings held to confirm support for the project. Potential business partners will be identified. If the first phase of development yields favorable results, additional funding will be required in order for the project to proceed to Phase II and a more detailed business plan and project conceptual design will be developed.

Project Status: This project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$12,710.00	$12,710.00
Other State Funding	$0.00	$0.00
Total State	**$12,710.00**	**$12,710.00**
Required Local Match	$2,500.00	$2,500.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$15,210.00**	**$15,210.00**

Louden Tribal Council Renewable Energy

Grantees	City of Galena (Local Government), Louden Tribal Council (Local Government)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10220

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	608	Renewable Energy Feasibility Study	7040047	402112	Feasibility	7/1/11	12/31/12	Closed
6	927	Galena Community Wood Heat Project	7060927	402125	Construction	7/1/13	12/31/15	Active
7	1047	Galena Community Wood Heat Project 2	7071047	402125		7/1/14		Active

Grant 7040047: Renewable Energy Feasibility Study

Project Scope: This project will deliver a feasibility study and conceptual design for a district heating system for the City of Galena. This study will include a comprehensive forest inventory and forest management plan for the areas surrounding the community of Galena.

The original grant application requested funding for feasibility and conceptual design for a biomass combined heat and power system, pending the outcome of a reconnaissance study performed by WH Pacific. The study identified no CHP technology that is ready for commercialization, but identified opportunities for biomass heating systems. Understanding the sustainable harvest levels of biomass is the first step to developing a biomass heating system.

The feasibility/conceptual design will include a community heat load audit and potential technology for district heating systems. It will also consider utilizing additional recovered heat from the Galena Power Plant. The forest inventory and management plan will include an assessment of land ownership, species, quantity available for a sustainable harvest, and potential harvest methods of biomass. The study will result in estimated quantities and delivered costs of biomass to a potential system.

Project Status: The project is complete and grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$89,628.04	$89,628.04
Other State Funding	$0.00	$0.00
Total State	**$89,628.04**	**$89,628.04**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$89,628.04**	**$89,628.04**

Grant 7060927: Galena Community Wood Heat Project

Project Scope: The City of Galena will use this grant to fund the design of chip-fired boiler systems to heat its school district and the Galena Interior Learning Academy School (GILA) with local woody resources. The City of Galena will employee contractors to complete the identified tasks. AEA requests deliverables at various points during the design and construction process.

This project is estimated to displace a total of 230,000 gallons per year of fuel oil, using an estimated 2,950 green tons of chips per year (40% moisture content). The technical feasibility phase of this project is complete, but the harvest/fuel inventory plans are in process.

The application includes substantial support for the project from the community, the Louden Tribal Council, Galena City School District, and Gana-A'Yoo Limited.

Project Status: The Conceptual Design report has been accepted and the final design is in progress.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$317,788.00	$75,744.60
Other State Funding	$0.00	$0.00
Total State	**$317,788.00**	**$75,744.60**
Required Local Match	$41,458.00	$28,680.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$359,246.00**	**$104,424.60**

Grant 7071047: Galena Community Wood Heat Project 2

Project Scope: This project will fund the construction of the biomass fueled district heating loop at the Galena Interior Learning Academy. This project is estimated to displace a total of 230,000 gallons per year of fuel oil, using an estimated 2,950 green tons of chips per year (40% moisture content).

Project Status: The final design of this project is in progress through a Round 6 Renewable Energy Fund grant. The construction grant will be issued when the final design is accepted. The community is completing the harvest for the first year of operation.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$3,096,900.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$3,096,900.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,096,900.00**	**$0.00**

McGrath Biomass

Grantees	McGrath Light & Power Company (Utility-Government), McGrath Traditional Council (Government Entity - Tribal Council)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10033

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	30	McGrath Central Wood Heating Project Development Phase III	2195403	402039	Feasibility	8/20/08	6/30/14	Closed
2	314	McGrath Biomass Feasibility	2195459	402043	Feasibility	7/1/09	6/30/11	Closed

Grant 2195403: McGrath Central Wood Heating Project Development Phase III

Project Scope: Phase III (Final Design and Permitting) of the project is funded under this agreement. The following tasks will be completed during this stage:

Timeline/Milestones:

Grant agreement in place (Months 1-2)- submit Project Conceptual Design, submit Updated Project Budget and Schedule, submit Site Control Documentation, and apply for All Necessary Permits.

Review Project Design and System Integration (Month 3)- submit 65% Design Documents, submit Conceptual Design and System Integration Plan with the McGrath Heat Recovery Construction Project, perform Geotech Analysis, submit Necessary Power Sales Agreements (PSAs) and Memoranda of Understanding (MOUs), and submit Quarterly Report.

Finalize Design and Permitting (Month 4)- submit 95% Design, submit All Site Control and Permitting Documents, submit Final Environmental Analysis, submit Operational Business Plan, and submit Updated Budget and Proposed Construction Schedule.

Project Status: The Conceptual Design Report and permitting analysis are complete. This project is in close-out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$322,000.00	$131,719.00
Other State Funding	$0.00	$0.00
Total State	**$322,000.00**	**$131,719.00**
Required Local Match	$63,000.00	$15,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$385,000.00**	**$146,719.00**

Grant 2195459: McGrath Biomass Feasibility

Project Scope: The McGrath Traditional Council will use grant funds to complete a feasibility study for community-based biomass resource analysis located in McGrath, Alaska. The study encompasses a 5-mile radius. The scope includes assessing kind, quantity, and delivered cost of biomass. The project will benefit the interior communities of Tanana, Tanacross, and Nenana by showing the proposed method of biomass supply assessment is useful.

The project team must coordinate with McGrath Light & Power and other project participants in assessing harvest supply requirements and system requirements, per the review team for the Alaska Energy Authority. This coordination will need to be documented in the report submitted to the Authority.

Project Status: The project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$25,736.49	$25,736.49
Other State Funding	$0.00	$0.00
Total State	**$25,736.49**	**$25,736.49**
Required Local Match	$6,841.35	$6,841.35
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$32,577.84**	**$32,577.84**

Tanacross Woody Biomass Community Facility Space Heating Project

Grantees	Native Village of Tanacross (Local Government)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10209

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
5	881	Tanacross Woody Biomass Community Facility Space Heating Project	7050881	402118	Construction	7/1/12	12/31/15	Active

Grant 7050881: Tanacross Woody Biomass Community Facility Space Heating Project

Project Scope: This project will deliver a fuel supply plan, final design, and construction of a single centrally located woody biomass plant to heat four (4) community facilities which is estimated to displace 26,500 gallons of imported heating oil and create local wood-harvesting employment/small business opportunities.

AEA must accept a fuel supply plan and final design. The system design must include metering and monitoring equipment and instrumentation. AEA recommends full funding of $420,000; however, AEA must accept the fuel supply plan and final design before funding is made available for construction.

Project Status: Tanacross contracted with Coffman Engineering to conduct an analysis of the most economic biomass space distribution approach and design and engineering of the selected preferred option for the purpose of serving the village's water treatment/washeteria plant and the new 10,000 square foot multi-purpose building. Tanacross has procured two GARN 2000 boilers and constructed a 2,000 s.f. biomass heat station building using village force account labor. This building included a concrete slab/foundation, SIP panel construction (SIP's donated by TVC) and a manufactured roof truss system. The building is fully enclosed including doors installed. Work has now halted on the project. Bids for mechanical work exceed current funding. Tanacross is seeking additional funds to complete the biomass heat system.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$420,000.00	$393,000.00
Other State Funding	$0.00	$0.00
Total State	**$420,000.00**	**$393,000.00**
Required Local Match	$170,000.00	$171,348.43
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$590,000.00**	**$564,348.43**

Tok Wood Heating

Grantees	Alaska Gateway School District (Government Entity - School District)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10052

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	49	Tok Wood Heating Construction	2195417	402038	Construction	8/20/08	12/31/11	Closed

Grant 2195417: Tok Wood Heating Construction

Project Scope: The Tok School Biomass Heating Project is a comprehensive proposal, from project Feasibility to Design and Construction with the final Commissioning of the facility in the fall of 2010. An automated wood chip heating system that will heat a 75,000 sq. ft. school and approximately 5,000 sq. ft. of outbuildings will displace the 64,000 gallons of heating fuel used in 2007-08 and create an annual savings of at least $126,562 per year for this complex.

A separate building for the chip-fired boilers will be constructed behind the school, in a central location with easy access to the rest of the outbuildings, for connecting heat piping. The building will have a chip storage bin that will feed into a surge bin inside the boiler room via augers and conveyer system. The surge bin can be loaded from the inside or outside of the building to accommodate for downtime of the chip delivery system.

The project was developed in partnership with the Tok Area Forestry, CTA Engineering, and Alaska Gateway School District staff. It is estimated that the forest around Tok can provide 50 tons of chipped fuel per acre. (Initial scientific studies show that the number of tons per acre could be higher than estimated.) High hazard fuel around Tok is estimated at 27,000 acres. Even at 20 tons per acre, the expected yield would provide fuel for about 5 years on the 200 acres.

Project Status: Project is operational and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$3,245,349.00	$3,245,349.00
Other State Funding	$0.00	$0.00
Total State	**$3,245,349.00**	**$3,245,349.00**
Required Local Match	$15,000.00	$15,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$3,260,349.00**	**$3,260,349.00**

Upper Tanana Biomass CHP Project

Grantees	Alaska Power and Telephone (For Profit Entity)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10270

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	665	Upper Tanana Biomass CHP Project	7040045	402049	Feasibility	7/1/11	12/31/12	Active
6	925	Upper Tanana Biomass CHP Project 2	7060925	402049	Final Design	7/1/13	12/31/14	Active

Grant 7040045: Upper Tanana Biomass CHP Project

Project Scope: Alaska Power & Telephone (AP&T) will conduct an assessment that will be Phase II of the project. This will complete the Feasibility Analysis, Biomass Resource Assessment and Conceptual Design for a 2MWe biomass gasification CHP (combined heat and power) system. AP&T, in partnership with the Upper Tanana communities of Tok, Tetlin, Dot Lake and Tanacross, the State of Alaska Department of Natural Resources (DNR), contracted consultants, foresters and economists, will assess the feasibility of a system utilizing locally sourced woody biomass as fuel. The deliverables of the project will be the sustainable supply and projected costs of the biomass resource, the conceptual design, permitting and environmental analysis of the proposed project site, refined economic/financial analysis, and a conceptual business/operational plan.

AP&T must coordinate the feasibility assessment with the Tok School Biomass Project and the Yerrick Creek Hydro Project.

Project Status: The project is complete and began closeout process.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$362,882.62	$362,882.62
Other State Funding	$0.00	$0.00
Total State	**$362,882.62**	**$362,882.62**
Required Local Match	$42,619.60	$42,619.60
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$405,502.22**	**$405,502.22**

Grant 7060925: Upper Tanana Biomass CHP Project 2

Project Scope: Alaska Power and Telephone will develop the conceptual design for a Biomass Fueled Combined Heat and Power System, building on the feasibility study that was conducted with funding from Round 5 of the Renewable Energy Fund.

Even though biomass generation may not be the immediate power solution for Tok, AP&T believes that utilizing this abundant local resource would provide benefits to the Tok community. Harvesting and processing the timber would employ many and would stimulate the economy. Refocusing the use of this resource to primarily provide heat would better utilize the resource available and AP&T believes would provide the greatest benefit to the community.

This conceptual design will develop a harvest plan per the standards developed by AEA with AK Division of Forestry and determine the best methods for delivering heat to the greatest number of residents by performing a heat consumption analysis for residential and commercial (Tok, Tanacross, Tetlin), and analyzing potential loads, modeling energy consumption, and determining the best use of energy. AP&T will also perform an analysis for plant locations (CHP, heat, and pellet) and evaluate land ownership and acquisition costs, perform Environmental Impact Studies (air quality, fish & game, land use, traffic, and other required areas), determine the economics of developing a heat utility and develop a business plan, and compete 35% engineering design.

Business concepts to be considered and expanded upon through the study include the construction of multiple CHP plants, the development of a pellet manufacturing industry, the application of isolated pellet fueled heat stations, district heating using hot water heat loops and the integration heat supply into such a system from independent heat producers.

The Feasibility Study found that the proposed 2MW CHP system would only be feasible if the heat downstream of the steam turbine could be utilized and there were no nearby heat demands. Subsequently, AP&T indicated that the proposed Biomass CHP

project was not advisable and that it doesn't want to be a heat sale utility. A request has been made for a local non-profit company to take over the grant. It is being reviewed.

Project Status: The grant agreement was signed September 11, 2013. However before any funds were expended, the grantee and AEA agreed that this project should not be pursued any further. A letter was sent to the applicant on January 5, 2016 to formalize the grant cancellation.

As of Nov. 30, 2013	**Budget**	**Expenditures**
Renewable Energy Funding	$400,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$400,000.00**	**$0.00**
Required Local Match	$60,000.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$460,000.00**	**$0.00**

Venetie District Heating

Grantees	Village of Venetie (Local Government), Venetie Village Council (Local Government)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10191

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	293	Venetie District Heating Conceptual Design	2195452	402042	Feasibility	7/1/09	6/30/12	Closed
7	1044	Venetie Clinic Heat Recovery	7071044	403076	Construction	7/1/14	6/30/18	Active

Grant 2195452: Venetie District Heating Conceptual Design

Project Scope: The project as described in the application is a wood energy district heating project located in Venetie, Alaska for three buildings: the school, school housing and washeteria/water system. Although the full project will be a two year project, the current grant funding is for completion of a feasibility study and conceptual design of the proposed boiler systems only. Two important issues that need to be addressed by this project are the supply of wood and reliable operation of the boilers. The feasibility assessment will address these issues before design work is completed. A level one feasibility and a reconnaissance of forest wood resources have been performed in the summer of 2008 under a Department of Energy Tribal energy grant for the Yukon Flats area.

Project Status: The project is complete

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$32,500.00	$32,500.00
Other State Funding	$0.00	$0.00
Total State	**$32,500.00**	**$32,500.00**
Required Local Match	$8,309.09	$8,309.09
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$40,809.09**	**$40,809.09**

Grant 7071044: Venetie Clinic Heat Recovery

Project Scope: This grant will provide the design and construction of jacket heat recovery project to capture the recovered heat from the diesel engines in the Venetie Village Electric (WE) power plant and send the recovered heat to the newly constructed clinic in Venetie, Alaska for space heating. It is expected that this project will save the clinic 2,300 gallons of heating oil each year, nearly offsetting the total fuel oil usage.

Project Status: The design is complete. Construction will begin during the summer of 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$198,500.00	$11,214.25
Other State Funding	$0.00	$0.00
Total State	**$198,500.00**	**$11,214.25**
Required Local Match	$5,954.00	$4,875.94
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$204,454.00**	**$16,090.19**

Wood Heating in Interior Alaska Communities

Grantees	Interior Regional Housing Authority (Government Entity - Housing Authority)
Technology Type	BIOMASS
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10304

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4, 5, 6	637, 820, 933	Feasibility Assessments for Wood Heating in Interior Alaska Communities	7040048	402113	Feasibility	7/1/11	12/31/12	Closed
5	820	Design & Construction of Wood Heating Projects in Interior Alaska Communities	7050820	402113	Construction	7/1/12	12/31/15	Active
6	933	Biomass Feasibility Studies in Public Facilities	7060933	402126	Feasibility	7/1/13	6/30/15	Closed

Grant 7040048: Feasibility Assessments for Wood Heating in Interior Alaska Communities

Project Scope: This project will complete feasibility assessments of wood-fired heating systems (e.g., Garn boilers), in eight communities in Interior Alaska: Hughes, Ruby, Koyukuk, Nulato, Kaltag, Nikolai, Anvik, and Holy Cross. The communities named in this proposal were selected using two criteria: 1) the 2010 Alaska Energy Pathway identifies six of the eight as having significant potential for fuel displacement and cost savings with a wood-fired heating system, and 2) the communities have all held tribal and municipal meetings on this issue, identified wood heat as an energy priority, and reached out to the applicant for assistance with a project of this type.

The feasibility studies will include forest resource inventories and wood harvest assessments, potential heating loads, heating technology evaluations, right-of-way evaluation, preliminary environmental/permitting assessments, and preliminary economic analysis.

Project Status: IRHA has successfully completed the biomass feasibility studies for eight communities in Interior Alaska: Hughes, Ruby, Koyukuk, Nulato, Kaltag, Nikolai, Anvik, and Holy Cross. In December 2012, IRHA submitted all final documents and AEA has reviewed and accepted the final studies. Three communities will advance to construction in a Round V grant: Hughes; Anvik; Koyukuk.

The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$120,870.28	$120,870.28
Other State Funding	$0.00	$0.00
Total State	**$120,870.28**	**$120,870.28**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$120,870.28**	**$120,870.28**

Grant 7050820: Design & Construction of Wood Heating Projects in Interior Alaska Communities

Project Scope: This project will deliver a final design and construction of single woody biomass plant to heat three (3) Interior Alaska communities: Hughes; Anvik; Koyukuk.

In order for funding to be released and made available for construction, AEA must accept a fuel supply plan and feasibility study. Also, the system design must include metering and monitoring equipment and instrumentation.

However, AEA had some concerns about the wood supply sustainability, the wood supplier, and the lack of feasibility study for each chosen community to evaluate the fuel availability and feasibility of each chosen community. Therefore, AEA recommends full funding of $1,215,224 with requirements that 1) A wood resource plan must be completed and reviewed by AEA and Alaska Division of Forestry to assure the sustainable supply of wood for each chosen community; 2) AEA must accept the recommendations

from the feasibility analysis for the three communities that will advance to design and construction; 3) the economic analysis B/C ratios of the chosen communities should average greater than 1.25 (the ratio that was assumed for the purpose of analysis).

Project Status: The Hughes and Koyukuk systems are operational. The resource plan, operational plan, and design efforts are all progressing in Anvik.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$1,215,224.00	$1,032,083.04
Other State Funding	$0.00	$0.00
Total State	**$1,215,224.00**	**$1,032,083.04**
Required Local Match	$173,771.00	$174,937.86
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,388,995.00**	**$1,207,020.90**

Grant 7060933: Biomass Feasibility Studies in Public Facilities

Project Scope: Interior Regional Housing Authority (IRHA) will use the awarded grant funds to perform biomass feasibility assessments and forest inventories in the communities of Alatna, Allakaket, Northway, Grayling, Shageluk, Beaver, and Stevens Village.

IRHA will provide the Authority draft copies of the studies for review and approval at the 65% and 95% phases. The Authority has provided IRHA with an outline of the items that need to be included in the biomass feasibility assessments and forest inventories.

Project Status: 2013: The final reports have been accepted and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$102,431.85	$102,431.85
Other State Funding	$0.00	$0.00
Total State	**$102,431.85**	**$102,431.85**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$102,431.85**	**$102,431.85**

Manley Hot Springs Geothermal Plant

Grantees	TDX Power, Inc. (Independent Power Producer)
Technology Type	GEOTHERMAL
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10152

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
0	-112	Manley Hot Springs Geothermal Plant	2195421	406006	Feasibility	8/20/08	12/31/11	Closed

Grant 2195421: Manley Hot Springs Geothermal Plant

Project Scope: TDX Power began the project using their own funds and was awarded grant funds to complete the following.

Perform Aeromagnetic Survey to define the subsurface contact between the granitic rock and sedimentary rock of the Manley area. Acquire Local Well Information as there are numerous undocumented wells in the area. This information is an important part of the evaluation of any geothermal resource. RaMPS Survey (Resistivity Monopole Profiling and Sounding) will be completed to better understand the geologic structure (its location, orientation, and extent) and where geothermal water exists. Determine next steps based on surveys; depending on findings, TDX Power in consultation with AEA, UAF and industry experts will determine viability of the proposed project. Based on determinations, project will either proceed or be abandoned. Powerhouse Upgrade and Integration Design to be completed if project is determined to be viable. Construction of pre-packaged geothermal heat conversion and continuous electric generating system for one 200 kW unit.

TDX Power, as owner of the new regulated electric utility at Manley, planned to own, operate, and maintain the Manley Geothermal Project over its expected useful lifetime. The project was intended to provide electric energy to residential and commercial electric customers in Manley, from proven geothermal generating equipment utilizing geothermal resources.

Project Status: TDX elected in 2010 to not proceed with the project. In 2008 and 2009 TDX Power conducted geological and geophysical explorations around Manley Hot Springs to determine the best potential well site for a geothermal power plant for the community of Manley Hot Springs. After geophysical exploration activities of 2009, TDX Power decided not to commit the necessary matching funds to drill an exploration well. The grant was closed as of December 31, 2010.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$27,876.00	$27,876.00
Other State Funding	$94,001.00	$94,001.00
Total State	**$27,876.00**	**$27,876.00**
Required Local Match	$705,000.00	$91,407.00
Federal Grant Funding	$94,001.00	$94,001.00
Total Project Costs	**$826,877.00**	**$213,284.00**

McGrath Heat Recovery

Grantees	McGrath Light & Power Company (Utility-Government)
Technology Type	HEAT RECOVERY
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10063

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	61	McGrath Heat Recovery Construction	2195416	403030	Construction	8/20/08	12/31/13	Closed

Grant 2195416: McGrath Heat Recovery Construction

Project Scope: The Project is for Final Design, Permitting, and Construction phases of a heat recovery system to provide available heat from the existing McGrath Light & Power Company (ML&P) Power Plant to the Iditarod Area School District, the clinic, and three adjacent commercial buildings. This project will use available jacket water and exhaust head (wasteheat recovery) that is currently being rejected to the atmosphere via radiators.

Project Status: This project is complete and the grant is closed.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$712,415.00	$712,415.00
Other State Funding	$291,765.16	$291,765.16
Total State	**$1,004,180.16**	**$1,004,180.16**
Required Local Match	$167,000.00	$167,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$1,171,180.16**	**$1,171,180.16**

Yerrick Creek Hydroelectric Construction

Grantees	Native Village of Tanacross (Local Government), Alaska Power Company (Utility-Private)
Technology Type	HYDRO
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10027

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
3	438	Yerrick Creek Hydroelectric Project	7030020	407017	Construction	7/1/10	6/15/11	Closed
7	1077	Yerrick Creek Hydroelectric Project 2	7071077	407067		7/1/14	6/30/16	Active

Grant 7030020: Yerrick Creek Hydroelectric Project

Project Scope: The grant is to construct the 2.0 MW Yerrick Creek Hydroelectric Project, which is approximately 20 miles from Tok.

Project Status: The grant was cancelled. The grantee indicated they would like to place the project on hold pending the outcome of another renewable energy study. Additionally, site control remains an issue. For these reasons, the grant was cancelled before grant award and expending any funds.

Grant 7071077: Yerrick Creek Hydroelectric Project 2

Project Scope: This grant is to generate additional construction related documentation required for the Yerrick Creek Hydroelectric project including a business plan, RCA certification, hard copies of design documents and permits, site control easement or deed, and an engineers cost estimate.

Project Status: The grant has been recently awarded with completion of work expected in 2016.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$75,000.00	$0.00
Other State Funding	$0.00	$0.00
Total State	**$75,000.00**	**$0.00**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$75,000.00**	**$0.00**

Ruby Hydrokinetic

Grantees	Yukon River Inter-Tribal (Local Government)
Technology Type	OCEAN/RIVER
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10084

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
1	84	Ruby Hydrokinetic	2195402	407050	Feasibility	8/20/08	6/30/11	Closed

Grant 2195402: Ruby Hydrokinetic

Project Scope: The Yukon River Inter-Tribal Watershed Council (YRITWC) planned to expand on the hydrokinetic project it operated in Ruby in 2008. In 2009 the YRITWC planned to redeploy the 5kW hydrokinetic turbine used in 2008 in an effort to gain additional information for a revised resource assessment. To accomplish this there was a redesign of the turbine deployment (anchoring and debris diversion). The plan was to then to deploy a 25kW version of the hydrokinetic turbine in 2010 for study and analysis.

Project Status: The hydrokinetic project in Ruby was a small one time conceptual test. The turbine was installed, produced a small amount of power and removed within the same season. The project was a first of its kind in Alaska. The project revealed hydrokinetic deployments in Alaska rivers can be challenging.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$189,335.06	$189,335.06
Other State Funding	$0.00	$0.00
Total State	**$189,335.06**	**$189,335.06**
Required Local Match	$6,600.00	$6,600.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$195,935.06**	**$195,935.06**

Eagle Solar Array Project

Grantees	Alaska Power Company (Utility-Private)
Technology Type	SOLAR PV
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10422

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
6	915	Eagle Solar Array Project	7060915	411008	Construction	7/1/13	12/31/15	Active

Grant 7060915: Eagle Solar Array Project

Project Scope: This grant will fund final design and construction of a 30kW solar photovoltaic array at the Eagle powerhouse by Alaska Power Company (APC). The project will consist of one hundred and sixty three solar photovoltaic panels, six three-phase inverters, a programmable logic controller, a SCADA system, and a diesel power plant interface. Activities will include final design, materials and equipment procurement, shipping, construction, commissioning, and project closeout. The project will be managed by APC.

Project Status: The Eagle solar project is operational. The grant is in closeout process

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$118,013.00	$118,013.00
Other State Funding	$0.00	$0.00
Total State	**$118,013.00**	**$118,013.00**
Required Local Match	$29,503.00	$60,799.11
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$147,516.00**	**$178,812.11**

Kaltag Solar Construction

Grantees	Alaska Village Electric Cooperative (Utility-Cooperative)
Technology Type	SOLAR PV
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10308

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	641	Kaltag Solar Construction	7040049	411006	Construction	7/1/11	12/31/12	Closed

Grant 7040049: Kaltag Solar Construction

Project Scope: AVEC proposes to install a 10 kW solar array in Kaltag. The array would be installed on the side of the existing power plant facility that is owned and operated by AVEC. Work would involve shipping materials to the community, installing, integrating, testing, and commissioning the array. As a pilot study, installation of this small array in Kaltag would help AVEC evaluate the benefits of solar arrays installed at power generating facilities.

Project Status: Project constructed Fall 2012. Minor commissioning required over several months, but generally fully operational throughout 2013.

2014 update: the project is functioning as intended.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$90,000.00	$90,000.00
Other State Funding	$0.00	$0.00
Total State	**$90,000.00**	**$90,000.00**
Required Local Match	$10,000.00	$10,000.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$100,000.00**	**$100,000.00**

Chisana Mountain Wind Feasibility Project

Grantees	Alaska Power Company (Utility-Private)
Technology Type	WIND
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10440

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
7	1027	Chisana Mountain Wind Feasibility Project	7071027	410096	Feasibility	7/1/14	12/31/16	Active

Grant 7071027: Chisana Mountain Wind Feasibility Project

Project Scope: Alaska Power Company will complete a wind resource assessment, feasibility study and conceptual design of a wind energy project proposed on Chisana Mountain which sits along a road and transmission line from Tok to Tetlin. The conceptual design report will include any necessary controls or equipment needed to integrate the wind farm into the Tok electrical grid. The proposed system could incorporate one or more megawatt-scale wind turbines.

Project Status: The grant budget and scope has been agreed upon by the grantee and AEA program manager. The grant has been signed by all parties and is in place effective Sept. 9, 2014. US fish & Wildlife Service consultation was completed on Aug. 7. FAA permit for the meteorological tower was received on Aug. 11. Tetlin Village Council authorized use of their lands on Aug. 28. Met tower was installed on Sep. 26. Met tower is collecting data and transmitting through the modem. The grantee will continue to monitor and review data with AEA over the next year.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$119,000.00	$20,523.10
Other State Funding	$0.00	$0.00
Total State	**$119,000.00**	**$20,523.10**
Required Local Match	$29,800.00	$21,289.55
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$148,800.00**	**$41,812.65**

Tok Wind Resource

Grantees	Alaska Power and Telephone (For Profit Entity)
Technology Type	WIND
Region	Yukon-Koyukuk/Upper Tanana
AEDG Project Code	10186

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
2	287	Tok Wind Resource Assessment	2195476	410057	Feasibility	7/1/09	12/31/10	Closed

Grant 2195476: Tok Wind Resource Assessment

Project Scope: Village Wind Power will permit and install a met tower southwest of Tok and complete a wind resource assessment.

Project Status: The last financial report for PBO00436/2195476 ($130,000 total to AP&T) was filed in March 2011 showing $52,232.28 spent and $77,767.72 balance. The wind resource analysis report is complete. The project is closed out.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	$52,232.28	$52,232.28
Other State Funding	$0.00	$0.00
Total State	**$52,232.28**	**$52,232.28**
Required Local Match	$0.00	$0.00
Federal Grant Funding	$0.00	$0.00
Total Project Costs	**$52,232.28**	**$52,232.28**