



Front and back cover photos: St. Paul Island Wind Turbines in winter and summer respectively

Photos courtesy of TDX Power



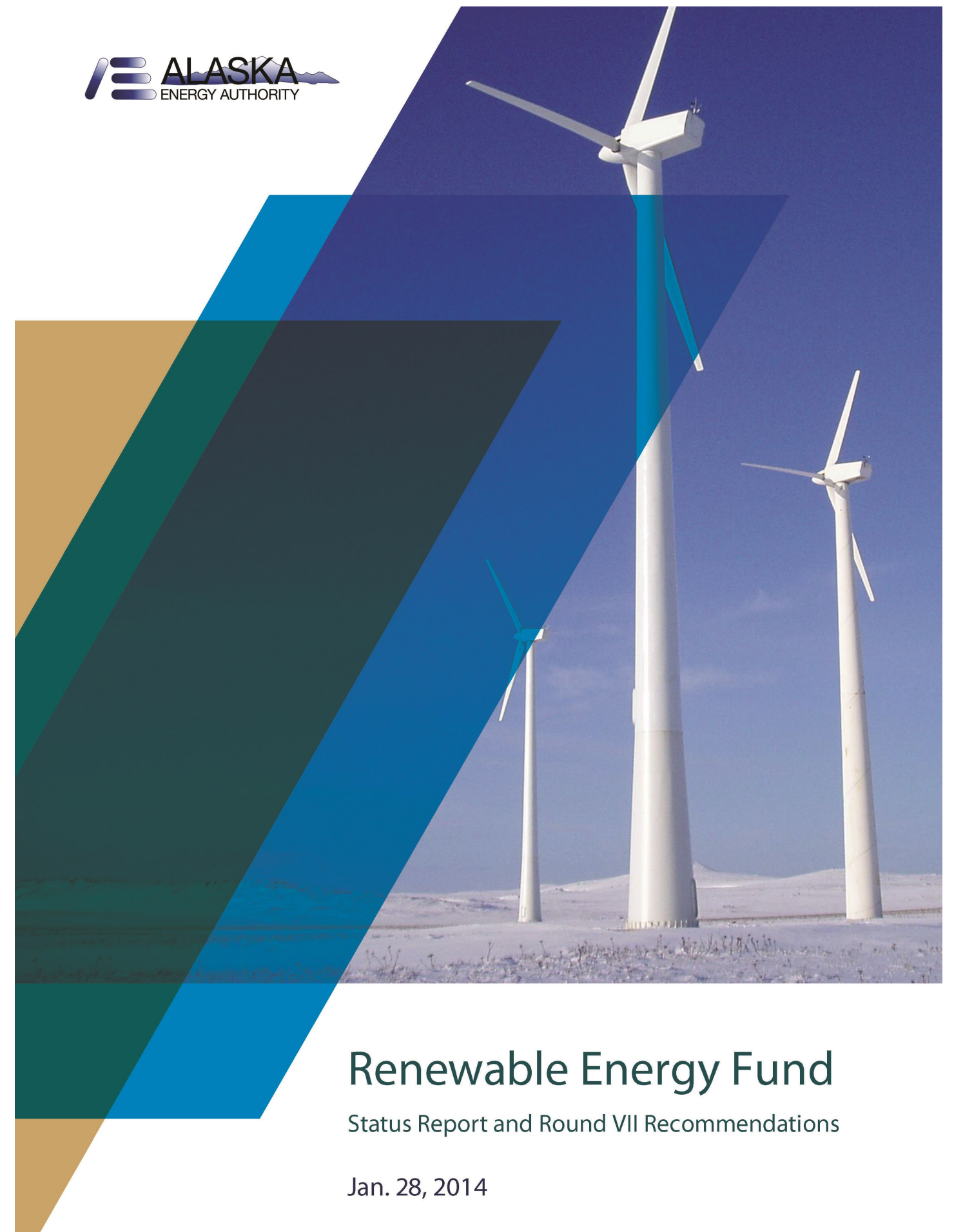
Alaska Energy Authority

813 W Northern Lights Blvd

Anchorage, AK 99503

(907) 771-3000

www.akenergyauthority.org



Renewable Energy Fund

Status Report and Round VII Recommendations

Jan. 28, 2014

Introduction

The Alaska Renewable Energy Fund (REF) provides tremendous benefits to Alaskans by assisting communities across the state to reduce and stabilize the cost of energy. The program also creates jobs, uses local energy resources, and keeps money in local economies.

The REF was established by the Alaska State Legislature in 2008, and extended 10 years in 2012.

Implemented by the Alaska Energy Authority (AEA), the Renewable Energy Fund provides public funding for the development of qualifying and competitively selected renewable energy projects in Alaska. The is designed to produce cost -effective renewable energy for heat and power to benefit Alaskans statewide. As the program matures, the quality of the proposed projects continues to rise as does the knowledge base regarding implementing and operating renewable energy in Alaska’s diverse climates, geographies and cultures.

This 2014 status report has two parts and a separate appendix:

- 1) An analysis of the projects funded to date, including the performance and savings that have been achieved, and;
- 2) A summary of AEA’s recommendations to the Legislature for funding in 2014 (Round VII).

An appendix of individual project scopes and statuses accompanies this report. It is available in searchable PDF form at www.akenergyauthority.org/REFundApplications-7.html

This report includes the performance of Renewable Energy Fund projects and so is not a complete view of renewable energy production in Alaska.

Additional Information

Additional information on this year’s recommendations and all current and past grants are available on AEA’s web site: www.akenergyauthority.org, including:

- Appendix of project statuses
- Economic evaluations
- Technical evaluations
- Maps

The Renewable Energy Fund saved Alaska communities an estimated 12.5 million gallons of diesel fuel (equivalent) in 2013, at a fuel cost savings of \$28.8 million this year.



Pillar Mountain Wind Phase 1 & 2, and Battery
Photo Courtesy of Kodiak Electric Association



Heat Recovery System installation - Hoonah
Alaska Energy Authority

Round VII Standard Applications

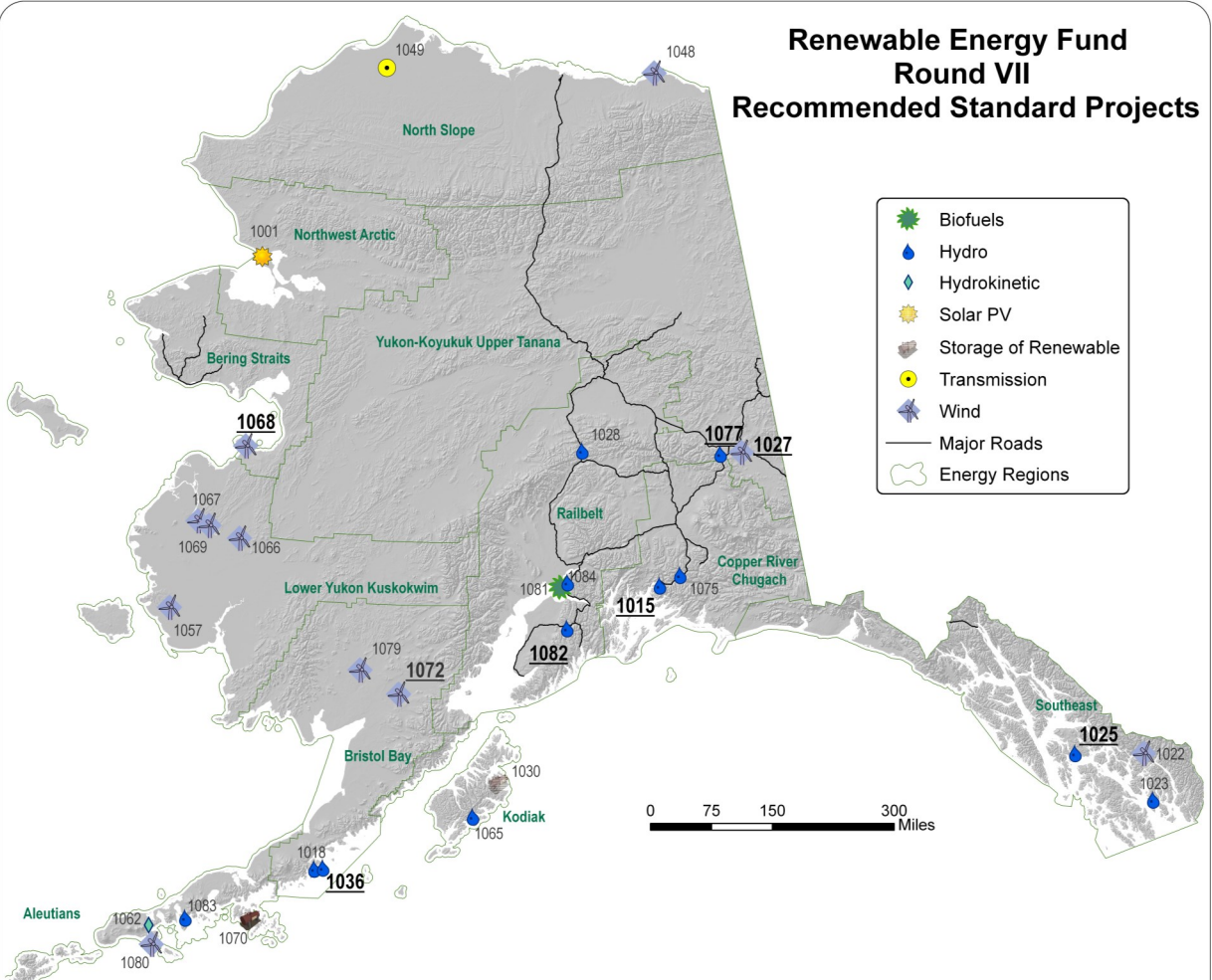


Figure 10.

Recommended funding by type

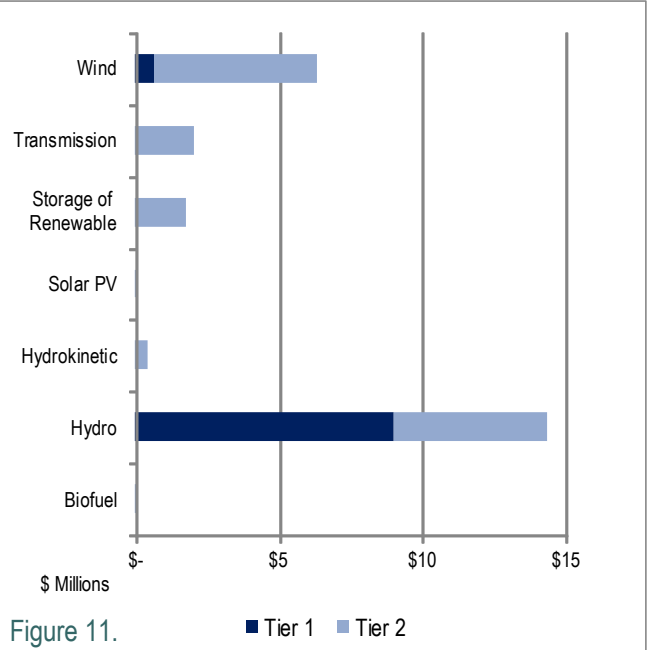


Figure 11.

Recommended funding by region

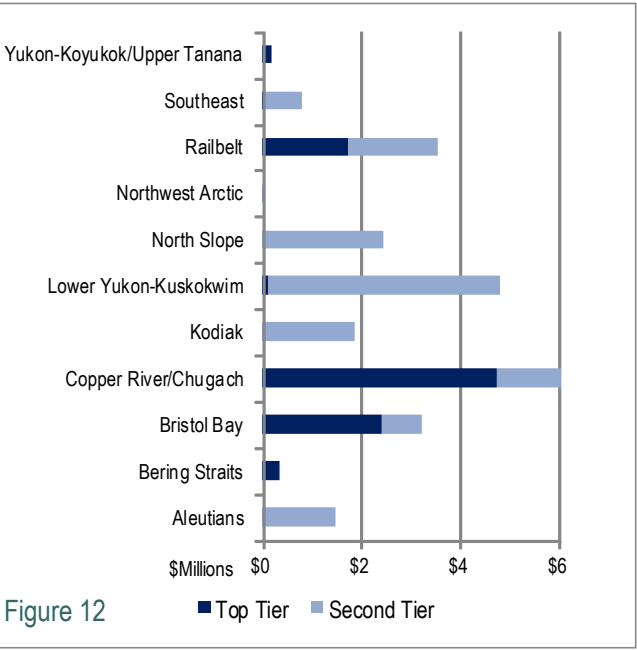


Figure 12

Round VII Heat Applications

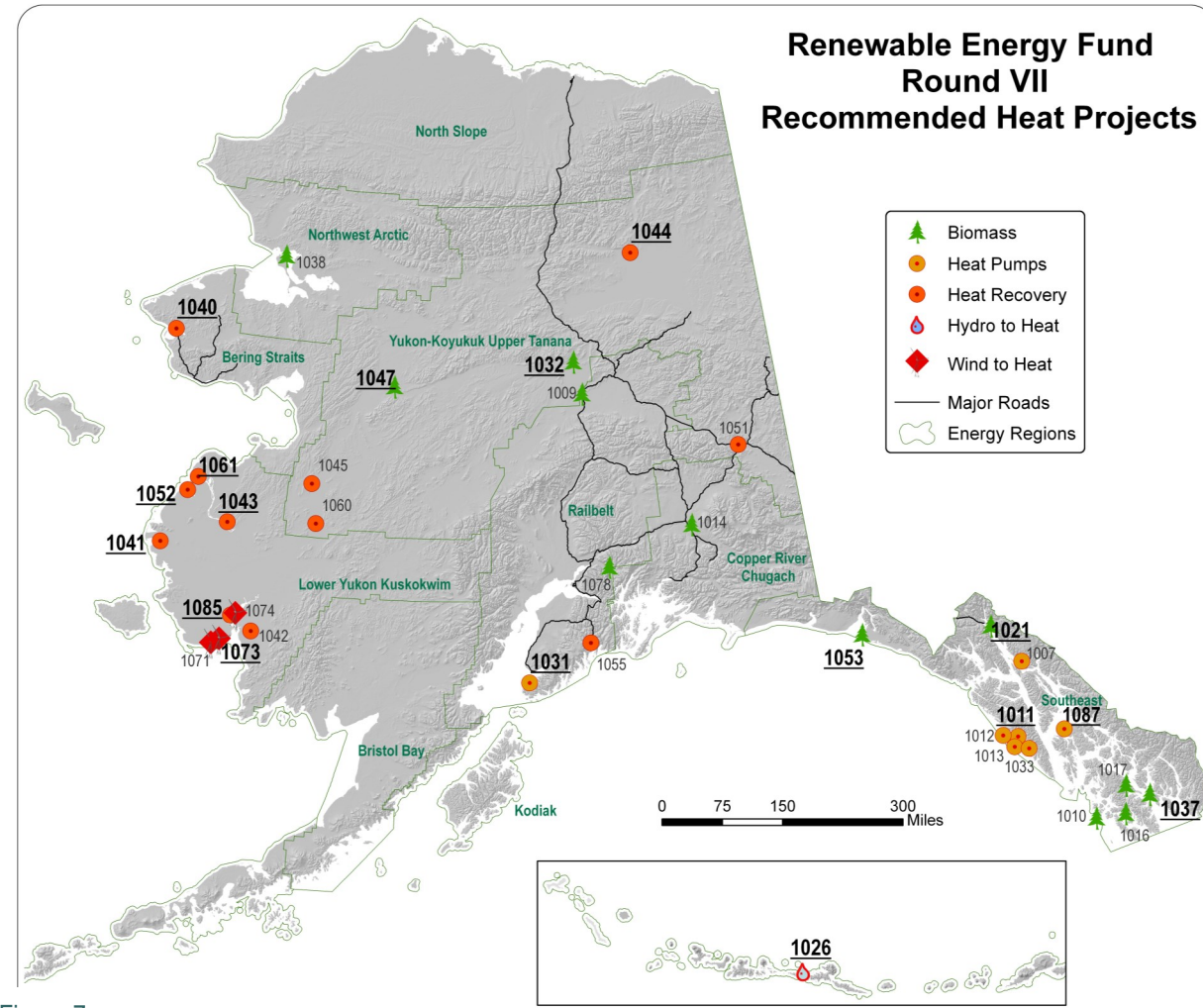


Figure 7.

Recommended funding by type

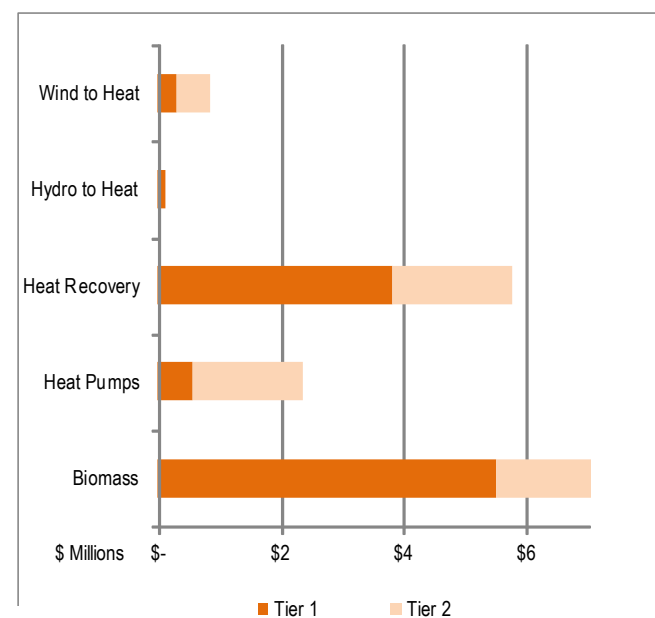


Figure 8.

Recommended funding by region

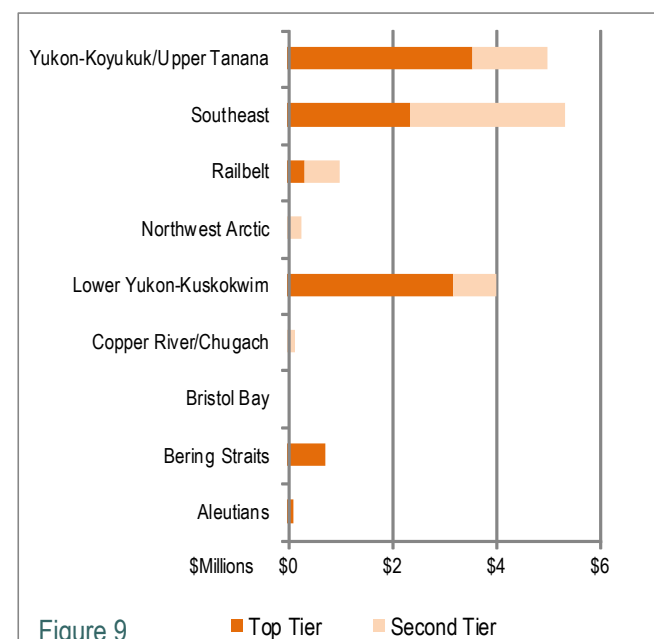


Figure 9

Progress on Funded Projects

As depicted in Figure 1 in the map below, the Renewable Energy Fund has a wide geographic distribution across all areas of the state. Most funding is provided to high cost-of-energy communities (approximately 76% to areas with electricity costs above the average of \$0.20/kWh).

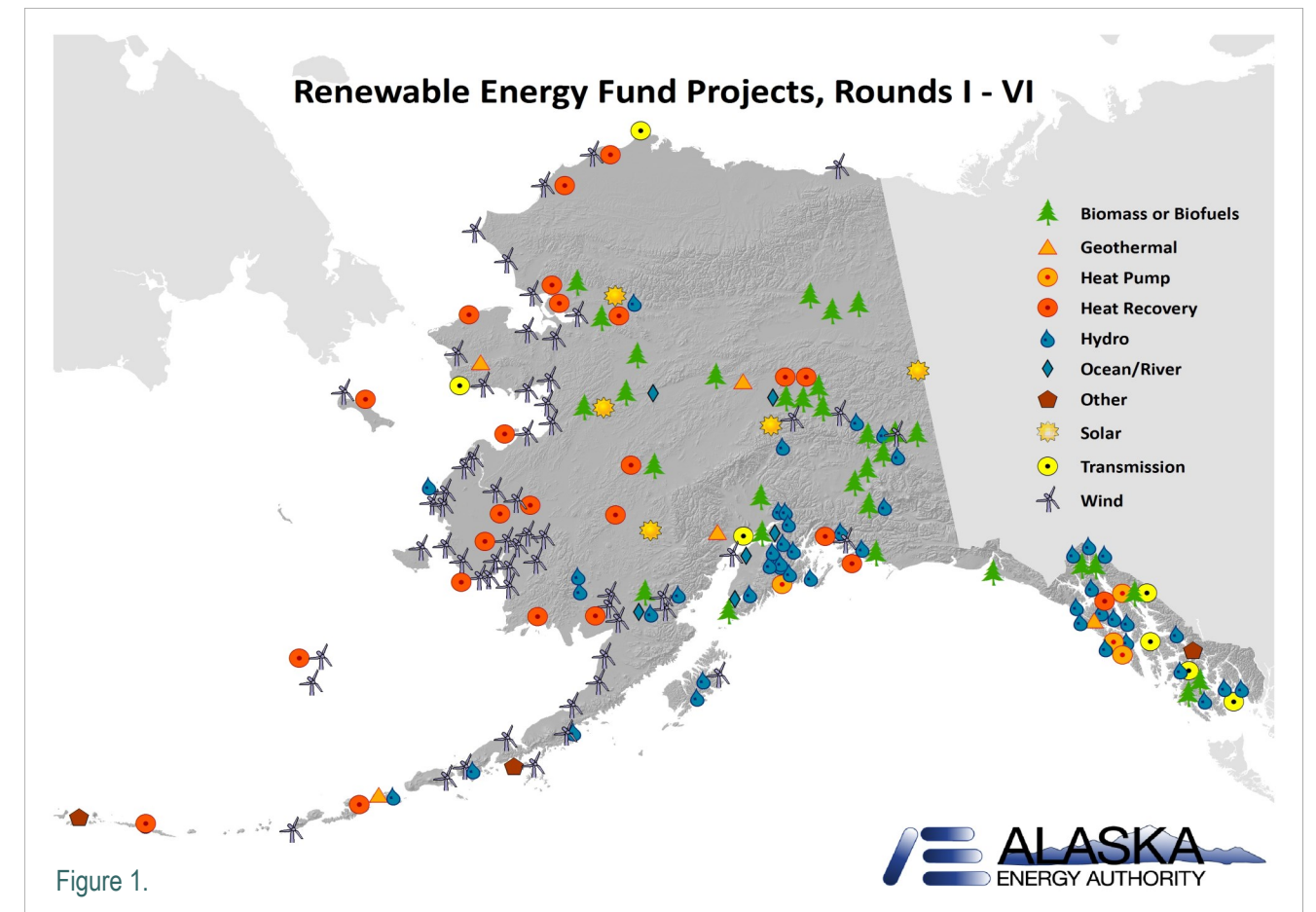


Figure 1.

Figure 2 shows funded grants by Energy Region with approximately \$146M or 65% going to rural Alaskan communities, \$52M or 23% is for Southeast and the remaining \$26M or 12% is for the most populous energy region, the Railbelt.

Figure 3 shows funding by energy type with wind and hydro grants making up nearly 75% of all funding.

Funded Grants by Energy Region Rounds I-VI

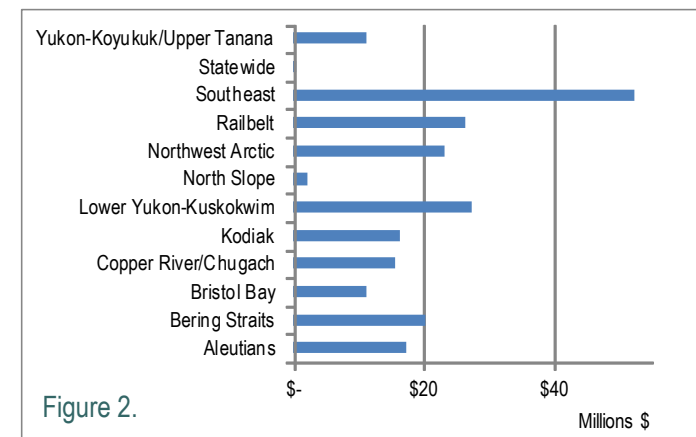


Figure 2.

Funded Grants by Energy Type Rounds I-VI

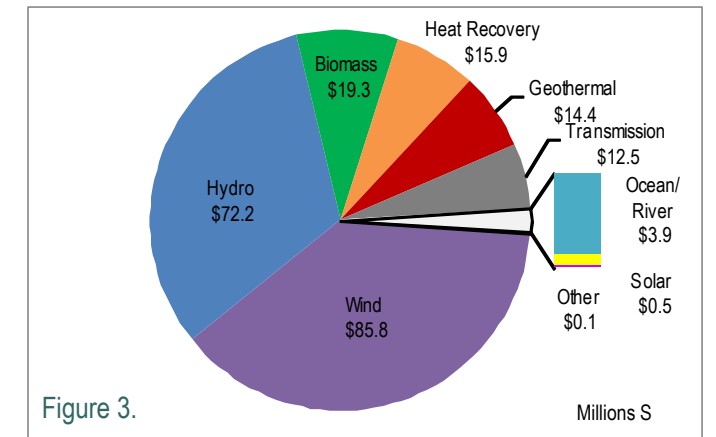


Figure 3.

Progress on Funded Projects

Figure 4. to the right demonstrates the shift occurring in 2014 to a greater number of construction projects completed than any other phase of project development. Earlier years of the REF included more reconnaissance and feasibility studies completed than final construction. Now, those earlier studies and designs are turning into construction projects.



Blue Lake Expansion. Photo courtesy of City of Sitka Electric Department

Scheduled Grant Completion

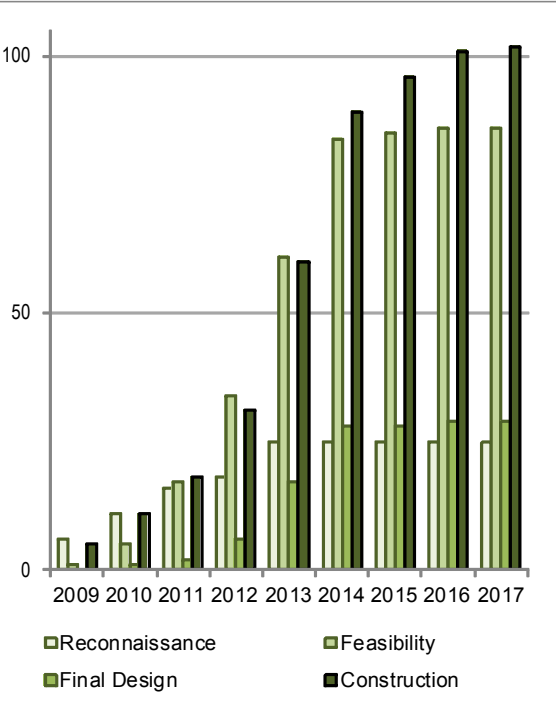


Figure 4.

Table 1. below summarizes the number of applications, funded grants and dollars associated with each year of funding.

Grant and Funding Summary as of 01/14/14

	Round I	Round II	Round III	Round IV	Round V	Round VI	Totals
Applications Received	115	118	123	108	97	85	646
Applications Funded	80 ¹	30	25	74	19	23	251
Grants Currently in Place	26	10	14	51	17	16	134
Grants Completed and Closed	49	18	6	12	1	0	86
Grants Cancelled or Combined	5	2	4	1	0	0	12
Grants Unissued to Date ²	0	0	1	10	1	7	29
Amount Requested ³ (\$M)	\$ 453.8	\$ 293.4	\$ 223.5	\$ 123.1	\$ 132.9	\$ 122.6	\$ 1,349.3
AEA Recommended (\$M)	\$ 100.0	\$ 36.8	\$ 65.8	\$ 36.6	\$ 43.2	\$ 56.8	\$ 339.2
Appropriated (\$M)	\$ 100.0	\$ 25.0	\$ 25.0	\$ 26.6 ⁶	\$ 25.9	\$ 25.0	\$ 227.5
Cash Disbursed (\$M)	\$ 72.3	\$ 19.0	\$ 13.8	\$ 18.3	\$ 8.1	\$.2	\$ 131.7
Match Provided (\$M) ⁴	\$ 20.7	\$ 22.6	\$ 10.5	\$ 34.6	\$ 8.2	\$ 6.0	\$ 102.6
Other Known Funding (\$M) ^{4, 5}	\$ 9.2	\$ 1.6	\$ 0.8	\$ 14.5	\$ 0	\$ 0	\$ 26.1

1. Includes eleven projects from an earlier solicitation issued by AEA.
2. Grants unissued are due mostly to grantee conditions that require earlier phases of work to be completed first or awaiting grantee action on the grant document.
3. Total grant amount requested by all applicants.
4. These totals are for awarded grants only.
5. Represents only amounts recorded in the grant document and does not capture all other funding.
6. \$26.6 Million was appropriated for Round IV, an additional \$10.0 million was re-appropriated from Rounds I, II and III for use in Round IV.

Table 1.

for Heat and Standard Applications by Energy Region

Stage 3 Review Scores (max)										Project Cost				Recommendation			
Fuel Price \$/gal	1. Cost of Energy (\$5)	2. Match (15)	3. Tech & Econ Feas (20)	4. Readiness (5)	5. Benefit (15)	6. Local Supt (5)	7. Sustainability (5)	Total (100)	State-wide Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recomnd	Early	Recommend Funding	Cumulative Funding
	6.78	15.00	18.87	5.00	12.88	5.00	5.00	68.52	15	\$21,772,523	\$3,453,920	\$13,591,226	Construction	Partial-REFAC**		\$1,760,019	\$1,760,019
\$5.19	22.71	15.00	11.63	4.50	5.25	5.00	3.83	67.93	19	\$362,805	\$318,289	\$411,835	DesignConstruction	FULL		\$318,289	\$2,078,308
									15				Construction	FULL**		\$1,693,901	\$3,772,209
	6.61	15.00	14.63	2.00	11.25	4.00	3.83	57.33	39	\$2,350,000	\$35,750	\$35,750	Recon	FULL		\$35,750	\$3,807,959
	9.81	9.00	12.20	1.50	11.63	5.00	3.00	52.14	51	\$8,340,000	\$54,000	\$6,000	Recon	PARTIAL		\$35,000	\$3,842,959
\$4.06	17.76	7.00	10.93	3.00	1.00	5.00	4.00	48.69	56	\$3,244,225	\$367,965	\$25,800	Design	FULL	Y	\$367,965	\$4,210,924
	6.78	15.00	12.30	0.00	8.25	2.00	4.00	48.33	57	TBD	\$150,000	\$100,000	Recon	PARTIAL		\$50,000	\$4,260,924
\$3.71	16.23	11.00	8.73	3.00	0.75	2.00	4.17	45.88	60	\$152,867	\$127,065	\$25,802	DesignConstruction	PARTIAL SP		\$97,000	\$4,357,924
	4.59	9.00	11.53	4.50	4.88	5.00	5.00	44.50	62	\$250,000	\$225,000	\$25,000	Construction	FULL		\$225,000	\$4,582,924
										\$1,940,558	\$1,560,558	\$120,000	Construction	Did Not Pass Stage 2			
										\$31,500,000	\$213,750	\$11,250	Feasibility	Did Not Pass Stage 2			
										\$69,912,978	\$6,506,297	\$14,352,663				\$4,582,924	
\$3.59	15.71	15.00	16.10	5.00	10.75	5.00	4.83	72.39	6	\$232,620	\$232,620	\$1,021,393	DesignConstruction	FULL		\$232,620	\$232,620
\$5.85	25.59	7.00	14.77	2.00	12.00	4.00	4.00	69.36	13	\$1,423,292	\$208,073	\$20,000	Design	PARTIAL	Y	\$175,000	\$407,620
\$3.59	15.71	11.00	16.87	3.67	13.00	5.00	3.50	68.74	14	\$1,957,261	\$1,412,889	\$353,222	Construction	PARTIAL SP		\$620,000	\$1,027,620
	27.14	7.00	14.60	2.00	11.63	2.00	3.83	68.20	17	\$300,000	\$275,000	\$25,000	ReconFeasibility	PARTIAL SP		\$80,000	\$1,107,620
\$4.09	17.89	9.00	17.70	3.83	12.63	2.00	4.50	67.55	20	\$1,374,892	\$1,237,403	\$137,448	DesignConstruction	FULL SP		\$1,237,403	\$2,345,023
\$5.05	22.09	11.00	13.53	2.00	8.88	5.00	4.17	66.67	23	\$335,456	\$286,166	\$49,290	DesignConstruction	PARTIAL SP	Y	\$103,000	\$2,448,023
\$3.80	16.63	11.00	15.33	3.00	9.75	5.00	4.00	64.71	27	\$1,058,775	\$940,950	\$177,825	Construction	FULL SP		\$940,950	\$3,388,973
\$4.20	18.38	7.00	15.57	3.00	13.50	3.00	3.50	63.95	29	\$627,900	\$583,900	\$44,000	DesignConstruction	PARTIAL SP	Y	\$125,000	\$3,513,973
	4.47	15.00	16.23	3.00	11.25	5.00	5.00	59.95	37	\$13,391,869	\$4,000,000	\$8,813,869	DesignConstruction	PARTIAL SP		\$560,488	\$4,074,461
\$3.59	15.71	15.00	12.23	5.00	1.75	5.00	4.83	59.53	38	\$230,200	\$230,200	\$192,891	DesignConstruction	FULL		\$230,200	\$4,304,661
\$3.80	16.63	11.00	13.27	3.00	6.38	2.00	3.50	55.77	40	\$585,450	\$492,850	\$82,550	DesignConstruction	PARTIAL SP	Y	\$125,000	\$4,429,661
\$3.59	15.71	15.00	10.97	4.00	0.50	5.00	4.17	55.34	42	\$388,838	\$373,838	\$825,000	DesignConstruction	PARTIAL SP	Y	\$56,841	\$4,486,502
	4.47	7.00	18.07	2.00	13.13	5.00	3.67	53.33	47	\$170,583	\$158,771	\$11,812	ReconFeasibility	FULL		\$158,771	\$4,645,273
\$4.12	18.03	11.00	9.87	4.00	0.63	4.00	4.50	52.02	52	\$825,000	\$660,000	\$165,000	DesignConstruction	FULL		\$660,000	\$5,305,273
\$3.59	15.71	9.00	11.53	5.00	0.75	5.00	4.83	51.83	53	\$962,984	\$849,984	\$113,000	DesignConstruction	FULL		\$849,984	\$6,155,257
										\$3,562,772	\$62,272	\$3,500	Recon	Did Not Pass Stage 2			
										\$825,000	\$700,000	\$125,000	ReconFeasibility	Did Not Pass Stage 2			
										\$51,000,000	\$4,000,000	\$4,000,000	DesignConstruction	Not Recommended			
										\$14,500,000	\$213,536	\$10,000	Feasibility	Not Recommended			
										\$14,510,599	\$9,281,615	\$0	DesignConstruction	Not Recommended			
										\$49,000,000	\$3,378,500	\$0	Feasibility	Not Recommended			
										\$157,263,491	\$29,578,567	\$16,170,800				\$6,155,257	
\$8.50	35.00	6.00	17.03	4.00	11.25	4.00	3.33	80.62	3	\$204,428	\$198,474	\$11,908	DesignConstruction	FULL		\$198,474	\$198,474
\$6.02	26.34	6.00	17.60	3.83	14.13	5.00	4.50	77.40	4	\$3,144,200	\$3,096,898	\$47,302	Construction	FULL SP		\$3,096,898	\$3,295,372
	21.46	11.00	17.00	2.50	12.50	2.00	4.17	70.63	10	\$148,800	\$119,000	\$29,800	Feasibility	FULL		\$119,000	\$3,414,372
	21.46	15.00	11.67	3.00	11.25	5.00	3.17	70.54	11	\$19,000,000	\$6,000,000	\$11,500,000	Construction	PARTIAL		\$75,000	\$3,489,372
\$5.00	21.88	15.00	13.87	3.00	5.38	5.00	3.17	67.29	22	\$403,550	\$274,750	\$278,800	DesignConstruction	FULL SP		\$274,750	\$3,764,122
\$5.00	21.88	6.00	16.03	3.83	9.00	4.00	3.50	64.25	28	\$332,590	\$322,903	\$19,374	DesignConstruction	FULL		\$322,903	\$4,087,025
\$7.15	31.28	6.00	11.53	4.00	1.25	5.00	2.83	61.90	35	\$497,773	\$497,773	\$14,933	DesignConstruction	FULL		\$497,773	\$4,584,798
\$3.79	16.58	6.00	11.97	4.00	3.38	2.00	4.00	47.92	59	\$629,000	\$625,000	\$4,000	DesignConstruction	FULL		\$625,000	\$5,209,798
										\$24,360,341	\$11,134,798	\$11,906,117				\$5,209,798	
										\$524,085,270	\$93,011,953	\$57,294,853				\$41,593,701	



Kotzebue Electric Association Wind Farm
Alaska Energy Authority

Renewable Energy Fund Round VII—Recommendations and Funding

								Ben / Cost			
Count	Energy Region		ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 2 Score	AEA B/C	Appl B/C	Cost of Energy (\$/kWh)
1	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro	94.33	7.11	0.89	\$0.15
2	H	Railbelt	1031	Seldovia House Ground Source Heat Pump Project	Cook Inlet Housing Authority	Government Entity	Heat Pumps	58.17	1.12	0.94	\$0.20
1	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro				
3	S	Railbelt	1084	Juniper Creek Hydroelectric Reconnaissance Study	Ram Valley, LLC	IPP	Hydro	73.17	2.45	3.49	\$0.15
4	S	Railbelt	1028	Carlo Creek Hydroelectric Project Reconnaissance Study	Native Village of Cantwell	Government Entity	Hydro	61.00	1.90	1.88	\$0.22
5	H	Railbelt	1009	Nenana Collaborative Biomass Heating System Project	Nenana School District	Government Entity	Biomass	54.67	0.66	1.11	\$0.22
6	S	Railbelt	1081	Waste to Energy Reconnaissance Study	Chugach Electric Association, Inc.	Utility	Biomass	61.50	1.31	1.34	\$0.15
7	H	Railbelt	1078	Chickaloon Solar Thermal and Biomass Project	Chickaloon Native Village	Government Entity	Biomass	43.67	0.74	0.79	\$0.15
8	H	Railbelt	1055	Alaska SeaLife Center Heat Recovery Project	City of Seward	Local Government	Heat Recovery	57.67	1.13	4.41	\$0.11
9	S	Railbelt	1002	Poncelot Kinetics RHK100 Prototype Demonstration	Whitestone Power and Communications	IPP	Hydrokinetic	39.17	0.16	0.16	\$0.22
10	S	Railbelt	1029	Jack River Hydroelectric Project Feasibility Study	Native Village Of Cantwell	Government Entity	Hydro	35.33	0.79	1.21	\$0.22
	10	Railbelt Total									
1	H	Southeast	1011	Sitka Centennial Hall Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	80.50	1.69	3.58	\$0.09
2	H	Southeast	1087	Kake Community Energy	Organized Village of Kake	Government Entity	Biomass	73.83	1.62	1.18	\$0.62
3	H	Southeast	1037	Ketchikan Gateway Borough Biomass Heating Project	Ketchikan Gateway Borough	Local Government	Biomass	84.33	2.15	0.24	\$0.10
4	S	Southeast	1025	Gunnuk Creek Hydroelectric Feasibility Study	Inside Passage Electric Cooperative	Utility	Hydro	73.00	4.28	0.00	\$0.62
5	H	Southeast	1021	Haines Borough Municipal Buildings Biomass Project	Haines Borough	Local Government	Biomass	88.50	1.72	1.79	\$0.22
6	H	Southeast	1053	Yakutat Biomass District Heating Loop	City and Borough of Yakutat	Local Government	Biomass	67.67	1.45	2.31	\$0.50
7	H	Southeast	1017	Southeast Island School District Wood Boilers	Southeast Island School District	Government Entity	Biomass	76.67	1.47	2.32	\$0.41
8	H	Southeast	1016	Hydaburg Schools Wood Fired Boiler Project	Hydaburg City School District	Government Entity	Biomass	77.83	1.91	2.45	\$0.24
9	S	Southeast	1023	Swan Lake Reservoir Expansion Project	The Southeast Alaska Power Agency	Government Entity	Hydro	81.17	4.07	4.07	\$0.10
10	H	Southeast	1013	Sitka Kettleson Library Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	61.17	0.91	1.87	\$0.09
11	H	Southeast	1010	Craig High School Wood Heat Conversion	Craig City School District	Government Entity	Biomass	66.33	1.12	1.54	\$0.29
12	H	Southeast	1033	Sitka Sea Water Source Heat Pump Project	City and Borough of Sitka		Heat Pumps	54.83	0.50	0.52	\$0.09
13	S	Southeast	1022	SEAPA Wind Resource Assessment Phase I and II	The Southeast Alaska Power Agency	Government Entity	Wind	90.33	1.84		\$0.10
14	H	Southeast	1007	Mendenhall Valley Library Geothermal HVAC System	City & Borough of Juneau	Local Government	Heat Pumps	49.33	0.86	0.74	\$0.12
15	H	Southeast	1012	Sitka Wastewater Treatment Plant Effluent Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	57.67	0.73	1.06	\$0.09
16	S	Southeast	1019	Survey Creek Hydroelectric Project	Edna Bay Community	Local Government	Hydro	39.33	1.48	1.37	N/A
17	S	Southeast	1024	Walker Lake Hydro Project Feasibility	Tlingit-Haida Regional Electrical Authority	Utility	Hydro	39.00	1.05		\$0.62
18	S	Southeast	1003	Mahoney Lake Hydroelectric Phase III and IV	City of Saxman	Local Government	Hydro		1.79	6.91	\$0.10
19	S	Southeast	1020	Excursion Inlet Hydro Project Feasibility and Conceptual Design	Haines Borough	Local Government	Hydro		0.09	3.93	N/A
20	S	Southeast	1034	Metlakatla to Ketchikan Intertie	Metlakatla Indian Community	Government Entity	Transmission		1.77	1.28	\$0.10
21	S	Southeast	1035	Feasibility Study of Tenakee Inlet Geothermal Resource	Inside Passage Electric Cooperative	Utility	Geothermal		0.44	1.24	\$0.65
	21	Southeast Total									
1	H	Yukon-Koyukok/Upper Tanana	1044	Venetie Clinic Heat Recovery	Village of Venetie	Government Entity	Heat Recovery	85.17	1.68	2.45	\$0.90
2	H	Yukon-Koyukok/Upper Tanana	1047	Galena Community Wood Heat Project	City of Galena	Local Government	Biomass	88.00	4.31	3.96	\$0.56
3	S	Yukon-Koyukok/Upper Tanana	1027	Chisana Mountain Wind Feasibility Project	Alaska Power Company	Utility	Wind	85.00	2.55		\$0.49
4	S	Yukon-Koyukok/Upper Tanana	1077	Yerrick Creek Hydroelectric Project	Native Village of Tanacross	Government Entity	Hydro	58.33	4.23	9.84	\$0.49
5	H	Yukon-Koyukok/Upper Tanana	1032	Biomass Heat for Minto Community Buildings	Village of Minto	Government Entity	Biomass	69.33	1.02	1.37	\$0.59
6	H	Yukon-Koyukok/Upper Tanana	1045	Grayling Heat Recovery System	City of Grayling	Government Entity	Heat Recovery	80.17	1.47	2.02	\$0.56
7	H	Yukon-Koyukok/Upper Tanana	1060	Holy Cross Water System Heat Recovery	City of Holy Cross	Government Entity	Heat Recovery	57.67	0.55	0.74	\$0.53
8	H	Yukon-Koyukok/Upper Tanana	1051	AGSD Extension of Heating Loop	Alaska Gateway School District	Government Entity	Heat Recovery	59.83	0.97	1.45	\$0.49
	8	Yukon-Koyukok/Upper Tanana Total									
	86	Grand Total									

Notes

This document represents AEA's final recommendations following advisement from the REFAC committee on January 7, 2014.

If REF 7 funding is limited to \$20M exactly, #1082 Stetson Creek Diversion Cooper Lake Dam Facilities Project and #1015 Allison Creek Hydroelectric Project Construction will be partially funded at approximately 50% and 80% of AEA's Full Funding Recommendations

** #1082 Stetson Creek Diversion Cooper Lake Dam Facilities Project is recommended by AEA staff to be fully funded. If REF7 allocations are greater than the Governor's budget of \$20m, the REFAC recommends funding the remaining grant requested funding of \$1,693.901.

++ #1015 Allison Creek Hydroelectric Project Construction is recommended by AEA staff to be fully funded. If REF7 allocations are greater than the Governor's budget of \$20m, the REFAC recommends funding the remaining grant requested funding of \$1,149,831

H = Heat application, applications that deliver heat only, not electricity. These applications are highlighted in orange, with a dark orange representing those applications recommended by the REFAC to fit within the Governor's budget of \$20M allocation for REF Round VII.

S = Standard application, applications that deliver electricity, energy storage, transmission or a combination of electricity and heat. These applications are highlighted in blue, with a dark blue representing those applications recommended by the REFAC to fit within the Governor's budget of \$20M allocation for REF Round VII.

Total Stage 2 Score column is the technical and economic evaluation score and is on a scale of 0 to 100. A minimum score of 40 is required to pass stage 2.

B/C = Benefit/Cost Ratio over the life of the project.

AEA B/C ratio uses AEA's best assumptions in the standard REF economic model

Some not recommended projects' B/C ratios may be incomplete due to incomplete information provided or other reasons.

The Applicant B/C ratio uses the applicants assumptions in the standard Renewable Energy Fund economic model.

SP = Special Provisions

Match offered is applicant's offered cash and in-kind match, including supporting energy efficiency work and wood harvest value where applicable.

Performance & Savings

Figure 5 shows the net present value of only those Renewable Energy Fund projects that are currently operating. Many of the 36 projects represented received initial funding in Rounds I and II of the REF. More than 40 percent of currently operating projects are wind, a relatively large share compared to hydroelectric projects which represent 8 percent of total operating projects. This reflects the fast pace of wind development relative to hydro development which can take several years. In years to come we anticipate that this graph will indicate growth in hydroelectric projects.

The net present value of the capital expenditure to build these projects is \$290 million and net present benefits are \$840 million. For every dollar invested, these projects are returning benefits of nearly \$2.90. It is important to note that the state Renewable Energy Fund only paid \$82.3M of total project costs associated with these projects. For every REF dollar invested, the projects are attracting \$3.50 of other investment and returning benefits of \$10.20.

2013 was a significant year of growth in renewable energy produced by Renewable Energy Fund projects, as depicted in Figure 6 below. 12.7 million gallons of diesel fuel (equivalent) were saved in 2013, with a projected increase of nearly 3.5 million gallons per year for the next two years based upon projected construction completion dates and anticipated performance. Projects funded in 2014 and future years will continue to increase the savings.

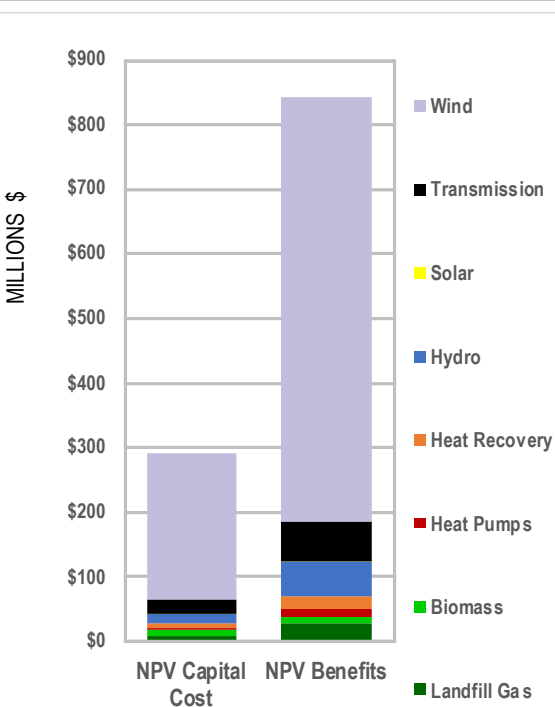


Figure 5.

Table 2 on the following page provides performance summaries for each project that is in operation.

Actual and Projected 2009—2016

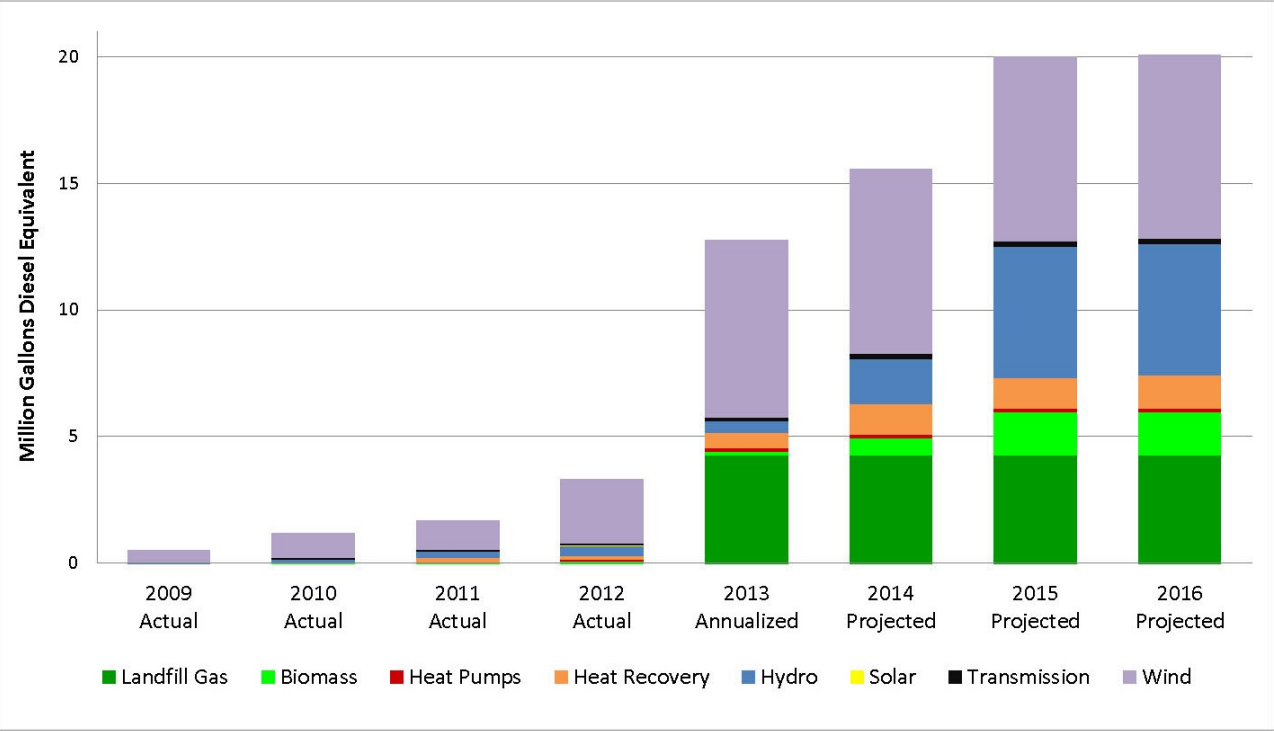


Figure 6.

Performance of Renewable Energy Fund Projects in Operation

Technology Type Grantee Project Name Operation Start Date				2011			
				Energy Production		Fuel Displaced	
				Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value (\$ x 1000)
LANDFILL GAS	Municipality of Anchorage	Anchorage Landfill Gas Electricity	2012 Aug	-	-	-	\$ -
HYDRO	City of Alaska	Chunisax Creek Hydroelectric	2012 Dec	-	-	-	\$ -
HYDRO	Cordova Electric Cooperative	Humpback Creek Hydroelectric Project Rehabilitation	2011 Jul	1,563	-	114.9	\$ 410.3
HYDRO	Gustavus Electric Company	Falls Creek Hydroelectric Construction	2009 Jul	1,933	-	138.1	\$ 483.3
SOLAR	Alaska Village Electric Cooperative	Kaltag Solar Construction	2012 Oct	-	-	-	\$ -
TRANSMISSION	Alaska Power and Telephone	North Prince of Wales Island Intertie Project	2011 Sep	311	-	16.4	\$ 67.0
TRANSMISSION	Nome Joint Utility System	Nome Banner Peak Wind Farm Transmission	2010 Oct	955	-	53.9	\$ 151.6
WIND	Alaska Environmental Power	Delta Area Wind Turbines	2010 Sep	1,641	-	95.9	\$ 256.1
WIND	Alaska Village Electric Cooperative	Toksook Wind Farm	2009 Aug	560	-	37.7	\$ 129.1
WIND	Alaska Village Electric Cooperative	Mekeyuk Wind Farm	2010 Nov	239	-	13.7	\$ 49.5
WIND	Alaska Village Electric Cooperative	Quinhagak Wind Farm	2010 Nov	409	-	28.9	\$ 105.6
WIND	Alaska Village Electric Cooperative	Emmonak/Alakanuk Wind	2011 Sep	63	-	4.5	\$ 17.7
WIND	Alaska Village Electric Cooperative	Shaktolik Wind Construction	2012 Apr	-	-	-	\$ -
WIND	Golden Valley Electric Association	GVEA Eva Creek Wind Turbine Purchase	2012 Oct	-	-	-	\$ -
WIND	Kodiak Electric Association, Inc.	Pillar Mountain Wind Project	2010 Sep	12,448	-	870.7	\$ 2,873.3
WIND	Kotzebue Electric Association	Kotzebue High Penetration Wind-Battery-Diesel Hybrid	2012 May	-	-	-	\$ -
WIND	Nome Joint Utility System	Banner Peak Wind Farm Expansion	2013 Jul	-	-	-	\$ -
Sub Total Electric Only				20,122	-	1,375	\$ 4,543.5
WIND	Aleutian Wind Energy	Sand Point Wind	2011 Aug	196	-	14.3	\$ 64.9
WIND	Kwigillingok Power Company	Kwigillingok High Penetration Wind-Diesel Smart Grid	2012 Feb	-	-	-	\$ -
WIND	Puvurnaq Power Company	Kongiganak High Penetration Wind-Diesel Smart Grid	2010 Dec	88	-	6.6	\$ 30.1
WIND	Tuntutuliak Comm Svcs Assoc	Tuntutuliak High Penetration Wind-Diesel Smart Grid	2013 Jan	-	-	-	\$ -
WIND	Unalakleet Valley Electric Co	Unalakleet Wind Farm	2009 Dec	958	-	58.2	\$ 211.2
Sub Total Electric and Heat				1,242	-	79	\$ 306.2
BIOMASS	Alaska Gateway School District	Tok Wood Heating	2010 Oct	-	3,217	24.4	\$ 92.0
BIOMASS	Chilkoot Indian Association	Haines (Chilkoot) Central Wood Heating System Construction	2011 Oct	-	-	-	\$ -
BIOMASS	Delta/Greely School District	Delta Junction Wood Chip Heating	2011 Sep	-	-	-	\$ -
BIOMASS	Gulkana Village Council	Gulkana Central Wood Heating	2010 Oct	-	780	5.9	\$ 23.5
BIOMASS	Native Village of Eyak	Cordova Wood Processing Plant	2011 Dec	-	1,500	11.4	\$ 42.0
HEAT PUMPS	City and Borough of Juneau	Juneau Airport Ground Source Heat Pump	2011 May	-	5,117	37.1	\$ 130.5
HEAT PUMPS	City and Borough of Juneau	Juneau Aquatic Ctr. Ground Source Heat Pump	2011 Apr	-	-	-	\$ -
HEAT PUMPS	City of Seward	Alaska Sealife Center Ph II Seawater Heat Pump Project	2011 Nov	-	-	-	\$ -
HEAT RECOVERY	Golden Valley Electric Association	North Pole Heat Recovery	2009 Nov	-	5,249	61.5	\$ 171.5
HEAT RECOVERY	Inside Passage Electric Cooperative	Hoonah Heat Recovery Project	2012 Aug	-	-	-	\$ -
HEAT RECOVERY	McGrath Light & Power Company	McGrath Heat Recovery	2010 May	-	2,896	23.0	\$ 156.7
HEAT RECOVERY	City and Borough of Wrangell	Wrangell Hydro Based Electric Boilers	2011 Feb	-	6,889	66.0	\$ 230.3
SOLAR	Golden Valley Electric Association	McKinley Village Solar Thermal	2010 Jun	-	134	1.8	\$ 7.1
Sub Total Heat Only					25,782	231	\$ 853.6
TOTAL				21,364	25,782	1,684.9	\$ 5,703.3

- Notes
- The energy production data provided for years 2012 and 2013 is net renewable energy produced by Renewable Energy Fund projects. All previous years reflect gross renewable energy.

*2013 data represents the first three quarters of the year. An updated report will be published in March 2014.

Data for wind turbines in Toksook Bay represent only the portion covered by the REF grant in years 2012 and 2013. In year 2011, the data represents production from all wind turbines; the REF program funded only one of the four wind turbines installed.

Some Delta Area Wind Turbines needed repairs in 2013 and were not in operation for a period of time, hence production in 2013 was significantly lower than in previous years.

Data for the following projects in operation is not reported:

 - City of Akutan Town Creek Hydro Repairs and Upgrade did not report performance data in 2013.
 - Cordova Electric Cooperative Cordova Heat Recovery was commercialized but shut down one week after it started-up. The Organic Rankine Cycle commenced the start-up process on June 1,
- 2012. Because Cordova Electric operates on hydroelectric power throughout the summer and fall, the ORC will not be fully commissioned until late fall 2013. Initial runs show that the system was operating as designed.
 - Golden Valley Electric North Pole Heat Recovery did not report performance data for 2013.
 - Gulkana Village Council Gulkana Central Wood Heating Construction started operation and was commissioned in the 4th quarter of 2010. However, due to repairs to the system in 2013, performance data was not submitted by the applicant. Data reported in this table represents operation information from 2010 to 2012.
 - Lake and Peninsula Borough Lake and Peninsula Wood Boilers.
 - Native Village of Eyak Cordova Wood Processing Plant provided 2013 data on January 28th, 2014. The information will be incorporated in the next report update.
 - Southeast Island School District Thorne Bay School Wood Fired Boiler Project started generating energy 4th Quarter 2012 but the system was not in operation in 2013 due to wet wood conditions.

for Heat and Standard Applications by Energy Region

Table 5.

Stage 3 Review Scores (max)										Project Cost				Recommendation			
Fuel Price \$/gal	1. Cost of Energy (35)	2. Match (15)	3. Tech & Econ Feas (20)	4. Readiness (5)	5. Benefit (15)	6. Local Supt (5)	7. Sustainability (5)	Total (100)	State-wide Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recommendation	Early	Recommend Funding	Cumulative Funding
\$7.65	33.47	11.00	16.57	5.00	12.00	3.00	4.00	85.04	1	\$135,254	\$114,965	\$20,289	Construction	FULL		\$114,965	\$114,965
	12.26	15.00	14.23	2.83	7.63	5.00	5.00	61.95	34	\$5,500,000	\$800,000	\$1,900,000	Construction	FULL SP		\$800,000	\$914,965
	22.45	13.00	8.57	2.50	0.75	5.00	2.50	54.77	43	\$5,000,000	\$428,646	\$137,820	Feasibility	FULL		\$428,646	\$1,343,611
	22.55	9.00	9.50	3.00	4.125	2.00	4.00	54.18	45	\$1,397,403	\$1,256,403	\$141,000	DesignConstruction	PARTIAL SP	Y	\$200,000	\$1,543,611
	22.45	9.00	9.27	2.50	0.38	4.00	1.67	49.26	55	\$52,050	\$47,050	\$5,000	Feasibility	FULL SP		\$47,050	\$1,590,661
										\$72,400,000	\$160,000	\$0	Feasibility	Did Not Pass Stage 2			
										\$84,484,707	\$2,807,064	\$2,204,109				\$1,590,661	
	24.42	7.00	16.67	3.00	11.63	5.00	4.50	72.21	7	\$3,946,050	\$342,000	\$18,000	Design	FULL		\$342,000	\$342,000
\$5.29	23.14	6.00	16.60	5.00	10.25	4.00	3.17	68.16	18	\$753,313	\$731,372	\$21,941	DesignConstruction	FULL		\$731,372	\$1,073,372
										\$4,699,363	\$1,073,372	\$39,941				\$1,073,372	
	30.26	11.00	17.27	5.00	11.00	5.00	3.83	83.36	2	\$5,389,149	\$2,352,653	\$3,036,496	Construction	FULL		\$2,352,653	\$2,352,653
	35.00	13.00	9.40	2.50	0.00	3.00	3.17	66.07	25	\$110,000	\$80,000	\$30,000	Feasibility	FULL SP		\$80,000	\$2,432,653
	22.09	6.00	10.47	3.83	4.13	2.00	3.17	51.68	54	\$2,566,000	\$306,000	\$10,000	Design	FULL SP	Y	\$306,000	\$2,738,653
	20.81	0.00	10.43	3.50	4.88	0.00	4.00	43.62	63	BLANK	\$1,375,000	\$0	Design	PARTIAL SP		\$500,000	\$3,238,653
										\$1,940,379	\$1,843,379	\$97,000	FeasDesignConstructio	Not Recommended			
										\$7,224,213	\$159,000	\$10,000	ReconFeasibility	Not Recommended			
										\$235,000	\$230,000	\$5,000	DesignConstructio	Not Recommended			
										\$2,000,000	\$800,000	\$120,000	ReconFeasibility	Not Recommended			
										\$19,464,741	\$7,146,032	\$3,308,496				\$3,238,653	
	12.44	15.00	17.87	4.00	12.13	2.00	5.00	68.43	16	\$49,000,000	\$5,914,491	\$5,914,491	Construction	Partial-REFAC++		\$4,764,652	\$4,764,652
									16				Construction	FULL ++		\$1,149,839	\$5,914,491
\$4.17	18.24	6.00	12.90	3.00	6.25	4.00	3.00	53.39	46	\$278,150	\$267,150	\$11,000	DesignConstructio	PARTIAL SP	Y	\$125,000	\$6,039,491
	12.44	11.00	9.17	3.00	6.38	5.00	1.33	48.32	58	\$2,250,000	\$170,000	\$30,000	Feasibility	FULL		\$170,000	\$6,209,491
										\$1,650,000	\$1,400,000	\$0	DesignConstructio	Not Recommended			
										\$53,178,150	\$7,751,641	\$5,955,491				\$6,209,491	
	25.21	7.00	11.27	2.00	5.38	5.00	4.50	60.35	36	\$8,155,000	\$1,092,500	\$57,500	Design	PARTIAL		\$400,000	\$400,000
	8.32	15.00	13.37	3.50	3.25	5.00	4.00	52.44	48	\$3,800,000	\$1,900,000	\$1,900,000	Construction	PARTIAL SP		\$1,470,548	\$1,870,548
										\$1,300,000	\$81,000	\$300	FeasibilityDesign	Did Not Pass Stage 2			
										\$13,255,000	\$3,073,500	\$1,957,800				\$1,870,548	
\$4.38	19.16	13.00	17.53	3.00	12.50	5.00	3.50	73.69	5	\$603,000	\$450,000	\$153,000	Construction	FULL		\$450,000	\$450,000
\$6.80	29.75	6.00	16.27	3.83	10.13	3.00	3.00	71.98	8	\$469,311	\$455,642	\$13,669	DesignConstructio	FULL		\$455,642	\$905,642
\$5.77	25.24	6.00	17.53	4.00	12.50	3.00	2.67	70.94	9	\$689,251	\$689,251	\$20,677	Construction	FULL SP		\$689,251	\$1,594,893
	23.80	7.00	15.83	2.50	11.63	5.00	4.50	70.26	12	\$4,833,000	\$123,500	\$6,500	Feasibility	FULL		\$123,500	\$1,718,393
\$4.60	20.13	6.00	17.03	3.83	11.25	5.00	4.17	67.41	21	\$757,299	\$735,242	\$22,057	DesignConstructio	FULL		\$735,242	\$2,453,635
\$6.21	27.17	6.00	14.83	2.83	12.38	0.00	3.00	66.21	24	\$320,456	\$311,456	\$9,000	Construction	FULL SP		\$311,456	\$2,765,091
\$4.30	18.81	6.00	17.07	3.00	12.50	5.00	2.83	65.21	26	\$558,814	\$558,814	\$16,765	DesignConstructio	FULL SP		\$558,814	\$3,323,905
	35.00	7.00	10.60	2.00	4.50	2.00	1.67	62.77	30	\$8,000,000	\$375,000	\$25,000	ReconFeasibility	PARTIAL		\$75,000	\$3,398,905
	21.60	9.00	13.00	5.00	4.50	5.00	4.33	62.43	31	\$4,782,528	\$4,274,575	\$507,953	Construction	FULL SP		\$4,274,575	\$7,673,480
\$5.95	26.03	6.00	12.83	2.83	10.00	2.00	2.50	62.20	32	\$302,737	\$293,737	\$9,000	Construction	FULL SP		\$293,737	\$7,967,217
\$3.89	17.02	6.00	14.03	5.00	4.50	5.00	3.83	55.39	41	\$297,408	\$288,745	\$8,663	DesignConstructio	FULL		\$288,745	\$8,255,962
\$6.80	29.75	6.00	9.33	2.83	2.13	2.00	2.50	54.54	44	\$259,817	\$250,817	\$9,000	Construction	FULL SP		\$250,817	\$8,506,779
	22.05	7.00	10.43	2.50	1.50	5.00	3.83	52.32	49	\$3,214,875	\$353,400	\$18,600	Design	FULL SP		\$353,400	\$8,860,179
										\$232,430	\$225,660	\$6,770	DesignConstructio	Not Recommended			
										\$1,250,000	\$1,250,000	\$0	Feasibility	Did Not Pass Stage 1			
										\$2,284,000	\$141,000	\$20,000	DesignConstructio	Did Not Pass Stage 1			
										\$4,358,784	\$4,308,784	\$50,000	DesignConstructio	Did Not Pass Stage 1			
										\$33,213,710	\$15,085,623	\$896,654				\$8,860,179	
	6.56	9.00	14.83	2.50	12.38	2.00	5.00	52.27	50	\$17,342,837	\$2,017,818	\$201,782	Design	FULL SP		\$2,017,818	\$2,017,818
	6.56	9.00	13.17	3.00	4.00	2.00	4.50	42.23	64	\$4,565,200	\$440,000	\$44,000	Design	FULL		\$440,000	\$2,457,818
										\$21,908,037	\$2,457,818	\$245,782				\$2,457,818	
\$6.07	26.56	7.00	12.57	2.00	6.00	5.00	3.00	62.13	33	\$2,692,700	\$2,495,189	\$95,000	DesignConstructio	PARTIAL SP	Y	\$270,000	\$270,000
	18.27	6.00	9.20	4.50	0.38	3.00	4.50	45.85	61	\$77,000	\$76,000	\$1,000	Construction	FULL SP		\$75,000	\$345,000
										\$38,660,000	\$2,922,000	\$150,000	Design	Did Not Pass Stage 2			
										\$447,800	\$447,800	\$0	Construction	Not Recommended			
										\$467,252	\$456,252	\$11,000	Construction	Not Recommended			
										\$42,344,752	\$6,397,241	\$257,000				\$345,000	

Renewable Energy Fund Round VII—Recommendations and Funding

								Ben / Cost			
							Total Stage 2 Score	AEA B/C	Appl B/C	Cost of Energy (\$/kWh)	
Count		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source				
1	H	Aleutians	1026	Atka Dispatchable Heat	City of Atka	Local Government	Hydro to Heat	82.83	3.18	6.90	\$0.70
2	S	Aleutians	1083	Waterfall Creek Hydroelectric Project	City of King Cove	Local Government	Hydro	71.17	1.37	1.87	\$0.28
3	S	Aleutians	1062	False Pass Hydrokinetic Feasibility Study	City of False Pass	Local Government	Hydrokinetic	42.83	0.22	0.22	\$0.51
4	S	Aleutians	1070	Sand Point Energy Storage Project	TDX Sand Point Generating, LLC	Utility	Storage of Renew	47.50	1.08	1.01	\$0.58
5	S	Aleutians	1080	False Pass Wind Energy Project	City of False Pass Electric Utility	Local Government	Wind	46.33	0.67	0.61	\$0.51
6	S	Aleutians	1056	Adak Wind Data Collection Analysis and Preliminary Design	City of Adak, Alaska	Local Government	Wind	35.33	0.47	0.27	\$0.81
6	Aleutians Total										
1	S	Bering Straits	1068	Stebbins St Michael Wind Energy Final Design and Permitting	Alaska Village Electric Cooperative, Inc.	Utility	Wind	83.33	1.80	2.74	\$0.56
2	H	Bering Straits	1040	Brevig Mission Water System Heat Recovery	City of Brevig Mission	Government Entity	Heat Recovery	83.00	1.51	2.01	\$0.54
2	Bering Straits Total										
1	S	Bristol Bay	1036	Packers Creek Hydroelectric Project Phase II	Chignik Lagoon Village Council	Government Entity	Hydro	86.33	1.66	3.85	\$0.69
2	S	Bristol Bay	1072	Igiugig Wind Resource Feasibility and Conceptual Design	Igiugig Village Council	Government Entity	Wind	47.00	0.86	1.40	\$0.80
3	S	Bristol Bay	1079	Koliganek Wind Diesel and Heat Recovery	New Koliganek Village Council	Government Entity	Wind	52.33	1.05	1.60	\$0.51
4	S	Bristol Bay	1018	Chignik Hydroelectric Project Design and Permitting	City of Chignik	Local Government	Hydro	52.17	1.02	1.60	\$0.48
5	H	Bristol Bay	1006	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.	Utility	Heat Recovery		1.39	6.44	\$0.50
6	S	Bristol Bay	1046	Port Alsworth Hydropower PreConstruction Phase	Port Alsworth Improvement Corporation	Government Entity	Hydro		1.52		\$0.68
7	S	Bristol Bay	1050	Bristol Bay Borough School District Solar PV Project	Bristol Bay Borough School District	Government Entity	Solar PV		0.96	1.28	\$0.50
8	S	Bristol Bay	1063	Iliamna Solar Ground Mounted Energy System	Iliamna Village Council	Government Entity	Solar PV		0.01	0.40	\$0.59
8	Bristol Bay Total										
1	S	Copper River/Chugach	1015	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro	89.33	3.96	3.68	\$0.28
1	S	Copper River/Chugach	1015	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro				
2	H	Copper River/Chugach	1014	Wood Chip Boiler for The Native Village of Tazlina	Native Village of Tazlina	Government Entity	Biomass	64.50	1.19	1.84	\$0.28
3	S	Copper River/Chugach	1075	Cascade Creek Hydroelectric Project Feasibility Study	Blue Hole Properties, LLC (BHP)	IPP	Hydro	45.83	1.30	3.46	\$0.28
4	S	Copper River/Chugach	1064	Chenega Bay Hydroelectric Construction	Native Village of Chenega	Government Entity	Hydro		1.14	1.02	\$0.44
4	Copper River/Chugach Total										
1	S	Kodiak	1065	Old Harbor Hydroelectric Project Final Design and Permitting	Alaska Village Electric Cooperative, Inc.	Utility	Hydro	56.33	1.11	1.79	\$0.58
2	S	Kodiak	1030	Flywheels ESS for Kodiak Pier Electric Crane	Kodiak Electric Association, Inc.	Utility	Storage of Renew	66.83	0.51	1.02	\$0.19
3	S	Kodiak	1004	Karluk Tribal Council Wind Energy System	Karluk Tribal Council	Government Entity	Wind	21.17	0.76	1.83	\$0.60
3	Kodiak Total										
1	H	Lower Yukon-Kuskokwim	1052	Nunam Iqua Heat Recovery Project	City of Nunam Iqua	Local Government	Heat Recovery	87.67	2.20	2.33	\$0.53
2	H	Lower Yukon-Kuskokwim	1085	Tuntutuliak Heat Recovery	Native Village of Tuntutuliak	Government Entity	Heat Recovery	81.33	1.54	2.32	\$0.65
3	H	Lower Yukon-Kuskokwim	1061	Emmonak Heat Recovery System	City of Emmonak	Government Entity	Heat Recovery	87.67	2.56	4.02	\$0.55
4	S	Lower Yukon-Kuskokwim	1067	Mountain Village Wind Feasibility and Conceptual Design	Alaska Village Electric Cooperative, Inc.	Utility	Wind	79.17	1.70	1.23	\$0.54
5	H	Lower Yukon-Kuskokwim	1043	St Marys Heat Recovery System	City of St. Mary's	Government Entity	Heat Recovery	85.17	1.61	2.21	\$0.49
6	H	Lower Yukon-Kuskokwim	1073	Kongiganak Wind Heat Electrical Thermal Storage	Puvurnaq Power Company	Utility	Wind to Heat	74.17	1.70	2.55	\$0.56
7	H	Lower Yukon-Kuskokwim	1041	Chevak Water and Vacuum Plant Heat Recovery	City of Chevak	Government Entity	Heat Recovery	85.33	1.83	2.44	\$0.48
8	S	Lower Yukon-Kuskokwim	1057	Mertarvik Renewable Energy Feasibility and Conceptual Design	Ungusraq Power Company (UPC) / Newtok	IPP	Wind	53.00	1.14		\$0.80
9	S	Lower Yukon-Kuskokwim	1069	St Marys Pitkas Point Wind Energy Construction Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	65.00	1.19	1.47	\$0.49
10	H	Lower Yukon-Kuskokwim	1071	Kwigillingok Wind Heat Electrical Thermal Storage	Kwig Power Company	Utility	Wind to Heat	64.17	1.53	1.73	\$0.60
11	H	Lower Yukon-Kuskokwim	1042	Eek Water System Heat Recovery	City of Eek	Government Entity	Heat Recovery	70.17	1.01	1.35	\$0.60
12	H	Lower Yukon-Kuskokwim	1074	Tuntutuliak Wind Heat Electrical Thermal Storage	TCSA Electrical Services	Utility	Wind to Heat	46.67	1.00	0.96	\$0.65
13	S	Lower Yukon-Kuskokwim	1066	Marshall Wind Energy Final Design and Permitting Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	52.17	0.98	1.60	\$0.50
14	H	Lower Yukon-Kuskokwim	1008	Chuathbaluk Water System Heat Recovery	City of Chuathbaluk	Government Entity	Heat Recovery		0.97	0.98	\$0.85
15	S	Lower Yukon-Kuskokwim	1039	Four Villages Intertie Design	Nuvista Light and Electric Cooperative	Government Entity	Transmission				
16	S	Lower Yukon-Kuskokwim	1054	Multiple Alternative Energy Sources for Napakiak	Napakiak Ircinraq Power Company	Utility	Wind				
17	S	Lower Yukon-Kuskokwim	1086	Chefomak High Penetration Wind Diesel System	Naterqak Light Plant, City of Chefomak	Local Government	Wind				
17	Lower Yukon-Kuskokwim Total										
1	S	North Slope	1049	Atkasuk Transmission Line Design and Permitting Project	North Slope Borough	Local Government	Transmission	74.17	3.30	3.55	\$0.15
2	S	North Slope	1048	Kaktovik Wind Diesel Design and Permitting	North Slope Borough	Local Government	Wind	65.83	1.03	1.37	\$0.15
2	North Slope Total										
1	H	Northwest Arctic	1038	Kotzebue Paper and Wood Waste to Energy Project	City of Kotzebue	Local Government	Biomass	62.83	1.12	1.16	\$0.42
2	S	Northwest Arctic	1001	Northwest Arctic Borough Solar PV Project	Northwest Arctic Borough	Local Government	Solar PV	46.00	0.68	0.83	\$0.42
3	S	Northwest Arctic	1059	Cosmos Hills Hydroelectric Design and Permitting	Alaska Village Electric Cooperative	Utility	Hydro	27.50	0.71	1.05	\$0.74
4	S	Northwest Arctic	1058	Noatak Utility Size Photovoltaic Array Construction Project	Northwest Arctic Borough	Local Government	Solar PV		1.24	1.22	\$0.74
5	H	Northwest Arctic	1076	NWAB School District Solar Thermal Systems	Northwest Arctic Borough School District	Government Entity	Solar Thermal		1.48	3.14	\$0.63
5	Northwest Arctic Total										

Table 2.

Note: 9 months only for 2013											
2012				Jan - Sep, 2013				Cumulative Total (2009-Sep.2013)			
Energy Production		Fuel Displaced		Energy Production		Fuel Displaced		Energy Production		Fuel Displaced	
Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value (\$ x 1000)	Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value (\$ x 1000)	Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value (\$ x 1000)
-	-	-	\$ -	33,834	-	3,224.0	\$ 1,602.0	33,834	-	3,224.0	\$ 1,079.0
-	-	-	\$ -	285	-	21.9	\$ 118.4	285	-	21.9	\$ 118.4
3,510	-	270.0	\$ 1,050.6	2,933	-	225.6	\$ 809.6	8,006	-	610.5	\$ 2,270.5
1,966	-	150.4	\$ 645.3	1,490	-	114.6	\$ 481.1	8,044	-	583.8	\$ 2,143.7
-	-	-	\$ -	9	-	0.6	\$ 2.3	9	-	0.6	\$ 2.3
589	-	44.3	\$ 161.7	644	-	48.4	\$ 175.0	1,544	-	109.1	\$ 403.7
995	-	61.2	\$ 193.3	700	-	43.1	\$ 138.2	4,040	-	236.0	\$ 730.2
989	-	63.9	\$ 132.9	210	-	13.6	\$ 36.4	3,429	-	202.8	\$ 482.5
131	-	9.6	\$ 38.5	96	-	7.0	\$ 26.1	922	-	64.2	\$ 238.6
147	-	10.4	\$ 41.1	123	-	8.7	\$ 32.5	513	-	33.2	\$ 123.9
500	-	38.1	\$ 161.4	391	-	29.8	\$ 116.7	1,372	-	101.9	\$ 398.0
505	-	35.8	\$ 142.0	406	-	28.8	\$ 111.0	975	-	69.1	\$ 270.7
116	-	8.9	\$ 35.7	119	-	9.2	\$ 35.1	235	-	18.1	\$ 70.8
13,091	-	921.9	\$ 1,972.9	50,496	-	3,556.1	\$ 9,530.3	63,588	-	4,478.0	\$ 11,503.2
16,201	-	1,140.9	\$ 4,211.8	18,085	-	1,273.6	\$ 4,385.3	65,185	-	4,584.6	\$ 15,849.5
2,177	-	148.1	\$ 549.9	1,941	-	132.0	\$ 468.7	4,118	-	280.1	\$ 1,018.5
-	-	-	\$ -	635	-	38.8	\$ 124.6	635	-	38.8	\$ 124.6
40,908	-	2,904	\$ 9,337.1	112,395	-	8,776	\$ 18,193.3	196,732	-	14,657	\$ 36,828.1
792	-	58.1	\$ 266.2	950	15	69.7	\$ 321.9	1,937	15	142.2	\$ 653.0
-	-	-	\$ -	46	66	4.1	\$ 19.4	46	66	4.1	\$ 19.4
185	-	14.0	\$ 63.4	232	454	21.9	\$ 105.0	504	454	42.5	\$ 198.5
-	-	-	\$ -	136	221	10.4	\$ 47.4	136	221	10.4	\$ 47.4
938	-	67.8	\$ 247.6	626	204	47.2	\$ 179.8	3,250	204	226.4	\$ 777.2
1,914	-	140	\$ 577.2	1,988	960	153	\$ 673.5	5,873	960	426	\$ 1,695.5
-	4,595	44.0	\$ 147.0	-	7,141	68.7	\$ 250.6	-	16,371	152.1	\$ 540.6
-	212	1.7	\$ 6.8	-	231	2.4	\$ 10.4	-	453	4.2	\$ 17.3
-	3,977	38.2	\$ 133.5	-	3,458	33.2	\$ 132.6	-	7,435	71.5	\$ 266.2
-	780	7.0	\$ 28.9	-	-	-	\$ -	-	1,840	15.9	\$ 63.3
-	600	5.4	\$ 25.3	-	-	-	\$ -	-	2,820	24.4	\$ 95.4
-	5,400	45.0	\$ 159.0	-	5,400	45.0	\$ 159.0	-	15,917	127.1	\$ 448.5
-	1,740	16.7	\$ 61.4	-	3,068	29.5	\$ 124.8	-	4,808	46.2	\$ 186.2
-	-	-	\$ -	-	2,892	27.8	\$ 106.2	-	2,892	27.8	\$ 106.2
-	3,349	32.8	\$ 90.6	-	-	-	\$ -	-	9,595	106.0	\$ 285.2
-	-	-	\$ -	-	4,119	36.7	\$ 178.7	-	4,119	36.7	\$ 178.7
-	2,617	25.2	\$ 97.1	-	1,681	16.2	\$ 120.1	-	8,356	76.6	\$ 419.5
-	7,711	79.4	\$ 134.5	-	4,998	51.5	\$ 82.6	-	19,597	196.9	\$ 447.4
-	130	1.9	\$ 7.6	-	108	0.8	\$ 6.8	-	433	5.0	\$ 23.0
-	31,111	297	\$ 891.7	-	33,096	312	\$ 1,171.8	-	94,636	890	\$ 3,077.5
42,821	31,111	3,341.0	\$ 10,806.1	114,394	71,126	9,571.1	\$ 21,646.6	202,605	95,596	15,972.7	\$ 41,601.1
2013 Estimated Annualized Total				152,512	94,835	12,761.5	\$ 28,862.1				

Table 2 Source: Fay, G., Villalobos Meléndez A., and Saylor B. 2014. Institute of Social and Economic Research, University of Alaska Anchorage, prepared for the Alaska Energy Authority.

Partial support for this report and renewable energy fund project database developed by the Institute of Social and Economic Research, University of Alaska Anchorage is from a grant from the U.S. Department of Energy, EPSCoR project DE-PS02-09ER09-12, Making Wind Work for Alaska: Supporting the Development of Sustainable, Resilient, Cost-Effective Wind-Diesel Systems for Isolated Communities to the University of Alaska.



City of Akutan Town Creek Hydro—Alaska Energy Authority

Success Stories



Delta Junction School biomass boiler and heat exchanger
Completed in September 2011

High efficiency, low emissions wood chip biomass heating system
Wood chips from Dry Creek Saw Mill waste product
Average annual fuel savings of 38,000 gallons of heating fuel, saving \$133,000 per year. Allowed the school to save 2 teacher positions, reopen music program and remodel the school kitchen
Easy maintenance
REF Grants: \$2,000,000
Total Project Cost: \$2,800,000
Annual Fuel Savings: 38,000 gallons

Photos: Alaska Energy Authority



Anchorage Landfill Gas Electricity
REF Grant: \$2,000,000
Total Project Cost: \$3,423,866
Annual Fuel Savings: 4,300 gallons equiv.

Table 4.

				Ben / Cost			Project Cost				Recommendation
	Applicant Type	Energy Source	Total Stage 2 Score	AEA B/C	Appl B/C	Cost of Energy \$/kWh	Project Cost	Grant Requested	Match Offered	Phase	AEA Recomnd
	Local Government	Hydro	39.33	1.48	1.37	N/A	\$3,562,772	\$62,272	\$3,500	Recon	Did Not Pass Stage 2
	IPP	Hydrokinetic	39.17	0.16	0.16	\$0.22	\$1,940,558	\$1,560,558	\$120,000	Construction	Did Not Pass Stage 2
	Utility	Hydro	39.00	1.05		\$0.62	\$825,000	\$700,000	\$125,000	ReconFeasibility	Did Not Pass Stage 2
	Government Entity	Hydro	35.33	0.79	1.21	\$0.22	\$31,500,000	\$213,750	\$11,250	Feasibility	Did Not Pass Stage 2
	Local Government	Wind	35.33	0.47	0.27	\$0.81	\$72,400,000	\$160,000	\$0	Feasibility	Did Not Pass Stage 2
	Utility	Hydro	27.50	0.71	1.05	\$0.74	\$38,660,000	\$2,922,000	\$150,000	Design	Did Not Pass Stage 2
	Government Entity	Wind	21.17	0.76	1.83	\$0.60	\$1,300,000	\$81,000	\$300	FeasibilityDesign	Did Not Pass Stage 2
	Local Government	Hydro		1.79	6.91	\$0.10	\$51,000,000	\$4,000,000	\$4,000,000	DesignConstruction	Not Recommended
	Utility	Heat Recovery		1.39	6.44	\$0.50	\$1,940,379	\$1,843,379	\$97,000	FeasDesignConstruction	Not Recommended
	Government Entity	Heat Recovery		0.97	0.98	\$0.85	\$232,430	\$225,660	\$6,770	DesignConstruction	Not Recommended
	Local Government	Hydro		0.09	3.93	N/A	\$14,500,000	\$213,536	\$10,000	Feasibility	Not Recommended
	Government Entity	Transmission		1.77	1.28	\$0.10	\$14,510,599	\$9,281,615	\$0	DesignConstruction	Not Recommended
	Utility	Geothermal		0.44	1.24	\$0.65	\$49,000,000	\$3,378,500	\$0	Feasibility	Not Recommended
	Government Entity	Hydro		1.52		\$0.68	\$7,224,213	\$159,000	\$10,000	ReconFeasibility	Not Recommended
	Government Entity	Solar PV		0.96	1.28	\$0.50	\$235,000	\$230,000	\$5,000	DesignConstruction	Not Recommended
	Local Government	Solar PV		1.24	1.22	\$0.74	\$447,800	\$447,800	\$0	Construction	Not Recommended
	Government Entity	Solar PV		0.01	0.40	\$0.59	\$2,000,000	\$800,000	\$120,000	ReconFeasibility	Not Recommended
	Government Entity	Hydro		1.14	1.02	\$0.44	\$1,650,000	\$1,400,000	\$0	DesignConstruction	Not Recommended
	Government Entity	Solar Thermal		1.48	3.14	\$0.63	\$467,252	\$456,252	\$11,000	Construction	Not Recommended
	Government Entity	Transmission					\$1,250,000	\$1,250,000	\$0	Feasibility	Did Not Pass Stage 1
	Utility	Wind					\$2,284,000	\$141,000	\$20,000	DesignConstruction	Did Not Pass Stage 1
	Local Government	Wind					\$4,358,784	\$4,308,784	\$50,000	DesignConstruction	Did Not Pass Stage 1
							\$301,288,787	\$33,835,106	\$4,739,820		



City of Akutan Town Creek Hydro
Alaska Energy Authority

Renewable Energy Fund Round VII—Not Recommended Applications

Count		Energy Region	ID	Project Name	Applicant
1	S	Southeast	1019	Survey Creek Hydroelectric Project	Edna Bay Community
2	S	Railbelt	1002	Poncelet Kinetics RHK100 Probtotype Demonstration	Whitesbone Power and Communications
3	S	Southeast	1024	Walker Lake Hydro Project Feasibility	Tlingit-Haida Regional Electrical Authority
4	S	Railbelt	1029	Jack River Hydroelectric Project Feasibility Study	Native Village Of Cantwell
5	S	Aleutians	1056	Adak Wind Data Collection Analysis and Preliminary Design	City of Adak, Alaska
6	S	Northwest Arctic	1059	Cosmos Hills Hydroelectric Design and Permitting	Alaska Village Electric Cooperative
7	S	Kodiak	1004	Karluk Tribal Council Wind Energy System	Karluk Tribal Council
8	S	Southeast	1003	Mahoney Lake Hydroelectric Phase III and IV	City of Saxman
9	H	Bristol Bay	1006	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.
10	H	Lower Yukon-Kuskokwim	1008	Chuathbaluk Water System Heat Recovery	City of Chuathbaluk
11	S	Southeast	1020	Excursion Inlet Hydro Project Feasibility/Conceptual Design	Haines Borough
12	S	Southeast	1034	Metlakatla to Ketchikan Interlie	Metlakatla Indian Community
13	S	Southeast	1035	Feasibility Study of Tenakee Inlet Geothermal Resource	Inside Passage Electric Cooperative
14	S	Bristol Bay	1046	Port Alsworth Hydropower PreConstruction Phase	Port Alsworth Improvement Corporation
15	S	Bristol Bay	1050	Bristol Bay Borough School District Solar PV Project	Bristol Bay Borough School District
16	S	Northwest Arctic	1058	Noatak Utility Size Photovoltaic Array Construction Project	Northwest Arctic Borough
17	S	Bristol Bay	1063	Iliamna Solar Ground Mounted Energy System	Iliamna Village Council
18	S	Copper River/Chugach	1064	Chenega Bay Hydroelectric Construction	Native Village of Chenega
19	H	Northwest Arctic	1076	NWAB School District Solar Thermal Systems	Northwest Arctic Borough School District
20	S	Lower Yukon-Kuskokwim	1039	Four Villages Interlie Design	Nuvista Light and Electric Cooperative
21	S	Lower Yukon-Kuskokwim	1054	Multiple Alternative Energy Sources for Napakiak	Napakiak Incinraq Power Company
22	S	Lower Yukon-Kuskokwim	1086	Chefornak High Penetration Wind Diesel System	Naterqak Light Plant, City of Chefornak
Sub Total - Not Recommended Projects					

Notes

This document represents AEA's final recommendations following advisement from the Renewable Energy Fund Advisory Committee (REFAC) on January 7, 2014.

If REF 7 funding is limited to \$20M exactly, #1082 Stetson Creek Diversion Cooper Lake Dam Facilities Project and #1015 Allison Creek Hydroelectric Project Construction will be partially funded at approximately 50% and 80% of AEA's Full Funding Recommendations

** #1082 Stetson Creek Diversion Cooper Lake Dam Facilities Project is recommended by AEA staff to be fully funded. If REF7 allocations are greater than the Governor's budget of \$20m, the REFAC recommends funding the remaining grant requested funding of \$1,693.901.

++ #1015 Allison Creek Hydroelectric Project Construction is recommended by AEA staff to be fully funded. If REF7 allocations are greater than the Governor's budget of \$20m, the REFAC recommends funding the remaining grant requested funding of \$1,149,831

H = Heat application, applications that deliver heat only, not electricity. These applications are highlighted in orange, with a dark orange representing those applications recommended by the REFAC to fit within the Governor's budget of \$20M allocation for REF Round VII.

S = Standard application, applications that deliver electricity, energy storage, transmission or a combination of electricity and heat. These applications are highlighted in blue, with a dark blue representing those applications recommended by the REFAC to fit within the Governor's budget of \$20M allocation for REF Round VII.

Total Stage 2 Score column is the technical and economic evaluation score and is on a scale of 0 to 100. A minimum score of 40 is required to pass stage 2.

B/C = Benefit/Cost Ratio over the life of the project.

AEA B/C ratio uses AEA's best assumptions in the standard REF economic model

Some not recommended projects' B/C ratios may be incomplete due to incomplete information provided or other reasons.

The Applicant B/C ratio uses the applicants assumptions in the standard Renewable Energy Fund economic model.

SP = Special Provisions

Match offered is applicant's offered cash and in-kind match, including supporting energy efficiency work and wood harvest value where applicable.

Round VII Recommended Projects

AEA recommends 64 out of 86 applications reviewed for Round VII funding, totaling \$41.5 million in recommended funding. The recommendations are listed in the following pages, and more detailed information is available on AEA's web site. Figures 8—12 on pages 18—19 show recommended funding by energy source (type) and by region and both for all recommended projects that rank within the Governor's budget of \$20M (Tier 1) and for the other recommended projects (Tier 2).

Review Process

The recommendation process involves four stages of review and scoring: eligibility, technical and economic feasibility, ranking based on established criteria, and re-ranking based on regional distribution. The technical and economic evaluation is at the heart of the scoring. It is a thorough vetting process that is conducted by AEA technical reviewers, economists, and by the Department of Natural Resources staff.

AEA Technical Assistance staff provided support to rural communities on 18 of the 86 applications reviewed. Of these, 66% were among the recommended applications and five are ranked in the top \$20M to benefit the high cost of energy communities of Atka, Chignik Lagoon, Kake, Minto, and Tuntutuliak.

Advisory Committee

AEA's preliminary ranked list of recommended projects were provided to the Renewable Energy Fund Advisory Committee on January 7, 2014. The committee recommended partially funding two projects that ranked in the top \$20M in order to fund an additional six projects, five heating projects and one from an under-represented region, based on the regional distribution formula.

AEA's Recommendation

AEA has accepted the advisory committee's recommendations and presents the Legislature with the following tables of recommended projects for a funding determination.

Pages 12 and 13 identify all projects that are recommended for funding by AEA in ranked order. The first \$20M of projects that fit within the Governor's budget are colored a darker blue and orange (differentiating heating projects from 'standard' applications which are electric projects, transmission, storage, or combined heat and power.) The lighter blue and orange represent recommended projects, that ranked outside the top \$20M.

Allison Lake Hydroelectric Project,
Valdez
REF Grant: \$2,288,000
Total Project Cost: \$38,804,000
Projected Annual Fuel Savings:
1,100,000 gallons equiv.
Capacity: 6.5MW



Table 3.

Count		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 2 Score	Ben / Cost		Stage 3 Review Scores (max)										Project Cost				Recommendation				
									AEA B/C	Appl B/C	Cost of Energy \$/kWh	Fuel Price \$/gal	1. Cost of Energy (35)	2. Match (15)	3. Tech & Econ Feas (20)	4. Readiness (5)	5. Benefit (15)	6. Local Supt (5)	7. Sustainability (5)	Total (100)	State-wide Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recommd	Early	Recommend Funding	Cumulative Funding
1	H	Aleutians	1026	Atka Dispatchable Heat	City of Atka	Local Government	Hydro to Heat	82.83	3.18	6.90	\$0.70	\$7.65	33.47	11.00	16.57	5.00	12.00	3.00	4.00	85.04	1	\$135,254	\$114,965	\$20,289	Construction	FULL		\$114,965	\$114,965
2	S	Bristol Bay	1036	Packers Creek Hydroelectric Project Phase II	Chignik Lagoon Village Council	Government Entity	Hydro	86.33	1.66	3.85	\$0.69		30.26	11.00	17.27	5.00	11.00	5.00	3.83	83.36	2	\$5,389,149	\$2,352,653	\$3,036,496	Construction	FULL		\$2,352,653	\$2,666,092
3	H	Yukon-Koyukok/Upper Tar	1044	Venetie Clinic Heat Recovery	Village of Venetie	Government Entity	Heat Recovery	85.17	1.68	2.45	\$0.90	\$8.50	35.00	6.00	17.03	4.00	11.25	4.00	3.33	80.62	3	\$204,428	\$198,474	\$11,908	DesignConstructio	FULL		\$198,474	\$313,439
4	H	Yukon-Koyukok/Upper Tar	1047	Galena Community Wood Heat Project	City of Galena	Local Government	Biomass	88.00	4.31	3.96	\$0.56	\$6.02	26.34	6.00	17.60	3.83	14.13	5.00	4.50	77.40	4	\$3,144,200	\$3,096,898	\$47,302	Construction	FULL SP		\$3,096,898	\$5,762,990
5	H	Lower Yukon-Kuskokwim	1052	Nunam Iqua Heat Recovery Project	City of Nunam Iqua	Local Government	Heat Recovery	87.67	2.20	2.33	\$0.53	\$4.38	19.16	13.00	17.53	3.00	12.50	5.00	3.50	73.69	5	\$603,000	\$450,000	\$153,000	Construction	FULL		\$450,000	\$6,212,990
6	H	Southeast	1011	Sitka Centennial Hall Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	80.50	1.69	3.58	\$0.09	\$3.59	15.71	15.00	16.10	5.00	10.75	5.00	4.83	72.39	6	\$232,620	\$232,620	\$1,021,393	DesignConstructio	FULL		\$232,620	\$6,445,610
7	S	Bering Straits	1068	Stebbins St Michael Wind Energy Final Design and Permitting	Alaska Village Electric Cooperative, Inc.	Utility	Wind	83.33	1.80	2.74	\$0.56		24.42	7.00	16.67	3.00	11.63	5.00	4.50	72.21	7	\$3,946,050	\$342,000	\$18,000	Design	FULL		\$342,000	\$6,787,610
8	H	Lower Yukon-Kuskokwim	1085	Tuntutuliak Heat Recovery	Native Village of Tuntutuliak	Government Entity	Heat Recovery	81.33	1.54	2.32	\$0.65	\$6.80	29.75	6.00	16.27	3.83	10.13	3.00	3.00	71.98	8	\$469,311	\$455,642	\$13,669	DesignConstructio	FULL		\$455,642	\$7,243,252
9	H	Lower Yukon-Kuskokwim	1061	Emmonak Heat Recovery System	City of Emmonak	Government Entity	Heat Recovery	87.67	2.56	4.02	\$0.55	\$5.77	25.24	6.00	17.53	4.00	12.50	3.00	2.67	70.94	9	\$689,251	\$689,251	\$20,677	DesignConstructio	FULL SP		\$689,251	\$7,932,503
10	S	Yukon-Koyukok/Upper Tar	1027	Chisana Mountain Wind Feasibility Project	Alaska Power Company	Utility	Wind	85.00	2.55		\$0.49		21.46	11.00	17.00	2.50	12.50	2.00	4.17	70.63	10	\$148,800	\$119,000	\$29,800	Feasibility	FULL		\$119,000	\$8,051,503
11	S	Yukon-Koyukok/Upper Tar	1077	Yerrick Creek Hydroelectric Project	Native Village of Tanacross	Government Entity	Hydro	58.33	4.23	9.84	\$0.49		21.46	15.00	11.67	3.00	11.25	5.00	3.17	70.54	11	\$19,000,000	\$6,000,000	\$11,500,000	Construction	PARTIAL		\$75,000	\$8,126,503
12	S	Lower Yukon-Kuskokwim	1067	Mountain Village Wind Feasibility and Conceptual Design	Alaska Village Electric Cooperative, Inc.	Utility	Wind	79.17	1.70	1.23	\$0.54		23.80	7.00	15.83	2.50	11.63	5.00	4.50	70.26	12	\$4,833,000	\$123,500	\$6,500	Feasibility	FULL		\$123,500	\$8,250,003
13	H	Southeast	1087	Kake Community Energy	Organized Village of Kake	Government Entity	Biomass	73.83	1.62	1.18	\$0.62	\$5.85	25.59	7.00	14.77	2.00	12.00	4.00	4.00	69.36	13	\$1,423,292	\$208,073	\$20,000	Design	PARTIAL	Y	\$175,000	\$8,425,003
14	H	Southeast	1037	Ketchikan Gateway Borough Biomass Heating Project	Ketchikan Gateway Borough	Local Government	Biomass	84.33	2.15	0.24	\$0.10	\$3.59	15.71	11.00	16.87	3.67	13.00	5.00	3.50	68.74	14	\$1,957,261	\$1,412,889	\$353,222	Construction	PARTIAL SP		\$620,000	\$9,045,003
15	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro	94.33	7.11	0.89	\$0.15		6.78	15.00	18.87	5.00	12.88	5.00	5.00	68.52	15	\$21,772,523	\$3,453,920	\$13,591,226	Construction	Partial-REFAC**		\$1,760,019	\$10,805,022
16	S	Copper River/Chugach	1015++	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro	89.33	3.96	3.68	\$0.28		12.44	15.00	17.87	4.00	12.13	2.00	5.00	68.43	16	\$49,000,000	\$5,914,491	\$5,914,491	Construction	Partial-REFAC++		\$4,764,652	\$15,569,674
17	S	Southeast	1025	Gunnuk Creek Hydroelectric Feasibility Study	Inside Passage Electric Cooperative	Utility	Hydro	73.00	4.28	0.00	\$0.62		27.14	7.00	14.60	2.00	11.63	2.00	3.83	68.20	17	\$300,000	\$275,000	\$25,000	ReconFeasibility	PARTIAL SP		\$80,000	\$15,649,674
18	H	Bering Straits	1040	Brevig Mission Water System Heat Recovery	City of Brevig Mission	Government Entity	Heat Recovery	83.00	1.51	2.01	\$0.54	\$5.29	23.14	6.00	16.60	5.00	10.25	4.00	3.17	68.16	18	\$753,313	\$731,372	\$21,941	DesignConstructio	FULL		\$731,372	\$16,381,046
19	H	Railbelt	1031	Seldovia House Ground Source Heat Pump Project	Cook Inlet Housing Authority	Government Entity	Heat Pumps	58.17	1.12	0.94	\$0.20	\$5.19	22.71	15.00	11.63	4.50	5.25	5.00	3.83	67.93	19	\$362,805	\$318,289	\$411,835	DesignConstructio	FULL		\$318,289	\$16,699,335
20	H	Southeast	1021	Haines Borough Municipal Buildings Biomass Project	Haines Borough	Local Government	Biomass	88.50	1.72	1.79	\$0.22	\$4.09	17.89	9.00	17.70	3.83	12.63	2.00	4.50	67.55	20	\$1,374,892	\$1,237,403	\$137,448	DesignConstructio	FULL SP		\$1,237,403	\$17,936,738
21	H	Lower Yukon-Kuskokwim	1043	St. Mary's Heat Recovery System	City of St. Mary's	Government Entity	Heat Recovery	85.17	1.61	2.21	\$0.49	\$4.60	20.13	6.00	17.03	3.83	11.25	5.00	4.17	67.41	21	\$757,299	\$735,242	\$22,057	DesignConstructio	FULL		\$735,242	\$18,671,980
22	H	Yukon-Koyukok/Upper Tar	1032	Biomass Heat for Minto Community Buildings	Village of Minto	Government Entity	Biomass	69.33	1.02	1.37	\$0.59	\$5.00	21.88	15.00	13.87	3.00	5.38	5.00	3.17	67.29	22	\$403,550	\$274,750	\$278,800	DesignConstructio	FULL SP		\$274,750	\$18,946,730
23	H	Southeast	1053	Yakutat Biomass District Heating Loop	City and Borough of Yakutat	Local Government	Biomass	67.67	1.45	2.31	\$0.50	\$5.05	22.09	11.00	13.53	2.00	8.88	5.00	4.17	66.67	23	\$335,456	\$286,166	\$49,290	DesignConstructio	PARTIAL SP	Y	\$103,000	\$19,049,730
24	H	Lower Yukon-Kuskokwim	1073	Kongiganak Wind Heat Electrical Thermal Storage	Puvurnaq Power Company	Utility	Wind to Heat	74.17	1.70	2.55	\$0.56	\$6.21	27.17	6.00	14.83	2.83	12.38	0.00	3.00	66.21	24	\$320,456	\$311,456	\$9,000	Construction	FULL SP		\$311,456	\$19,361,186
25	S	Bristol Bay	1072	Igiugig Wind Resource Feasibility/Conceptual Design	Igiugig Village Council	Government Entity	Wind	47.00	0.86																				