



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



Status Report and Round VII Recommendations

Jan. 28, 2014

# Renewable Energy Fund

The Renewable

communities an

estimated 12.5

diesel fuel (equivalent) in 2013, at a fuel cost savings of \$28.8

million gallons of

million this year.

Alaska

**Energy Fund saved** 

#### **RENEWABLE ENERGY FUND STATUS REPORT - JANUARY 2014**

### **Round VII Standard Applications**

### 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
- Technical evaluations

Economic evaluations

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Maps



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



Heat Recovery System installation - Hoonah Alaska Energy Authority

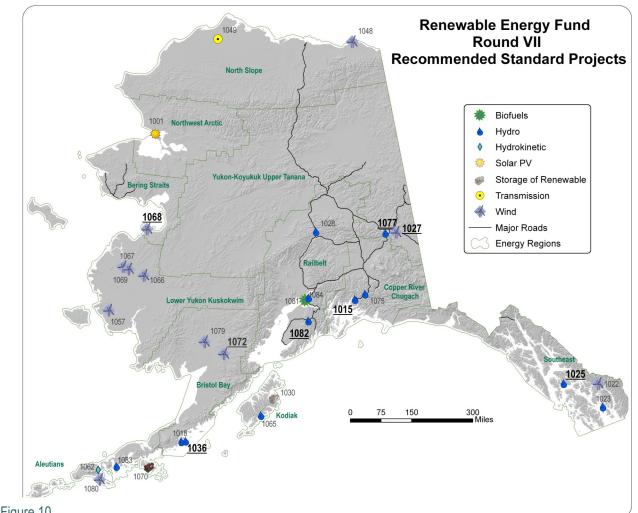
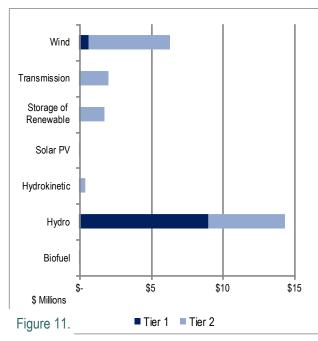
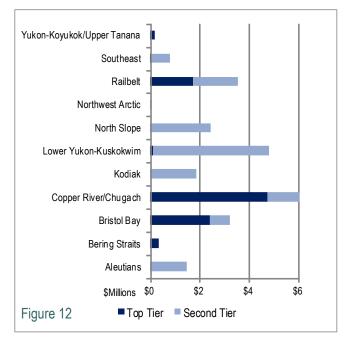


Figure 10.

### **Recommended funding by type**

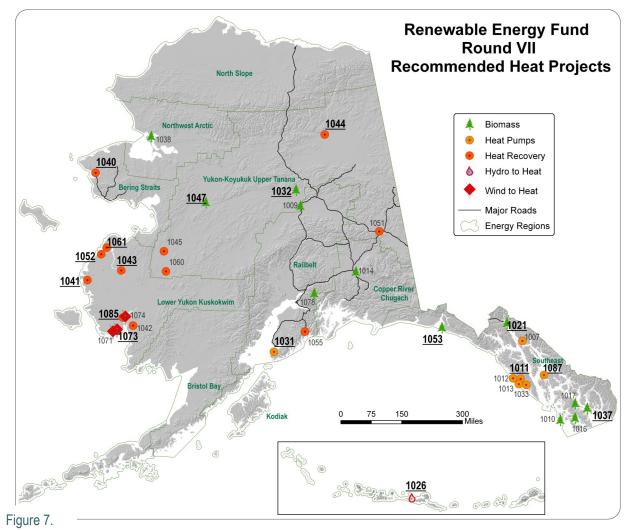


### **Recommended funding by region**

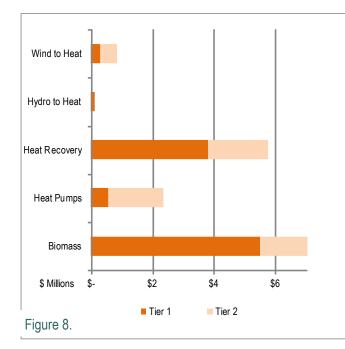


#### **RENEWABLE ENERGY FUND STATUS REPORT - JANUARY 2014**

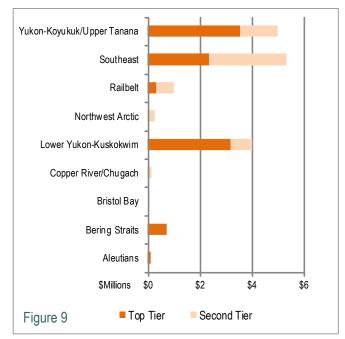
### **Round VII Heat Applications**



#### **Recommended funding by type**



#### **Recommended funding by region**



### **Progress on Funded Projects**

above the average of \$0.20/kWh).

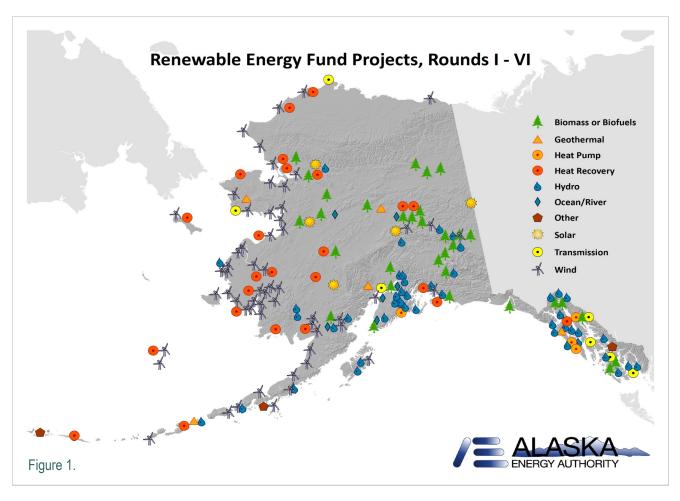
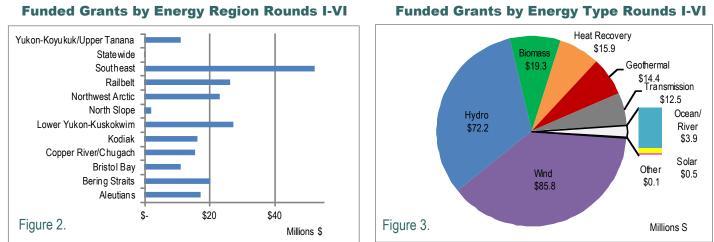
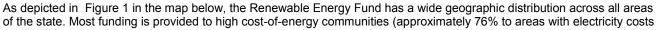


Figure 2 shows funded grants by Energy Region with approximately \$146M or 65% going to rural Alaskan communities, \$52M or 23% is for Southeast and the remaining \$26M or 12% is for the most populous energy region, the Railbelt .

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



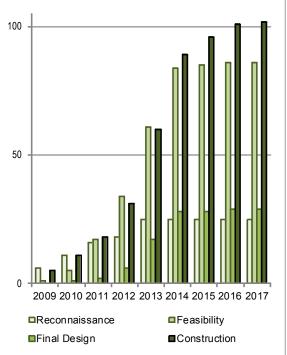


**Scheduled Grant Completion** 

### **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.





#### Figure 4.

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

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

### Grant and Funding Summary as of 01/14/14

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.

Total grant amount requested by all applicants. 3.

These totals are for awarded grants only. 4.

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.

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

## for Heat and Standard Applications by Energy Region

			Sta	ige 3 Re	view Sc	ores (n	1ax)				Project	Cost			Re	Recommendation			
Fuel Price \$/gal	1. Costof Energy (35)	2. Match (15)	3. Tech & Econ Feas (20)	4. Readi- ness (5)	5. Benefit (15)	6. Local Supt (5)	7. Sustan- ability (5)	Total (100)	State- wide Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recomind	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		FULL		\$318,289	\$2,078,308		
40.10		10.00			0.20	0.00			15	,	<b>,</b> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<b>,</b> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	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		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		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		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	0	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	. ,		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		Construction	FULL		\$225,000	\$4,582,924		
										\$1,940,558	\$1,560,558	\$120.000	Construction	Did Not Pass Sta	ae 2		. , , ,		
										\$31,500,000	\$213,750		Feasibility	Did Not Pass Sta	<u> </u>				
				1						\$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		DesignConstructio	EUL		\$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		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		
φ0.00	27.14	7.00	14.60	2.00	11.63	2.00	3.83	68.20	17	\$300.000	\$275.000		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		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	. ,	on DesignConstructio		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		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		DesignConstructio	CAGE/ADDINGSOC	v	\$125,000	\$3,513,973		
ψτ.20	4.47	15.00	16.23	3.00	11.25	5.00	5.00	59.95	37	\$13,391,869	\$4,000,000		DesignConstruction			\$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		DesignConstructio			\$230,200	\$4,304,661		
\$3.80	16.63	11.00	13.27	3.00	6.38	2.00	3.50	55.77	40	\$230,200	\$492,850		DesignConstructio	A CONTRACTOR OF	v	\$230,200	\$4,304,001		
\$3.59	15.71	15.00	10.97	4.00	0.50	5.00	4.17	55.34	40	\$388,838	\$373,838		-	PARTIAL SP	$\overline{\mathbf{v}}$	\$56,841	\$4,486,502		
40.08	4.47	7.00	18.07	2.00	13.13	5.00	3.67	53.34	42	\$170,583	\$158,771		ReconFeasibility	FULL	1	\$158,771	\$4,645,273		
\$4.12	18.03	11.00	9.87	4.00	0.63	4.00	4.50	52.02	52	\$170,585	\$660.000			FULL		\$660.000	\$5,305,273		
\$3.59	15.71	9.00	11.53	5.00	0.03	5.00	4.83	51.83	53	\$962,984	\$849,984			FULL		\$849,984	\$6,155,257		
40.09	13.71	9.00	11.00	5.00	0.75	5.00	4.03	31.03	00	\$3,562,772	\$62.272		Recon	Did Not Pass Star			\$0,155,257		
			-					_		\$3,562,772	\$700.000	4-1	0.000.000	Did Not Pass Stay	<u> </u>				
										\$825,000	\$4,000,000	. ,	DesignConstruction		<u> </u>				
										\$14,500,000	\$4,000,000		Feasibility	Not Recommende	_				
-					-					\$14,500,000	\$9,281,615	. ,	DesignConstructio						
							-			. , ,	. , ,		-		-				
				-	19. J		1		2	\$49,000,000	\$3,378,500		Feasibility	Not Recommende	eu .	CC 455 257			
\$8,50	25.00	6.00	47.02	4.00	44.05	4.00	2.22	00.60	2	\$157,263,491	\$29,578,567	\$16,170,800	DesignConstructi	ELII I		\$6,155,257	¢400.477		
\$8.50	35.00 26.34	6.00	17.03 17.60	4.00	11.25 14.13	4.00 5.00	3.33	80.62 77.40	3	\$204,428	\$198,474		DesignConstruction	FULL SP		\$198,474	\$198,474 \$3,295,372		
φ <b>0</b> .02	20.34	6.00				2.00	4.50		4	\$3,144,200	\$3,096,898		Construction	FULL SP		\$3,096,898			
	21.46	11.00	17.00	2.50 3.00	12.50	2.00	4.17 3.17	70.63	10	\$148,800 \$19,000,000	\$119,000 \$6.000.000		Feasibility Construction	PARTIAL		\$119,000 \$75.000	\$3,414,372 \$3,489,372		
¢5.00	Contraction of the second			Louis Anna anna anna anna anna anna anna ann				1000 000 000 0000		. , ,				FULL SP					
\$5.00	21.88	15.00	13.87	3.00	5.38	5.00	3.17	67.29	22	\$403,550	\$274,750					\$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			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		2	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	4	\$4,000	DesignConstructio	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 Alaska Energy Authority Farm

### **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	Costo Energy (\$/kWh )
1 5	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project		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	00.11	1.12	0.01	.L.
3 S	Railbelt	1084	Juniper Creek Hydroelectric Reconnaissance Study	Ram Valley, LLC	IPP	Hydro	73.17	2.45	3.49	\$0.1
4 S	Railbelt	1028	Carlo Creek Hydroelectric Project Reconnaissance Study	Native Village of Cantwell	Government Entity	Hydro	61.00	1.90	1.88	\$0.2
5 H	Railbelt		Nenana Collaborative Biomass Heating System Project	Nenana School District	Government Entity	Biomass	54.67	0.66	1.11	\$0.2
6 S	Railbelt	1081	Waste to Energy Reconnaissance Study	Chugach Electric Association, Inc.	Utility	Biomass	61.50	1.31	1.34	\$0.1
7 H	Railbelt		Chickaloon Solar Thermal and Biomass Project	Chickaloon Native Village	Government Entity	Biomass	43.67	0.74	0.79	\$0.1
8 H	Railbelt		Alaska SeaLife Center Heat Recovery Project	City of Seward	Local Government	Heat Recovery	57.67	1.13	4.41	\$0.1
9 S	Railbelt		Poncelet Kinetics RHK100 Prototype Demonstration	Whitestone Power and Communications	IPP	Hydrokinetic	39.17	0.16	0.16	\$0.2
3 3 10 S	Railbelt	1002	Jack River Hydroelectric Project Feasibility Study	Native Village Of Cantwell	Government Entity	- <u> </u>	35.33	0.10	1.21	\$0.2
To Have P	Railbelt Total	1029			Government Entity	Hydro	30.33	0.19	1.21	φ <b>0</b> .2
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	\$0.0
2 H	Southeast	1011		Organized Village of Kake	Government Entity	Biomass	73.83	1.62	1.18	\$0.6
2 H		1087	Kake Community Energy		Local Government	Contraction of the second s	84.33	2.15	0.24	-
NO.	Southeast		Ketchikan Gateway Borough Biomass Heating Project	Ketchikan Gateway Borough	A CONTRACTOR OF A CONTRACT OF A CONTRACT OF	Biomass	5 11 12 12 12 12 12 12 12 12 12 12 12 12	and the second	1000 B 1000 B 20	\$0.1
-	Southeast	1025	Gunnuk Creek Hydroelectric Feasibility Study	Inside Passage Electric Cooperative	Utility	Hydro	73.00	4.28	0.00	\$0.6
	Southeast	1021	Haines Borough Municipal Buildings Biomass Project	Haines Borough	Local Government	Biomass	88.50	1.72	1.79	\$0.2
	Southeast	1053	Yakutat Biomass District Heating Loop	City and Borough of Yakutat	Local Government	Biomass	67.67	1.45	2.31	\$0.5
7 H	Southeast	1017	Southeast Island School District Wood Boilers	Southeast Island School District	Government Entity	Biomass	76.67	1.47	2.32	\$0.4
8 H	Southeast	1016	Hydaburg Schools Wood Fired Boiler Project	Hydaburg City School District	Government Entity	Biomass	77.83	1.91	2.45	\$0.2
9 S	Southeast	1023	Swan Lake Reservoir Expansion Project	The Southeast Alaska Power Agency	Government Entity	Hydro	81.17	4.07	4.07	\$0.1
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	\$0.0
11 H	Southeast	1010	Craig High School Wood Heat Conversion	Craig City School District	Government Entity	Biomass	66.33	1.12	1.54	\$0.2
12 H	Southeast	1033	Sitka Sea Water Source Heat Pump Project	City and Borough of Sitka		Heat Pumps	54.83	0.50	0.52	\$0.0
13 S	Southeast	1022	SEAPA Wind Resource Assessment Phase I and II	The Southeast Alaska Power Agency	Government Entity	Wind	90.33	1.84		\$0.1
14 H	Southeast	1007	Mendenhall Valley Library Geothermal HVAC System	City & Borough of Juneau	Local Government	Heat Pumps	49.33	0.86	0.74	\$0.1
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	\$0.0
16 S	Southeast		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		\$0.6
18 S	Southeast	1003	Mahoney Lake Hydroelectric Phase III and IV	City of Saxman	Local Government	Hydro		1.79	6.91	\$0.1
19 S	Southeast	1020	Excursion Inlet Hydro Project Feasibility and Conceptual Des	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.
21 S	Southeast	1035	Feasibility Study of Tenakee Inlet Geothermal Resource	Inside Passage Electric Cooperative	Utility	Geothermal		0.44	1.24	\$0.6
21	Southeast Total									
1 H	Yukon-Koyukok/Upper Tar	1044	Venetie Clinic Heat Recovery	Village of Venetie	Government Entity	Heat Recovery	85.17	1.68	2.45	\$0.9
2 H	Yukon-Koyukok/Upper Tar	1047	Galena Community Wood Heat Project	City of Galena	Local Government	Biomass	88.00	4.31	3.96	\$0.5
3 S	Yukon-Koyukok/Upper Tar	1027	Chisana Mountain Wind Feasibility Project	Alaska Power Company	Utility	Wind	85.00	2.55		\$0.4
4 S	Yukon-Koyukok/Upper Tar	1077	Yerrick Creek Hydroelectric Project	Native Village of Tanacross	Government Entity	Hydro	58.33	4.23	9.84	\$0.4
5 H	Yukon-Koyukok/Upper Tar	1032	Biomass Heat for Minto Community Buildings	Village of Minto	Government Entity	Biomass	69.33	1.02	1.37	\$0.5
6 H	Yukon-Koyukok/Upper Tar	1045	Grayling Heat Recovery System	City of Grayling	Government Entity	Heat Recovery	80.17	1.47	2.02	\$0.5
7 H	Yukon-Koyukok/Upper Tar		Holy Cross Water System Heat Recovery	City of Holy Cross	Government Entity	Heat Recovery	57.67	0.55	0.74	\$0.5
8 H	Yukon-Koyukok/Upper Tar		AGSD Extension of Heating Loop	Alaska Gateway School District	Government Entity	Heat Recovery	59.83	0.97	1.45	\$0.4
8	Yukon-Koyukok/Upper T	anana T	otal							
	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.

#### Actual and Projected 2009–2016

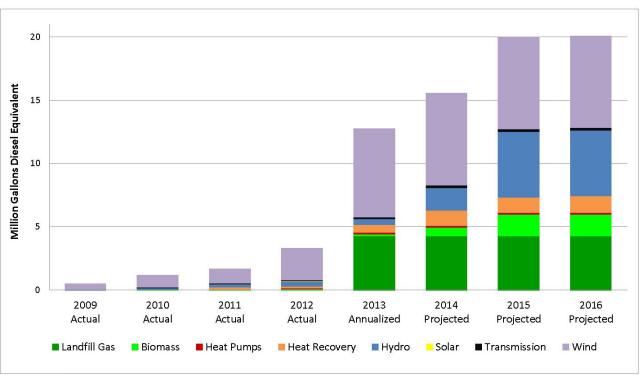
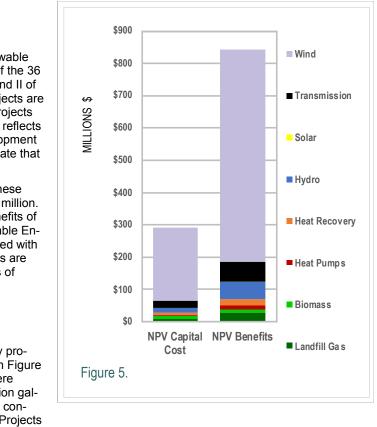
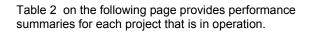


Figure 6.





#### **RENEWABLE ENERGY FUND STATUS REPORT - JANUARY 2014**

### **Performance of Renewable Energy Fund Projects in Operation**

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       -       -       \$       -					20	11				
Technology Type Grance         Project Name         Start Data         (MMB bu)         (Galr 000)         (\$ x 100)           LANDFLL GAS         Municipally of Anchorage         Anchorage Landil Gas Electricity         2012 De         -         -         -         \$         -         -         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         +         \$         -         -         \$         -         -         \$         -         T         \$         4833         4833         >         A113         \$         4833         \$         551         137         \$         2825         137         \$         2825         1050         0         -         137         \$         2825					Energy Pi	roduction	Fuel Displaced			
LANDELLGAS         Municipatity of Anchorage         Anchorage Landtil Gas Electricity         2012 Aug         -         -         S           HYDRO         Chy of Ma         Chanitas Creek Hydrolectric         2012 Dec         -         -         S           HYDRO         Cordova Electric Cooperative         Humpbadi Creek Hydrolectric Project Rehabilitation         2011 Jul         1,533         -         183.1         6         43.0.3           SCLAR         Adada Village Electric Cooperative         Hort Fritoc Ortivation         2012 Oct         -         -         S         -           TRANSNISSICH         Adada Village Electric Cooperative         Hort Fritoc OrtiVales Eland Horte Project         2011 Sep         311         -         16.4         \$         67.0           TRANSNISSICH         Adada Village Electric Cooperative         None Samme Pack Wind Tarm Transmission         2010 Oct         295.9         2.56.1         17.7         \$         49.5         17.7         \$         49.5         17.7         \$         49.5         17.7         \$         49.5         \$         17.7         \$         49.5         \$         17.7         \$         49.5         \$         17.7         \$         49.5         \$         17.7         \$         49.5				Operation	Electrical	Thermal	Diesel	Value		
HYDPRO       City of Main       Chruniszo Creek Hydroelechtic       2012 Dec       -       -       S         HYDPRO       Gordsvar Elechtic Cooperative       Humpback Creek Hydroelechtic Corretutdion       2019 Jul       1,563       -       114.4       \$       410.3         SQLAR       Alada Village Elechtic Cooperative       Kalling Solar Construction       2012 Oct       -       -       -       S         FTANISMISSION       Nome Joint Ulling System       Horn Fricore Orivales Main Herle Project       2011 Oct       955       -       53.9       \$       151.6       6       7.7       \$       125.1       5.0       5.2	Technology Type	Grantee	Project Name	Start Date	(MWh)	(MMBtu)	(Galx1000)	(\$ x 1000)		
HVDRO       Cardone Electric Cooperative       Humpback Creek Hydroelectric Project Rehabilitation       2011 Jul       1563       -       1149       § 440.3         HVDRO       Gutature Electric Cooperative       Kattag Star Construction       2019 Jul       1533       -       158.1       \$       448.3         SCULR       Alaska Village Electric Cooperative       North Prince of Vikale Stand Iterife Project       2011 Sep       311       -       16.4       \$       -       -       -       \$       -       -       178.4       \$       170.0       \$       45.0       \$       5.53.9       \$       151.6       \$       9.0       16.41       9.05.9       \$       25.0       \$       25.0       \$       25.0       \$       129.1<	LANDFILL GAS	Municipality of Anchorage	Anchorage Landfill Gas Electricity	2012 Aug	-	-	- 9	š -		
HVDRO       Gurdaus Electric Company       Falls Treek Hydrosolchic Construction       2009 Jul       1933       -       133.1       \$ 433.3         SULAR       Maska Vilage Electric Cooperative       Kottp Store Construction       2012 Oct       -       -       \$         TRANSMISSION       Alaska Prover and Telephone       Nort Prime of Wales Isian Interfe Project       2011 Sep       311       -       16.4       \$       67.0         TRANSMISSION       Nome Anner Peak Wind Farm       2009 Sep       1.641       -       55.9       \$       255.9       \$       255.9       \$       255.1       \$       129.1         WIND       Alaska Vilage Electric Cooperative       Meksoydt Wind Farm       2009 Mov       209       -       137.7       \$       49.5       \$       177.7       \$       49.5       \$       177.7       \$       45.5       \$       177.7       \$       45.5       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       \$       -       \$       -       \$       -       \$       >       >	HYDRO	City of Atka	Chuniisax Creek Hydroelectric	2012 Dec	-	-	- 9	S -		
SOLAR         Alaska Vilage Electric Cooperative         Katlag Solar Construction         201 Oct         -         -         S         -           TRANSMISSION         Mone Joint Vilage Electric Cooperative         Nome Family Flags         1164         \$         67.0           TRANSMISSION         Mone Joint Vilage Stand Prover         Debt Area Vilage Electric Cooperative         Debt Area Vind Turbines         2010 Oct         985         153.6           WIND         Alaska Vilage Electric Cooperative         Toksook Wind Fam         2010 Nov         239         -         137.7         129.1           WIND         Alaska Vilage Electric Cooperative         Mekoryuk Wind Fam         2010 Nov         239         -         137.7         129.1           WIND         Alaska Vilage Electric Cooperative         Emmonal/Alakanuk Wind         2011 Nov         409         262.8         105.6           VIND         Alaska Vilage Electric Cooperative         Emmonal/Alakanuk Wind         2011 Sep         63         -         45.5         17.7           WIND         Alaska Vilage Electric Cooperative         Statabolik Wind Fam         2012 Aday         -         -         5.         -           WIND         Alaska Vilage Electric Cooperative         Statabolik Wind Fam         2012 Aday         -<	HYDRO	Cordova Electric Cooperative	Humpback Creek Hydroelectric Project Rehabilitation	2011 Jul	1,563	-	114.9	5 410.3		
TAALSISSION       Alaska Power and Telephone       North Prince of Wiles Island Interfe Project       2011 Sep       311        16.4       \$       7.7.0         TRANSMISSION       Nome Banner Peak Wind Farm Transmission       2010 Oct       955	HYDRO	Gustavus Electric Company	Falls Creek Hydroelectric Construction	2009 Jul	1,933	-	138.1	5 483.3		
TRANSUSION       Nome Joint Uilty System       Nome Banner Peak Wind Farm Transmission       2010 Oct       955       -       53.9       \$       151.6         VNND       Alaska Vilage Electric Cooperative       Toksook Wind Farm       2000 Aug       660       -       37.7       \$       129.1         WND       Alaska Vilage Electric Cooperative       Mekoryuk Wind Farm       2010 Nov       223       -       13.7       \$       49.5         WND       Alaska Vilage Electric Cooperative       Environmet Alaska Vilage Electric Cooperative       Environmet Alaska Vilage Electric Cooperative       Environmet Alaska Vilage Electric Cooperative       5       107.7         WND       Alaska Vilage Electric Cooperative       Environmet Alaska Vilage Electric Association       COLE Alaska Vilage Electric Association       COLE Alaska Vilage Electric Association       Statkodi K Vind Construction       2012 Apr       -       -       -       \$       -         WND       Koldte Electric Association       Core K Vind Farm Expansion       2010 Sep       12.448       870.7       \$       2973.3         WND       Koldte Electric Association       Korzebue High Ponetation Wind-Bister Pleisel Hybrid       2012 May       -       -       -       \$       -         WND       Mole Bentry State       Sand Point Wind Pene			Kaltag Solar Construction	2012 Oct	-	-	- 5	š -		
WND         Alaska Environmental Pover         Detta Area Wind Turbines         2010 Sep         1.641         -         95.9         \$         256.1           WND         Alaska Village Electric Cooperative         Mekoryuk Vind Farm         2010 Nov         409         -         23.9         13.7         \$         49.5           WND         Alaska Village Electric Cooperative         Compand/Alacanuk Wind         2011 Nov         409         -         22.8         \$         17.7         \$         49.5           WND         Alaska Village Electric Cooperative         Cooperative Compand/Alacanuk Wind         2011 Son         2012 Apr         -         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         - <td< td=""><td>TRANSMISSION</td><td>Alaska Power and Telephone</td><td>North Prince of Wales Island Intertie Project</td><td>2011 Sep</td><td>311</td><td>-</td><td>16.4</td><td>67.0</td></td<>	TRANSMISSION	Alaska Power and Telephone	North Prince of Wales Island Intertie Project	2011 Sep	311	-	16.4	67.0		
WND         Alaska Village Electric Cooperative         Toksool: Mind Farm         2009 Aug         660         37.7         \$         129.1           WND         Alaska Village Electric Cooperative         Mindxagak Wind Farm         2010 Nov         203         -         13.7         \$         49.5           WND         Alaska Village Electric Cooperative         Emmonak/Alakanuk Wind         2011 Sep         63         -         45.5         \$         17.7           WND         Alaska Village Electric Cooperative         Emmonak/Alakanuk Wind         2011 Sep         63         -         45.5         \$         -         -         \$         -         -         5         -         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$         -         \$	TRANSMISSION	Nome Joint Utility System	Nome Banner Peak Wind Farm Transmission	2010 Oct	955	-	53.9	5 151.6		
WND         Alaska Village Electric Cooperative         Mekoryuk Wind Farm         2010 Nov         239         13.7         \$ 49.5           WND         Alaska Village Electric Cooperative         Countagak Wind Farm         2010 Nov         409         28.8         \$ 105.6           WND         Alaska Village Electric Cooperative         Shakholik Wind Construction         2012 Apr         -         -         \$ -           WND         Alaska Village Electric Cooperative         Shakholik Wind Construction         2012 Apr         -         -         \$ -           WND         Kotask Electric Association         GVEA Eva Creek Wind Turbine Purchase         2010 Sep         12.448         870.7         \$ 2.873.3           WND         Kotzebue Electric Association         Kotzebue High Penetation Wind-Battery-Diesel Hybrid         2011 Mag         -         -         \$ -           WND         Nextepue Electric Company         Kongiganak High Penetation Wind-Diesel Smart Grid         2012 Feb         -         -         \$ -           WND         Turbutaliak Kigh Penetation Wind-Diesel Smart Grid         2013 Jul         -         -         \$ -           WND         Alexia Willage Power Company         Kwigilignok High Penetation Wind-Diesel Smart Grid         2012 Feb         -         -         \$ -      <	WIND	Alaska Environmental Power	Delta Area Wind Turbines	2010 Sep	1,641	-	95.9	5 256.1		
WND         Alaska Village Electric Cooperative         Quinhagak Wind Farm         2010 Nov         409         -         28.9         \$         105.6           WND         Alaska Village Electric Cooperative         Emmonal/Alakanuk Wind         2011 Sep         63         -         4.5         \$         1.7           WND         Golden Valley Electric Cooperative         Shatkoloki Wind Construction         2012 Apr         -         -         -         \$         -           WND         Golden Valley Electric Association         GVEA Eva Creek Wind Turbine Purchase         2012 Oct         -         -         -         \$         -           WND         Kotzebue Electric Association, Ik.         Pillar Mountain Wind Project         2013 Mul         -         -         -         \$         -           WND         Nome Joint Utility System         Banner Peak Wind Farm Expansion         2012 Mul         -         -         -         \$         -           WND         Aleutan Wind Energy         Sand Point Wind         Fereitato Wind-Diesel Smart Grid         2011 Paug         196         -         1.3         \$         6.43         \$         -         \$         -         -         -         5         -         -         \$         -	WIND	Alaska Village Electric Cooperative	Toksook Wind Farm	2009 Aug	560	-	37.7 9	5 129.1		
WND         Alaska Vilage Electric Cooperative         Emmona/Alakanuk Wind         2011 Sep         63         -         4.5.         \$         1.7.7           WND         Alaska Vilage Electric Cooperative         Shakkolik Wind Construction         2012 Apr         -         -         -         \$         -           WND         Kodak Electric Association         K-KE Eva Creek Wind Turbine Purchase         2012 Oct         -         -         -         \$         2.873.3           WND         Kodzebue Electric Association         K-KE Eva Creek Wind Fame Expansion         2013 Jul         -         -         -         \$         -           Sub Total Electric Only	WIND	Alaska Village Electric Cooperative	Mekoryuk Wind Farm	2010 Nov	239	-	13.7	6 49.5		
WIND         Alaska Village Electric Cooperative         Shakboili Wind Construction         2012 Apr         -         -         -         S           WIND         Golden Valley Electric Association         GVEA E va Creek Wind Turbine Purchase         2010 Sep         12,448         -         8707.         \$         2873.3           WIND         Kodze bleetic Association         Kötzebue High Penetration Wind-Battery-Diesel Hybrid         2010 Sep         12,448         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         >         -         -         \$         -         -         -         -         >         -         - </td <td>WIND</td> <td>Alaska Village Electric Cooperative</td> <td>Quinhagak Wind Farm</td> <td>2010 Nov</td> <td>409</td> <td>-</td> <td>28.9</td> <td>5 105.6</td>	WIND	Alaska Village Electric Cooperative	Quinhagak Wind Farm	2010 Nov	409	-	28.9	5 105.6		
WIND         Golden Valley Electric Association         GVEA Eva Creek Wind Turbine Purchase         2012 Oct         -         -         s         -           WIND         Kolaida Electric Association, Inc.         Pillar Mountain Wind Project         2010 Sep         12,448         -         870.7         \$         2873.3           WIND         Kotzebue High Penetration Wind-Battery-Diesel Hybrid         2013 Jul         -         -         \$         -           Sub Total Electric Only         2014 Zug         -         1.375         \$         4,543.5           WIND         Aleutan Wind Energy         Sand Point Wind         2011 Zeb         -         -         \$         -           WIND         Aleutan Wind Energy         Sand Point Wind         2011 Zeb         -         -         \$         -           WIND         Rwigillingok Power Company         Korigillingok High Penetration Wind-Diesel Smart Grid         2010 Dec         88         -         6.6.6         \$         30.1           WIND         Turbutilak High Penetration Wind-Diesel Smart Grid         2010 Dcc         88         -         6.6.6         \$         20.1           BOINASS         Alaska Gateway Schoo District         Turbutilak High Penetration Wind-Diesel Smart Grid         2010 Oct	WIND	Alaska Village Electric Cooperative	Emmonak/Alakanuk Wind	2011 Sep	63	-	4.5 \$	5 17.7		
WIND         Kotiak Electric Association, Inc.         Pillar Mountain Wind Project         2010 Sep         12,448         -         870.7         \$         2,873.3           WIND         Kotzebue Electric Association         Kotzebue High Penetation Wind-Battery-Diesel Hybrid         2012 May         -         -         -         \$         -           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 Penetation Wind-Diesel Smart Grid         2010 Dec         88         -         6.6         \$         30.1           WIND         Tunthutliak Comm Sves Assoc         Tunthutliak High Penetation Wind-Diesel Smart Grid         2010 Dec         88         -         6.6         \$         30.1           WIND         Tunthutliak Kigh Penetation Wind-Diesel Smart Grid         2013 Jan         -         -         -         \$         -         -         -         \$         -         -         -         \$         -         -         S         -         -         -         S         -         -         S<	WIND	Alaska Village Electric Cooperative	Shaktoolik Wind Construction	2012 Apr	-	-	- 3	<b>)</b> -		
WIND         Kotiak Electric Association, Inc.         Pillar Mountain Wind Project         2010 Sep         12,448         -         870.7         \$         2,873.3           WIND         Kotzebue Electric Association         Kotzebue High Penetation Wind-Battery-Diesel Hybrid         2012 May         -         -         -         \$         -           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 Penetation Wind-Diesel Smart Grid         2010 Dec         88         -         6.6         \$         30.1           WIND         Tunthutliak Comm Sves Assoc         Tunthutliak High Penetation Wind-Diesel Smart Grid         2010 Dec         88         -         6.6         \$         30.1           WIND         Tunthutliak Kigh Penetation Wind-Diesel Smart Grid         2013 Jan         -         -         -         \$         -         -         -         \$         -         -         -         \$         -         -         S         -         -         -         S         -         -         S<			GVEA Eva Creek Wind Turbine Purchase	2012 Oct	-	-	- (	<u>;</u> -		
WIND         Nome Joint Utility System         Banner Peak Wind Farm Expansion         2013 Jul         -         -         -         \$           SubTotal Electric Only         20,122         -         1,375         \$         4,543.5           WIND         Aleutian Wind Energy         Sand Point Wind         2011 Aug         106         -         14.3         \$         64.9           WIND         Kwigillingok Power Company         Kwigillingok High Penetration Wind-Diesel Smart Grid         2012 Feb         -         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         -         \$         -         1.012         Fourtilitation Association         WinD         Tuntutuika Kigh Penetration Wind-Diesel Smart Grid         2010 Oct         -         3.217         2.44         \$         92.0         SubTotal Electric and Heat         -         -         \$         -         -         \$         -         -         \$	WIND		Pillar Mountain Wind Project	2010 Sep	12,448	-	870.7 \$	5 2,873.3		
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         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         500 Des         958         -         58.2         \$ 211.2           Sub Total Electric and Heat         500 Des         958         -         58.2         \$ 211.2           BIOMASS         Alaska Gateway School District         Tok Wood Heating         2010 Oct         -         3.217         24.4         \$ 92.0           BIOMASS         Delta/Greety School District         Delta Junction Wood Chip Heating         2011 Oct         -         -         -         \$ -           BIOMASS         Delta/Greety School District         Delta Junction Wood	WIND	Kotzebue Electric Association	Kotzebue High Penetration Wind-Battery-Diesel Hybrid	2012 May	-	-	- (	<u> </u>		
WINDAleutian Wind EnergySand Point Wind2011 Aug19614.3\$ 64.9WINDKwigillingok Power CompanyKwigillingok High Penetration Wind-Diesel Smart Grid2012 Feb\$-WINDPurutnaq Power CompanyKongiganak High Penetration Wind-Diesel Smart Grid2010 Dec88-6.6\$30.1WINDTuntutuliak Comm Svcs AssocTuntutuliak High Penetration Wind-Diesel Smart Grid2013 Jan\$-\$\$\$\$\$\$\$\$\$\$\$\$\$<	WIND	Nome Joint Utility System	Banner Peak Wind Farm Expansion	2013 Jul	-	-	- 9	6 -		
WINDKwigilingok Power CompanyKwigilingok High Penetration Wind-Diesel Smart Grid2012 Feb\$-WINDPuxurmaq Power CompanyKongiganak High Penetration Wind-Diesel Smart Grid2010 Dec88-6.6\$30.1WINDTuntutuliak Comm Svcs AssocTuntutuliak High Penetration Wind-Diesel Smart Grid2013 Jan\$-WINDUnalakleet Valley Electric CoUnalakleet Wind Fam2009 Dec958-58.2211.2SubTotal Electric and Heat1244-79\$306.2BIOMASSAlaska Gateway School DistrictTok Wood Heating2010 Oct-3,21724.4\$92.0BIOMASSDelta/Greely School DistrictDelta Junction Wood Chip Heating2010 Oct-7805.9\$2.5BIOMASSGuikana Central Wood Heating2010 Oct-7805.9\$2.52.52.5BIOMASSGuikana Central Wood Heating2011 Oct-7805.9\$2.5<	SubTotal Electric C	Only			20,122	-	1,375	6 4,543.5		
WIND         Purumaq Power Company         Kongiganak High Penetration Wind-Diesel Smart Grid         2010 Dec         88         -         6.6         \$ 30.1           WIND         Tuntutuliak Comm Sves Assoc         Tuntutuliak High Penetration Wind-Diesel Smart Grid         2013 Jan         -         -         \$         -           WIND         Unalakleet Valley Electric Co         Unalakleet VMnd Farm         2009 Dec         958         -         58.2         \$         211.2           SubTotal 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         -	WIND	Aleutian Wind Energy	Sand Point Wind	2011 Aug	196	-	14.3	64.9		
WIND         Purumaq Power Company         Kongiganak High Penetration Wind-Diesel Smart Grid         2010 Dec         88         -         6.6         \$ 30.1           WIND         Tuntutuliak Comm Sves Assoc         Tuntutuliak High Penetration Wind-Diesel Smart Grid         2013 Jan         -         -         \$         -           WIND         Unalakleet Valley Electric Co         Unalakleet VMnd Farm         2009 Dec         958         -         58.2         \$         211.2           SubTotal 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         -	WIND	Kwigillingok Power Company	Kwigillingok High Penetration Wind-Diesel Smart Grid	2012 Feb	-	-	- 3	S -		
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 Oct         -         -         \$ -           BIOMASS         Gulkana Village Council         Gulkana Central Wood Heating         2010 Oct         -         780         5.9         \$ 23.5           BIOMASS         Native Village of Eyak         Cordova Wood Processing Plant         2010 Oct         -         11.44         \$ 42.0           HEAT PUMPS         City and Borough of Juneau         Juneau Aipport 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 May         -         -	WIND		Kongiganak High Penetration Wind-Diesel Smart Grid	2010 Dec	88	-	6.6 5	5 30.1		
Sub Total Electric and Heat1,24279306.2BIOMASSAlaska Gateway School DistrictTok Wood Heating2010 Oct3,21724.4\$ 92.0BIOMASSChilkoot Indian AssociationHaines (Chilkoot) Central Wood Heating System Construction2011 Oct\$BIOMASSDelta/Greely School DistrictDelta Junction Wood Chip Heating2011 Sep\$-\$-BIOMASSGulkana Village CouncilGulkana Central Wood Heating2010 Oct-7805.9\$23.5BIOMASSNative Village of EyakCordova Wood Processing Plant2011 Dec-1,50011.4\$42.0HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$130.5HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$-HEAT RECOVERYGolden Valley Electric AssociationNorth Pole Heat Recovery2019 Nov-5,24961.5\$171.5HEAT RECOVERYMcGrath Light & Power CompanyMcGrath Heat Recovery2010 May-2,89623.0\$156.7HEAT RECOVERYMcGrath Light & Power CompanyMcGrath Heat Recovery2011 Nay-1341.8\$7.1SubTotal Heat OnlyCity and Borough of WrangellWrangell Hydro Based Electric Boilers2011 May-1341.8\$7.1	WIND	Tuntutuliak Comm Svcs Assoc	Tuntutuliak High Penetration Wind-Diesel Smart Grid	2013 Jan	-	-	- (	<u>;</u> -		
Sub Total Electric and Heat1,24279\$ 306.2BIOMASSAlaska Gateway School DistrictTok Wood Heating2010 Oct3,21724.4\$ 92.0BIOMASSChilkoot Indian AssociationHaines (Chilkoot) Central Wood Heating System Construction2011 Oct\$BIOMASSDelta/Greely School DistrictDelta Junction Wood Chip Heating2011 Sep\$-BIOMASSGulkana Village CouncilGulkana Central Wood Heating2010 Oct-7805.9\$23.5BIOMASSNative Village of EyakCordova Wood Processing Plant2011 Dec-1,50011.4\$42.0HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$130.5HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$-HEAT RECOVERYGolden Valley Electric AssociationNorth Pole Heat Recovery2019 Nov-5,24961.5\$171.5HEAT RECOVERYMcGrath Light & Power CompanyMcGrath Heat Recovery2010 May-2,89623.0\$156.7HEAT RECOVERYCity and Borough of VirangellWrangell Hydro Based Electric Eoilers2011 Feb-6,88966.0\$230.3SOLARGolden Valley Electric AssociationMcKinley Village Solar Thermal2010 Jun-1341.87.1SubTotal Heat Only </td <td>WIND</td> <td>Unalakleet Valley Electric Co</td> <td>Unalakleet Wind Farm</td> <td>2009 Dec</td> <td>958</td> <td>-</td> <td>58.2</td> <td>5 211.2</td>	WIND	Unalakleet Valley Electric Co	Unalakleet Wind Farm	2009 Dec	958	-	58.2	5 211.2		
BIOMASSChilkoot Indian AssociationHaines (Chilkoot) Central Wood Heating System Construction2011 Oct\$BIOMASSDelta/Greely School DistrictDelta Junction Wood Chip Heating2011 Sep\$-BIOMASSGulkana Village CouncilGulkana Central Wood Heating2010 Oct-7805.9\$23.5BIOMASSNative Village of EyakCordova Wood Processing Plant2011 Dec-1.50011.4\$42.0HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$130.5HEAT PUMPSCity and Borough of JuneauJuneau Aquatic Ctr. Ground Source Heat Pump2011 AprHEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov <td>SubTotal Electric a</td> <td>and Heat</td> <td></td> <td></td> <td>1,242</td> <td></td> <td></td> <td></td>	SubTotal Electric a	and Heat			1,242					
BIOMASSChilkoot Indian AssociationHaines (Chilkoot) Central Wood Heating System Construction2011 Oct\$BIOMASSDelta/Greely School DistrictDelta Junction Wood Chip Heating2011 Sep\$BIOMASSGulkana Village CouncilGulkana Central Wood Heating2010 Oct-7805.9\$23.5BIOMASSNative Village of EyakCordova Wood Processing Plant2011 Dec-1,50011.4\$42.0HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$130.5HEAT PUMPSCity and Borough of JuneauJuneau Aquatic Ctr. Ground Source Heat Pump2011 AprHEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$-HEAT RECOVERYGolden Valley Electric AssociationNorth Pole Heat Recovery2009 Nov-5,24961.5\$171.5HEAT RECOVERYInside Passage Electric CooperativeHoonah Heat Recovery Project2012 AugHEAT RECOVERYMcGrath Light & Power CompanyMcGrath Heat Recovery2010 May-2,89623.0\$156.7HEAT RECOVERYCity and Borough of WrangellWrangell Hydro Based Electric Boilers2011 Feb-6,88966.0\$230.3SOLARGolden Valley Electric AssociationMcKinley Village Solar Th	BIOMASS	Alaska Gateway School District	Tok Wood Heating	2010 Oct	-	3,217	24.4	5 92.0		
BIOMASSDelta/Greely School DistrictDelta Junction Wood Chip Heating2011 Sep\$BIOMASSGulkana Village CouncilGulkana Central Wood Heating2010 Oct-7805.9\$23.5BIOMASSNative Village of EyakCordova Wood Processing Plant2011 Dec-1,50011.4\$42.0HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$130.5HEAT PUMPSCity and Borough of JuneauJuneau Aquatic Ctr. Ground Source Heat Pump2011 AprHEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov <td< td=""><td>BIOMASS</td><td></td><td></td><td>2011 Oct</td><td>-</td><td>-</td><td>- (</td><td><u> -</u></td></td<>	BIOMASS			2011 Oct	-	-	- (	<u> -</u>		
BIOMASSNative Village of EyakCordova Wood Processing Plant2011 Dec-1,50011.4\$ 42.0HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$ 130.5HEAT PUMPSCity and Borough of JuneauJuneau Aquatic Ctr. Ground Source Heat Pump2011 Apr\$ -HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$ -HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$ -HEAT RECOVERYGolden Valley Electric AssociationNorth Pole Heat Recovery2009 Nov-5,24961.5\$ 171.5HEAT RECOVERYInside Passage Electric CooperativeHoonah Heat Recovery Project2012 Aug\$ -HEAT RECOVERYMcGrath Light & Power CompanyMcGrath Heat Recovery2010 May-2,89623.0\$ 156.7HEAT RECOVERYCity and Borough of WrangellWrangell Hydro Based Electric Boilers2011 Feb-6,88966.0\$ 230.3SOLARGolden Valley Electric AssociationMcKinley Village Solar Thermal2010 Jun-1341.87.1Sub Total Heat Only25,782231\$ 853.6	BIOMASS	Delta/Greely School District	Delta Junction Wood Chip Heating	2011 Sep	-	-	- 9	<u> -</u>		
HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$130.5HEAT PUMPSCity and Borough of JuneauJuneau Aquatic Ctr. Ground Source Heat Pump2011 Apr\$-HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$-HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$-HEAT RECOVERYGolden Valley Electric AssociationNorth Pole Heat Recovery2009 Nov-5,24961.5\$171.5HEAT RECOVERYInside Passage Electric CooperativeHoonah Heat Recovery Project2012 AugHEAT RECOVERYMcGrath Light & Power CompanyMcGrath Heat Recovery2010 May-2,89623.0\$156.7HEAT RECOVERYCity and Borough of WrangellWrangell Hydro Based Electric Boilers2011 Feb-6,88966.0\$230.3SOLARGolden Valley Electric AssociationMcKinley Village Solar Thermal2010 Jun-1341.8\$7.1Sub Total Heat Only-25,782231\$853.6	BIOMASS	Gulkana Village Council	Gulkana Central Wood Heating	2010 Oct	-	780	5.9 9	5 23.5		
HEAT PUMPSCity and Borough of JuneauJuneau Airport Ground Source Heat Pump2011 May-5,11737.1\$130.5HEAT PUMPSCity and Borough of JuneauJuneau Aquatic Ctr. Ground Source Heat Pump2011 Apr\$-HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$-+-+-+-+-+-++-++-++ <t< td=""><td>BIOMASS</td><td>Native Village of Eyak</td><td>Cordova Wood Processing Plant</td><td>2011 Dec</td><td>-</td><td>1,500</td><td>11.4</td><td>5 42.0</td></t<>	BIOMASS	Native Village of Eyak	Cordova Wood Processing Plant	2011 Dec	-	1,500	11.4	5 42.0		
HEAT PUMPSCity and Borough of JuneauJuneau Aquatic Ctr. Ground Source Heat Pump2011 Apr\$-HEAT PUMPSCity of SewardAlaska Sealife Center Ph II Seawater Heat Pump Project2011 Nov\$-HEAT RECOVERYGolden Valley Electric AssociationNorth Pole Heat Recovery2009 Nov-5,24961.5\$171.5HEAT RECOVERYInside Passage Electric CooperativeHoonah Heat Recovery Project2012 Aug\$-HEAT RECOVERYMcGrath Light & Power CompanyMcGrath Heat Recovery Project2010 May-2,89623.0\$156.7HEAT RECOVERYCity and Borough of WrangellWrangell Hydro Based Electric Boilers2011 Feb-6,88966.0\$230.3SOLARGolden Valley Electric AssociationMcKinley Village Solar Thermal2010 Jun-1341.8\$7.1Sub Total Heat Only25,782231\$853.6	HEAT PUMPS			2011 May	-	5,117	37.1 \$	5 130.5		
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 Project       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	HEAT PUMPS	City and Borough of Juneau			-	-	- (	<u>;</u> -		
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	HEAT PUMPS		Alaska Sealife Center Ph II Seawater Heat Pump Project		-	-	- (	<u> -</u>		
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	HEAT RECOVERY			2009 Nov	-	5,249	61.5	5 171.5		
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					-	-				
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				<b>v</b>	-	2,896	23.0 9	5 156.7		
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			,		-	,				
SubTotal Heat Only 25,782 231 \$ 853.6					-	/				
	SubTotal Heat Onl					25,7 <u>82</u>				
					21,364			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 guarter 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

			Sta	ge 3 Re	view So	ores (m	iax)				Project	Cost			Re	commendation	
Fuel Price	1. Costof Energy	2. Match	3. Tech & Econ Feas	4. Readi- ness	5. Benefit	6. Local Supt	7. Sustan- ability	Total	State- wide							Recommend	Cumulative
\$/gal	(35)	(15)	(20)	(5)	(15)	(5)	(5)	(100)	Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recomnd	Early	Funding	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	\$114,96
	12.26	15.00	14.23	2.83	7.63	5.00	5.00	61.95	34	\$5,500,000	\$800,000		Construction	FULL SP		\$800,000	\$914,96
	22.45	13.00	8.57	2.50	0.75	5.00	2.50	54.77	43	\$5,000,000	\$428,646		Feasibility	FULL		\$428,646	\$1,343,61
	22.55	9.00	9.50	3.00	4.125	2.00	4.00	54.18	45	\$1,397,403	\$1,256,403		DesignConstructio		Y	\$200,000	\$1,543,61
	22.45	9.00	9.27	2.50	0.38	4.00	1.67	49.26	55	\$52,050	\$47,050		Feasibility	FULL SP	Ц	\$47,050	\$1,590,66
	1									\$72,400,000 \$84,484,707	\$160,000 \$2,807,064	\$2,204,109	Feasibility	Did Not Pass Sta	ge 2	\$1,590,661	
	24.42	7.00	16.67	3.00	11.63	5.00	4.50	72.21	7	\$3,946,050		\$2,204,105		FULL		\$1,330,001	\$342,00
\$5.29	23.14	6.00	16.60	5.00	10.25	4.00	3.17	68.16	18	\$753,313	\$731,372		DesignConstructio		H	\$731,372	\$1,073,37
										\$4,699,363	\$1,073,372	\$39,941	J			\$1,073,372	• ,,• ,• ,•
	30.26	11.00	17.27	5.00	11.00	5.00	3.83	83.36	2	\$5,389,149		\$3,036,496	Construction	FULL		\$2,352,653	\$2,352,65
	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	\$2,432,65
	22.09	6.00	10.47	3.83	4.13	2.00	3.17	51.68	54	\$2,566,000	\$306,000	\$10,000		FULL SP	Y	\$306,000	\$2,738,65
	20.81	0.00	10.43	3.50	4.88	0.00	4.00	43.62	63	BLANK	\$1,375,000		Design	PARTIAL SP	Π	\$500,000	\$3,238,65
										\$1,940,379	\$1,843,379	\$97,000	huston	Not Recommende	_		
										\$7,224,213	\$159,000		ReconFeasibility	Not Recommende	_		
										\$235,000	\$230,000			Not Recommende			
			-		4					\$2,000,000	\$800,000		ReconFeasibility	Not Recommende	ed	63.0.00 65.0	
	12.44	45.00	47.07	4.00	42.42	2.00	E 00	60.42	46	\$19,464,741 \$49,000,000	\$7,146,032 \$5,914,491	\$3,308,496	Construction	Destiel DEEAC		\$3,238,653	¢4.764.64
_	12.44	15.00	17.87	4.00	12.13	2.00	5.00	68.43	16 16	\$49,000,000	\$0,914,491	\$5,914,491	Construction	Partial-REFAC++ FULL ++		\$4,764,652 \$1,149,839	\$4,764,6 \$5,914,4
\$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			\$1,149,039	\$6,039,4
φπ.17	12.44	11.00	9.17	3.00	6.38	5.00	1.33	48.32	58	\$2,250,000			Feasibility	FULL	ťł	\$170,000	\$6,209,49
				0.00	0.00	0.00				\$1,650,000	\$1,400,000			Not Recommende	ed		++,=++, ++
										\$53,178,150		\$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	П	\$400,000	\$400,00
	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	\$1,870,54
										\$1,300,000	\$81,000	\$300	FeasibilityDesign	Did Not Pass Sta	ge 2		
	1									\$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		Construction	FULL	Н	\$450,000	\$450,00
\$6.80	29.75	6.00	16.27	3.83	10.13	3.00	3.00	71.98	8	\$469,311	\$455,642		DesignConstruction	FULL	Н	\$455,642	\$905,64
\$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	Desim	FULL SP	H	\$689,251	\$1,594,89
\$4.60	23.80 20.13	7.00	15.83 17.03	2.50 3.83	11.63	5.00	4.50 4.17	70.26	12 21	\$4,833,000 \$757,299	\$123,500 \$735,242		Feasibility DesignConstruction	FULL	⊢	\$123,500 \$735,242	\$1,718,39 \$2,453,63
\$6.21	27.17	6.00	14.83	2.83	12.38	0.00	3.00	66.21	24	\$320,456	\$311,456		Construction	FULL SP	H	\$311,456	\$2,765,0
\$4.30	18.81	6.00	17.07	3.00	12.50	5.00	2.83	65.21	26	\$558,814	\$558,814			FULL SP		\$558,814	\$3,323,90
φ1.00	35.00	7.00	10.60	2.00	4.50	2.00	1.67	62.77	30	\$8,000,000	\$375,000			PARTIAL	H	\$75,000	\$3,398,90
	21.60	9.00	13.00	5.00	4.50	5.00	4.33	62.43	31	\$4,782,528	\$4,274,575		Construction	FULL SP	Ħ	\$4,274,575	\$7,673,48
\$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	П	\$293,737	\$7,967,2
\$3.89	17.02	6.00	14.03	5.00	4.50	5.00	3.83	55.39	41	\$297,408	\$288,745		DesignConstructio		Π	\$288,745	\$8,255,96
\$6.80	29.75	6.00	9.33	2.83	2.13	2.00		54.54	44	\$259,817	\$250,817			FULL SP		\$250,817	\$8,506,77
	22.05	7.00	10.43	2.50	1.50	5.00	3.83	52.32	49	\$3,214,875		\$18,600		FULL SP		\$353,400	\$8,860,17
										\$232,430			DesignConstruction		_		
		_								\$1,250,000			Feasibility	Did Not Pass Sta	-		
										\$2,284,000			DesignConstructio				
						2				\$4,358,784		\$50,000 \$896,654	DesignConstructio	Did Not Pass Sta	ge 1	¢0 000 4 70	
	6.56	9.00	14.83	2.50	12.38	2.00	5.00	52.27	50	\$33,213,710 \$17,342,837		\$896,654 \$201,782		FULL SP	H	\$8,860,179 \$2,017,818	\$2,017,81
	0.50 6.56	9.00	14.83	3.00	4.00	2.00	5.00 4.50	42.23	50 64	\$17,342,837		\$201,782 \$44,000		FULL SP	H	\$2,017,818	\$2,017,8 \$2,457,8
	0.00	0.00	10.17	0.00	4.00	2.00	4.00	72.20	04	\$21,908,037		\$245,782			H	\$2,457,818	φ2,757,0
\$6.07	26.56	7.00	12.57	2.00	6.00	5.00	3.00	62.13	33	\$2,692,700			DesignConstructio	PARTIAL SP	Y	\$270,000	\$270,0
40.01	18.27	6.00	9.20	4.50	0.38	3.00		45.85	61	\$77,000			Construction	FULL SP	Ħ	\$75,000	\$345,00
										\$38,660,000		\$150,000		Did Not Pass Sta	ge 2		. ,,.
										\$447,800			Construction	Not Recommende			
										\$467,252			Construction	Not Recommende	ed		
										\$42,344,752	\$6,397,241	\$257,000			-	\$345,000	

Table 5.

## **Renewable Energy Fund Round VII—Recommendations and Funding**

unt		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 2 Score	AEA B/C	Appl B/C	Cost Ener (\$/k\ )	
1		Aleutians		Atka Dispatchable Heat	City of Atka	Local Government	Hydro to Heat	82.83	3.18	6.90	\$0	
2	s	Aleutians		Waterfall Creek Hydroelectric Project	City of King Cove	Local Government	Hydro	71.17	1.37	1.87	\$0	
	S	Aleutians		False Pass Hydrokinetic Feasibility Study	City of False Pass	Local Government	Hydrokinetic	42.83	0.22	0.22	\$(	
	S	Aleutians		Sand Point Energy Storage Project	TDX Sand Point Generating, LLC	Utility	Storage of Renew	47.50	1.08	1.01	\$	
5	S	Aleutians	1080	False Pass Wind Energy Project	City of False Pass Electric Utility	Local Government	Wind	46.33	0.67	0.61	\$	
5	S	Aleutians	1056	Adak Wind Data Collection Analysis and Preliminary Design	City of Adak, Alaska	Local Government	Wind	35.33	0.47	0.27	\$	
	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	\$	
2	Η	Bering Straits	1040	Brevig Mission Water System Heat Recovery	City of Brevig Mission	Government Entity	Heat Recovery	83.00	1.51	2.01	\$	
	2	Bering Straits Total										
	S	Bristol Bay	1036	Packers Creek Hydroelectric Project Phase II	Chignik Lagoon Village Council	Government Entity	Hydro	86.33	1.66	3.85	\$	
2	S	Bristol Bay	1072	Igiugig Wind Resource Feasibility and Conceptual Design	Igiugig Village Council	Government Entity	Wind	47.00	0.86	1.40	\$	
}	S	Bristol Bay		Koliganek Wind Diesel and Heat Recovery	New Koliganek Village Council	Government Entity	Wind	52.33	1.05	1.60	\$	
ŀ	S	Bristol Bay		Chignik Hydroelectric Project Design and Permitting	City of Chignik	Local Government	Hydro	52.17	1.02	1.60	\$	
5		Bristol Bay	122100000	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.	Utility	Heat Recovery		1.39	6.44	\$	
6	S	Bristol Bay		Port Alsworth Hydropower PreConstruction Phase	Port Alsworth Improvement Corporation	Government Entity	Hydro		1.52		\$	
7	_	Bristol Bay		Bristol Bay Borough School District Solar PV Project	Bristol Bay Borough School District	Government Entity	Solar PV		0.96	1.28	\$	
8	_	Bristol Bay	1063	lliamna Solar Ground Mounted Energy System	lliamna Village Council	Government Entity	Solar PV		0.01	0.40	\$	
	-	Bristol Bay Total	(									
1	S	Copper River/Chugach		Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro	89.33	3.96	3.68	\$	
1	S	Copper River/Chugach	_	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.		Hydro					
2	Н	Copper River/Chugach		Wood Chip Boiler for The Native Village of Tazlina	Native Village of Tazlina	Government Entity	Biomass	64.50	1.19	1.84	\$	
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	\$	
4	S	Copper River/Chugach		Chenega Bay Hydroelectric Construction	Native Village of Chenega	Government Entity	Hydro		1.14	1.02	\$	
	_	Copper River/Chugach T						50.00		4 70		
1		Kodiak		Old Harbor Hydroelectric Project Final Design and Permitting		Utility	Hydro	56.33	1.11	1.79	\$	
2	S	Kodiak		Flywheels ESS for Kodiak Pier Electric Crane	Kodiak Electric Association, Inc.	Utility	Storage of Renew	66.83	0.51	1.02	\$	
3	-	Kodiak	1004	Karluk Tribal Council Wind Energy System	Karluk Tribal Council	Government Entity	Wind	21.17	0.76	1.83	\$	
	3 H	Kodiak Total	4050	Numero Inue II est Deseuror Dusiest	City of Numero Louis		Liest Deseusers	07.67	2.20	0.00	¢	
1 2	п	Lower Yukon-Kuskokwim		Nunam Iqua Heat Recovery Project Tuntutuliak Heat Recovery	City of Nunam Iqua	Local Government	Heat Recovery	87.67 81.33	2.20	2.33 2.32	\$ \$	
2 3	н	Lower Yukon-Kuskokwim Lower Yukon-Kuskokwim	1085	Emmonak Heat Recovery System	Native Village of Tuntutuliak City of Emmonak	Government Entity Government Entity	Heat Recovery Heat Recovery	87.67	2.56	4.02	ې \$	
) 1	п S	Lower Yukon-Kuskokwim	1067	Mountain Village Wind Feasibility and Conceptual Design			Wind	79.17	1.70	1.23	<del>ې</del> \$	
+ 5	э Н	Lower Yukon-Kuskokwim		St Marys Heat Recovery System	Alaska Village Electric Cooperative, Inc. City of St. Mary's	Utility Government Entity	Heat Recovery	85.17	1.61	2.21	э \$	
) ô	H	Lower Yukon-Kuskokwim	1073	Kongiganak Wind Heat Electrical Thermal Storage	Puvurnaq Power Company	Utility	Wind to Heat	74.17	1.70	2.55	\$	
7	н	Lower Yukon-Kuskokwim	1041	Chevak Water and Vacuum Plant Heat Recovery	City of Chevak	Government Entity	Heat Recovery	85.33	1.83	2.33	\$	
, 3	S	Lower Yukon-Kuskokwim		Mertarvik Renewable Energy Feasibility and Conceptual Desig			Wind	53.00	1.14	2.44	<del>پ</del> \$	
9	S	Lower Yukon-Kuskokwim		St Marys Pitkas Point Wind Energy Construction Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	65.00	1.19	1.47	\$	
0	Н	Lower Yukon-Kuskokwim	1071	Kwigillingok Wind Heat Electrical Thermal Storage	Kwig Power Company	Utility	Wind to Heat	64.17	1.53	1.73	\$	
1	a de la composición de	Lower Yukon-Kuskokwim	Contraction of the	Eek Water System Heat Recovery	City of Eek		Heat Recovery	70.17	1.01	1.35	\$	
	-	Lower Yukon-Kuskokwim			TCSA Electrical Services		Wind to Heat	46.67	1.00	0.96	\$	
3		Lower Yukon-Kuskokwim		Marshall Wind Energy Final Design and Permitting Project	Alaska Village Electric Cooperative, Inc.		Wind	52.17	0.98	1.60	\$	
	Н	Lower Yukon-Kuskokwim		Chuathbaluk Water System Heat Recovery	City of Chuathbaluk	Government Entity	Heat Recovery		0.97	0.98	\$	
	_	Lower Yukon-Kuskokwim	_	Four Villages Intertie Design	Nuvista Light and Electric Cooperative	Government Entity	Transmission					
	_	Lower Yukon-Kuskokwim		Multiple Alternative Energy Sources for Napakiak	Napakiak Ircinraq Power Company	Utility	Wind					
101		Lower Yukon-Kuskokwim	1086	Chefornak High Penetration Wind Diesel System	Natergak Light Plant, City of Chefornak	Local Government	Wind					
6	5	Lower Yukon-Kuskokwir										
6				Atqasuk Transmission Line Design and Permitting Project	North Slope Borough	Local Government	Transmission	74.17	3.30	3.55	\$	
6 7		North Slope		Kaktovik Wind Diesel Design and Permitting	North Slope Borough	Local Government	Wind	65.83	1.03	1.37	\$	
6 7 1	17			i alter the breech beergin alter i erintaling								
6 7 1	17 S S	North Slope										
6 7 1	17 S S	North Slope North Slope		Kotzebue Paper and Wood Waste to Energy Project	City of Kotzebue	Local Government	Biomass	62.83	1.12	1.16	\$	
6 7 1 2 1	17 S S 2	North Slope North Slope North Slope Total	1048 1038		City of Kotzebue Northwest Arctic Borough	Local Government Local Government	Biomass Solar PV	62.83 46.00	1.12 0.68	1.16 0.83	_	
6 7 1 2 1 2 3	17 S S 2 H	North Slope North Slope North Slope Total Northwest Arctic	1048 1038 1001	Kotzebue Paper and Wood Waste to Energy Project							\$	
6 7 1 2 1 2	17 S S 2 <mark>H</mark> S	North Slope North Slope North Slope Total Northwest Arctic Northwest Arctic	1048 1038 1001	Kotzebue Paper and Wood Waste to Energy Project Northwest Arctic Borough Solar PV Project	Northwest Arctic Borough	Local Government	Solar PV	46.00	0.68	0.83	\$ \$	
6 7 1 2 1 3	17 S 2 H S S	North Slope North Slope North Slope Total Northwest Arctic Northwest Arctic Northwest Arctic	1048 1038 1001 1059	Kotzebue Paper and Wood Waste to Energy Project Northwest Arctic Borough Solar PV Project Cosmos Hills Hydroelectric Design and Permitting	Northwest Arctic Borough Alaska Village Electric Cooperative	Local Government Utility	Solar PV Hydro	46.00	0.68 0.71	0.83 1.05	<del>\$</del> \$ \$ \$ \$ \$	

					Note: 9 months	s only for 2013										
	20	12			Jan - Se	p, 2013			Cumulative Total (2009-Sep,2013)							
Energy Pr	oduction	Fuel Dis	splaced	Energy P	roduction	Fuel Dis	spk	aced	Energy Pr	oduction	Fuel Dis	spla	ced			
Electrical	Thermal	Diesel	Value	Electrical	Thermal	Diesel		Value	Electrical	Thermal	Diesel		Value			
(MWh)	(MMBtu)	(Galx1000)	(\$ x 1000)	(MWh)	(MMBtu)	(Galx1000)		x 1000)	(M Wh)	(M M Btu)	(Galx1000)		x 1000			
-	-	-	\$- \$-	33,834	-		\$ \$	1,602.0	33,834	-	3,224.0		1,079			
-	-	- 070.0	•	285	-		\$ \$	118.4	285	-	21.9 610.5		118			
3,510 1,956	-	270.0 150.4	\$ 1,050.6 \$ 645.3	2,933 1,490	-	220.6 114.6	ֆ \$	809.6 481.1	\$,006 \$,044	-	583.8	ъ \$	2,270 2,143			
1,300	-	100.4	a 640.3 \$-	1,490	-	0.6	Ф \$	481.1	8,044	-	0.6	ъ \$	2,143			
- 589	-	44.3	φ - \$ 161.7	644	-	48.4	Φ \$	2.8	, 1,544	-	109.1	Ф \$	403			
995	-	61.2	\$ 198.3	700	-	43.1	Ψ \$	138.2	4,040	-	236.0	Ψ \$	730			
989	-	63.9	\$ 132.9	210	-	13.6	Φ \$	36.4	3,429	-	202.8	Ψ \$	482			
131	-	9.6	\$ 38.5	96	-	7.0	Ψ \$	26.1	922	-	64.2		238			
147	-	10.4	\$ 41.1	123	-	8.7	\$	32.5	513	-	33.2		120			
500	-	38.1	\$ 161.4	391	-	29.8	\$	116.7	1,372	-	101.9	\$	398			
505	-	35.8	\$ 142.0	406	-	28.8	\$	110.1	975	-	69.1	\$	270			
116	-	8.9	\$ 35.7	119	-	9.2	\$	35.1	235	-	18.1	\$	70			
13,091	-	921.9	\$ 1,972.9	50,496	-	3,556.1	\$	9,530.3	ର ର.5ଞ	-	4,478.0		11,500			
16,201	-	1,140.9	\$ 4,211.8	18,085	-	· · ·	\$	4,385.3	65,185	-	4,584.6		15,84			
2,177	-	148.1	\$ 549.9	1,941	-	132.0	\$	468.7	4,118		280.1	\$	1,01			
-	-	-	\$ -	635	-	38.8	\$	124.6	635	-	38.8		12			
40,908	_	2.904	\$ 9,337.1	112,395	-	8,776	\$	18,193.3	196,732	-	14,657		36,82			
792	-	58,1	\$ 266.2	950	15	69.7	\$	321.9	1,937	15	142.2	<u> </u>	65			
-	-	-	\$ -	46	66	4.1	\$	19.4	46	66	4.1	•	1:			
185	-	14.0	\$ 63.4	232	454	21.9	\$	105.0	504	454	42.5		19			
-	-	-	\$-	136	221	10.4	\$	47.4	136	221	10.4	\$	4			
938	-	67.8	\$ 247.6	626	204	47.2	\$	179.8	3,250	204	226.4	\$	- 77			
1,914	_	140	\$ 577.2	1,988	960	153	\$	673.5	5,873	960	426	\$	1,69			
-	4,595	44.0	\$ 147.0	-	7,141	68.7	\$	250.6	-	16,371	152.1	\$	54			
-	212	1.7	\$ 6.8	-	231	2.4	\$	10.4	-	453	4.2	\$	1			
-	3,977	38.2	\$ 133.5	-	3,458	33.2	\$	132.6	-	7,435	71.5	\$	26			
-	780	7.0	\$ 28.9	-	-	-	\$	-	-	1,840	15.9	\$	6			
-	600	5.4	\$ 25.3	-	-	-	\$	-	-	2,820	24.4	\$	9			
-	5,400	45.0	\$ 159.0	-	5,400	45.0	\$	159.0	-	15,917	127.1	\$	44			
-	1,740	16.7	\$ 61.4	-	3,068	29.5	\$	124.8	-	4,808	46.2	\$	18			
-	-	-	\$-	-	2,892	27.8	\$	106.2	-	2,892	27.8	\$	10			
-	3,349	32.8	\$ 90.6	-	-	-	\$	-	-	9,595	106.0	\$	28			
-	-	-	\$-	-	4,119	36.7	\$	178.7	-	4,119	36.7	\$	17			
-	2,617	25.2	\$ 97.1	-	1,681	16.2	\$	120.1	-	\$,356	76.6	\$	41			
-	7,711	79.4	\$ 134.5	-	4,998	51.5	\$	\$2.6	-	19,597	196.9	\$	44			
-	130	1.9	\$ 7.6	-	108	0.8	\$	6.8	-	433	5.0	\$	2			
-	31,111	297	\$ 891.7	-	33,096	312	\$	1,171.8	-	94,636	890	\$	3,07			
42,821	31,111	3,341.0	\$ 10,806.1	114,384	71,126	· · · ·		21,646.6	202,605	95,596	15,972.7	\$	41,601			
	2013 E	stimated Anni	ualized 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.

#### Table 2.



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.

			Ben / Cost					Recommendatio		
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		



#### Table 4.



Alaska Energy Authority City of Akutan Town Creek Hydro

#### **RENEWABLE ENERGY FUND STATUS REPORT - JANUARY 2014**

### **Renewable Energy Fund Round VII—Not Recommended Applications**

ount	:	Energy Region	ID	Project Name	Applicant
1	S	Southeast	1019	Survey Creek Hydroelectric Project	Edna Bay Community
2	S	Railbelt	1002	Poncelet Kinetics RHK100 Prototype Demonstration	Whitestone 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	Н	Bristol Bay	1006	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.
10	Н	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 Intertie	Metakata 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	н	Northwest Arctic	1076	NWAB School District Solar Thermal Systems	Northwest Arctic Borough School District
20	S	Lower Yukon-Kuskokwim	1039	Four Villages Intertie Design	Nuvista Light and Electric Cooperative
21	S	Lower Yukon-Kuskokwim	1054	Multiple Alternative Energy Sources for Napakiak	Napakiak Ircinraq Power Company
22	S	Lower Yukon-Kuskokwim	1086	Chefornak High Penetration Wind Diesel System	Naterqak Light Plant, City of Chefornak

#### 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,

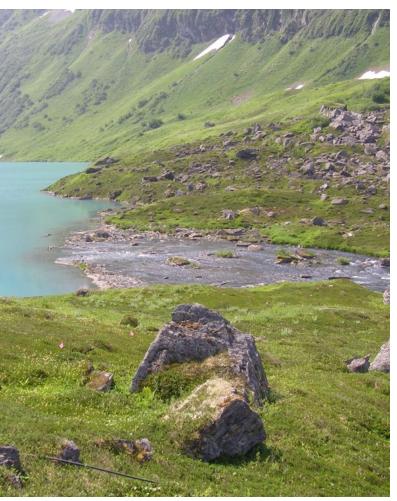
Valdez

REF Grant: \$2,288,000

Total Project Cost: \$38,804,000

Projected Annual Fuel Savings: 1,100,000 gallons equiv.

Capacity: 6.5MW



### Renewable Energy Fund Round 7 - Statewide Recommendations and Funding for Heat and Standard Applications

_			Renewable Energy Fu		Staten		Ben / C						ge 3 Reviev			Juna	uru /	Applications	Project C	ost			Table 3. Recommendation	
										1.		3. Tech &	ge e e e .	6.	7.									
						Total Stage 2		Cost Ener	gy Price	e Energy	2. Matc	Econ h Feas	4. 5 Readi- Ben	i. Loca lefit Supt	t ability	/ Total	State- wide						rly	
ount Energy Region 1 H Aleutians	ID 1026	Project Name Atka Dispatchable Heat	Applicant City of Atka	Applicant Type Local Government	Energy Source Hydro to Heat			Appl B/C \$/kW 6.90 \$0.			(15)		ness (5) (1 5.00 12.	_			Rank	Project Cost \$135,254	Grant Requested \$114,965	Match Offered	Phase Construction	AEA Recomnd FULL	យី Recommend Funding \$114,965	
2 S Bristol Bay		Packers Creek Hydroelectric Project Phase II	Chignik Lagoon Village Council	Government Entity	Hydro			3.85 \$0.			_	_	5.00 12.					\$5,389,149	\$2,352,653	. ,		FULL	\$2,352,653	. ,
,		Venetie Clinic Heat Recovery	Village of Venetie		Heat Recovery		1.68			50 35.00		17.03		.25 4.0			3	\$204,428	\$198,474	. , ,	DesignConstruction		\$198,474	
4 H Yukon-Koyukok/Upper Ta		Galena Community Wood Heat Project	City of Galena	Local Government	Biomass			3.96 \$0.					3.83 14.	.13 5.0	0 4.5	0 77.40	4	\$3,144,200	\$3,096,898			FULL SP	\$3,096,898	\$5,762,
5 H Lower Yukon-Kuskokwim		Nunam Iqua Heat Recovery Project	City of Nunam Iqua	Local Government	Heat Recovery			2.33 \$0.						.50 5.0		0 73.69	-	\$603,000	\$450,000		Construction	FULL	\$450,000	\$6,212,
6 H Southeast	-	Sitka Centennial Hall Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	80.50				59 15.71				.75 5.0		3 72.39	-	\$232,620	\$232,620	. , ,	DesignConstruction		\$232,620	\$6,445,
7 S Bering Straits 8 H Lower Yukon-Kuskokwim		Stebbins St Michael Wind Energy Final Design and Permittin Tuntutuliak Heat Recovery	Native Village of Tuntutuliak	Utility Government Entity	Wind Heat Recovery			2.74 \$0. 2.32 \$0.		24.42		16.67 16.27	3.00 11. 3.83 10.	13 3.0		0 72.21		\$3,946,050 \$469,311	\$342,000 \$455,642	\$18,000	Design DesignConstruction	FULL	\$342,000 \$455,642	\$6,787,6 \$7,243,2
9 H Lower Yukon-Kuskokwim		Emmonak Heat Recovery System	City of Emmonak	Government Entity	Heat Recovery	87.67				77 25.24		) 17.53		.50 3.0	0 2.6		9	\$689,251	\$689,251		DesignConstructio		\$689,251	\$7,932,
10 S Yukon-Koyukok/Upper Ta		Chisana Mountain Wind Feasibility Project	Alaska Power Company	Utility	Wind	85.00	2.55	\$0.				) 17.00	2.50 12.	.50 2.0	0 4.1	7 70.63	10	\$148,800	\$119,000		Feasibility	FULL	\$119,000	. , ,
		Yerrick Creek Hydroelectric Project	Native Village of Tanacross	Government Entity	Hydro			9.84 \$0.					3.00 11.					\$19,000,000	\$6,000,000	. , ,		PARTIAL	\$75,000	
	-	Mountain Village Wind Feasibility and Conceptual Design	Alaska Village Electric Cooperative, Inc.	Utility	Wind			1.23 \$0.					2.50 11.	_	_	_		\$4,833,000	\$123,500		Feasibility	FULL	\$123,500	
13 H Southeast 14 H Southeast		Kake Community Energy Ketchikan Gateway Borough Biomass Heating Project	Organized Village of Kake Ketchikan Gateway Borough	1	Biomass Biomass	73.83		1.18 \$0. 0.24 \$0.		35 25.59				.00 4.0 .00 5.0			13 14	\$1,423,292 \$1,957,261	\$208,073 \$1,412,889	\$20,000	Design Construction	PARTIAL PARTIAL SP	Y \$175,000 \$620,000	\$8,425,0 \$9,045,0
15 S Railbelt				Utility	Hydro			0.24 \$0.			_		5.00 12.			0 68.52		\$21,772,523	\$3,453,920		Construction	Partial-REFAC**	\$1,760,019	\$10,805,0
		+ Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro			3.68 \$0.		_			4.00 12.				-	\$49,000,000	\$5,914,491		Construction	Partial-REFAC++	\$4,764,652	
17 S Southeast		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 2.0	0 3.8	3 68.20	17	\$300,000	\$275,000		ReconFeasibility		\$80,000	\$15,649,6
18 H Bering Straits		Brevig Mission Water System Heat Recovery	City of Brevig Mission	Government Entity	Heat Recovery			2.01 \$0.		_	_	_		.25 4.0				\$753,313	\$731,372		DesignConstruction		\$731,372	
19 H Railbelt		Seldovia House Ground Source Heat Pump Project	Cook Inlet Housing Authority	Government Entity	Heat Pumps	58.17				19 22.71				25 5.0		3 67.93		\$362,805	\$318,289		DesignConstructio		\$318,289	\$16,699,3
20 H Southeast 21 H Lower Yukon-Kuskokwim		Haines Borough Municipal Buildings Biomass Project St. Mary's Heat Recovery System	Haines Borough City of St. Mary's	Local Government Government Entity	Biomass Heat Recovery		1.72	1.79 \$0. 2.21 \$0		09 17.89 60 20.13	-	) 17.70 ) 17.03	3.83 12. 3.83 11.	.63 2.0 25 5.0	_	0 67.55 7 67.41		\$1,374,892 \$757,299	\$1,237,403 \$735,242		DesignConstruction		\$1,237,403 \$735,242	
		Biomass Heat for Minto Community Buildings	Village of Minto	Government Entity	Biomass			1.37 \$0.										\$403,550	\$274,750	. ,	DesignConstructio		\$274,750	
23 H Southeast		Yakutat Biomass District Heating Loop	City and Borough of Yakutat	Local Government	Biomass			2.31 \$0.						.88 5.0				\$335,456	\$286,166		DesignConstruction		Y \$103,000	. , ,
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 \$6.2	21 27.17	6.00	14.83	2.83 12.	.38 0.0	0 3.0	0 66.21	24	\$320,456	\$311,456	\$9,000	Construction	FULL SP	\$311,456	\$19,361,
25 S Bristol Bay		Igiugig Wind Resource Feasibility/Conceptual Design	Igiugig Village Council	Government Entity	Wind			1.40 \$0.					2.50 0.					\$110,000	\$80,000	. ,	,	FULL SP	\$80,000	
		Chevak Water and Vacuum Plant Heat Recovery	City of Chevak	Government Entity	Heat Recovery	85.33	1.83	2.44 \$0.	48 \$4.3	30 18.81	6.00	) 17.07	3.00 12.	.50 5.0	0 2.8	3 65.21	26	\$558,814	\$558,814		DesignConstruction	FULL SP	\$558,814	. , ,
SubTotal - Top Ranking \$		on post stage 4 regional spreading and REFAC com		Utility	Hydro												15	\$118,224,724	\$29,972,868	\$36,760,109		FULL**	\$20,000,000 \$1.693.901	
S Copper River/Chugach		+ Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro												16					FULL++	\$1,149,839	
27 H Southeast		Southeast Island School District Wood Boilers	Southeast Island School District	Government Entity	Biomass	76.67	1.47	2.32 \$0.	41 \$3.8	30 16.63	3 11.00	15.33	3.00 9.	.75 5.0	0 4.0	0 64.71	27	\$1,058,775	\$940,950	\$177,825	Construction	FULL SP	\$940,950	
28 H Yukon-Koyukok/Upper Ta	an 1045	Grayling Heat Recovery System	City of Grayling	Government Entity	Heat Recovery			2.02 \$0.						.00 4.0				\$332,590	\$322,903	\$19,374	DesignConstruction	FULL	\$322,903	\$24,107,5
29 H Southeast		Hydaburg Schools Wood Fired Boiler Project	Hydaburg City School District	Government Entity	Biomass			2.45 \$0.										\$627,900	\$583,900		DesignConstruction		Y \$125,000	. , ,
30 S Lower Yukon-Kuskokwim		Mertarvik Renewable Energy Feasibility and Conceptual Des			Wind	53.00		\$0.						50 2.0	-	_		\$8,000,000	\$375,000		ReconFeasibility		\$75,000	
31 S Lower Yukon-Kuskokwim 32 H Lower Yukon-Kuskokwim		St Marys Pitkas Point Wind Energy Construction Project Kwigillingok Wind Heat Electrical Thermal Storage	Alaska Village Electric Cooperative, Inc. Kwig Power Company	Utility Utility	Wind Wind to Heat		1.19	1.47 \$0.				13.00 12.83		.50 5.0 00 2.0				\$4,782,528 \$302,737	\$4,274,575 \$293,737		Construction Construction	FULL SP FULL SP	\$4,274,575 \$293,737	\$28,582, <sup>2</sup> \$28,875,9
33 H Northwest Arctic		Kotzebue Paper and Wood Waste to Energy Project	City of Kotzebue	Local Government	Biomass	62.83				07 26.56		) 12.57		.00 2.0		0 62.13		\$2,692,700	\$2,495,189	. ,	DesignConstruction		Y \$270,000	
34 S Aleutians	-	Waterfall Creek Hydroelectric Project	City of King Cove	Local Government	Hydro		1.37					-		.63 5.0				\$5,500,000	\$800,000	. ,	Construction	FULL SP	\$800,000	\$29,945,9
· · · · · · · · · · · · · · · · · · ·		Holy Cross Water System Heat Recovery	City of Holy Cross	Government Entity	Heat Recovery			0.74 \$0.						.25 5.0				\$497,773	\$497,773		DesignConstruction		\$497,773	. , ,
36 S Kodiak		Old Harbor Hydroelectric Project Final Design and Permitting	,	Utility	Hydro			1.79 \$0.					2.00 5.		-			\$8,155,000	\$1,092,500	1. 1.	Design	PARTIAL	\$400,000	( , ,
37 S Southeast		Swan Lake Reservoir Expansion Project Sitka Kettleson Library Air Source Heat Pump	The Southeast Alaska Power Agency	Government Entity				4.07 \$0. 1.87 \$0.					3.00 11.					\$13,391,869	\$4,000,000		DesignConstruction		\$560,488	. , ,
38 H Southeast 39 S Railbelt		Juniper Creek Hydroelectric Reconnaissance Study	City and Borough of Sitka Ram Valley, LLC	Local Government	Heat Pumps Hydro			3.49 \$0.					2.00 11.					\$230,200 \$2,350,000	\$230,200 \$35,750	\$192,891	DesignConstruction	FULL	\$230,200 \$35,750	
40 H Southeast		Craig High School Wood Heat Conversion	Craig City School District	Government Entity	Biomass			1.54 \$0.										\$585,450	\$492,850	. ,	DesignConstructio		Y \$125,000	. , ,
		Eek Water System Heat Recovery	City of Eek	Government Entity	Heat Recovery	70.17	1.01	1.35 \$0.	60 \$3.8	39 17.02	6.00	14.03	5.00 4.	.50 5.0	0 3.8	3 55.39	41	\$297,408	\$288,745	\$8,663	DesignConstruction	FULL	\$288,745	
42 H Southeast		Sitka Sea Water Source Heat Pump Project	City and Borough of Sitka		Heat Pumps			0.52 \$0.										\$388,838	\$373,838		DesignConstruction		Y \$56,841	\$32,140,
43 S Aleutians		False Pass Hydrokinetic Feasibility Study	City of False Pass	Local Government	Hydrokinetic			0.22 \$0.					2.50 0.					\$5,000,000	\$428,646		Feasibility	FULL	\$428,646	. , ,
44 H Lower Yukon-Kuskokwim 45 S Aleutians		Tuntutuliak Wind Heat Electrical Thermal Storage Sand Point Energy Storage Project	TCSA Electrical Services TDX Sand Point Generating, LLC	Utility Utility	Wind to Heat Storage of Renew			0.96 <b>\$</b> 0. 1.01 <b>\$</b> 0.					2.83 2. 3.00 4.1					\$259,817 \$1,397,403	\$250,817 \$1,256,403		Construction DesignConstruction	FULL SP PARTIAL SP	\$250,817 Y \$200,000	\$32,820, \$33,020,
45 S Aleutans 46 H Copper River/Chugach		Wood Chip Boiler for The Native Village of Tazlina	Native Village of Tazlina		Biomass			1.84 \$0.										\$278,150	\$267,150		DesignConstruction		Y \$125,000	
47 S Southeast		SEAPA Wind Resource Assessment Phase I and II	The Southeast Alaska Power Agency		Wind	90.33	1.84	\$0.	10	4.47	7.00	18.07	2.00 13.	13 5.0	0 3.6	7 53.33	47	\$170,583	\$158,771	\$11,812	ReconFeasibility		\$158,771	
48 S Kodiak	1030	Flywheels ESS for Kodiak Pier Electric Crane	Kodiak Electric Association, Inc.	Utility	Storage of Renew	w 66.83	0.51	1.02 \$0.	19	8.32	2 15.00	13.37	3.50 3.	.25 5.0	0 4.0	0 52.44	48	\$3,800,000	\$1,900,000	\$1,900,000	Construction	PARTIAL SP	\$1,470,548	\$34,774,4
49 S Lower Yukon-Kuskokwim	1066	Marshall Wind Energy Final Design and Permitting Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind			1.60 \$0.					2.50 1.					\$3,214,875	\$353,400	\$18,600		FULL SP	\$353,400	. , ,
50 S North Slope	10.10		Injorth Slope Bereugh	Local Government	Transmission			3.55 \$0.					2.50 12. 1.50 11.					\$17,342,837 \$8,340,000	\$2,017,818 \$54,000	\$201,782 \$6,000		FULL SP PARTIAL	\$2,017,818 \$35,000	
		Atqasuk Transmission Line Design and Permitting Project	North Slope Borough		Hydro	61.00	1 0 0	1 89 60						0.0 5.0	0 3.0	J JZ. 14	51	\$0,54U,UUU	<b>\$</b> 54,000	φ <b>0,00</b> 0	INCLUI		\$35,000	
51 S Railbelt	1028	Carlo Creek Hydroelectric Project Reconnaissance Study	Native Village of Cantwell	Government Entity	Hydro Heat Pumps			1.88 \$0. 0.74 \$0.						63 4 0	0 4.5	0 52.02	52	\$825,000	\$660,000				\$660,000	\$37 840
	1028 1007		· · ·	Government Entity Local Government	Hydro Heat Pumps Heat Pumps	49.33	0.86	1.88     \$0.       0.74     \$0.       1.06     \$0.	12 \$4.1	12 18.03	3 11.00	9.87	4.00 0.	.63 4.0 .75 5.0				\$825,000 \$962,984	\$660,000 \$849,984	\$165,000	DesignConstruction	FULL	\$660,000 \$849,984	. , ,
51     S     Railbelt       52     H     Southeast       53     H     Southeast       54     S     Bristol Bay	1028 1007 1012 1079	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council	Government EntityLocal GovernmentLocal GovernmentGovernment Entity	Heat Pumps Heat Pumps Wind	49.33 57.67 52.33	0.86 0.73 1.05	0.74\$0.1.06\$0.1.60\$0.	12 \$4.1 09 \$3.5 51	12 18.03 59 15.71 22.09	<ul> <li>11.00</li> <li>9.00</li> <li>6.00</li> </ul>	9.87 9.11.53 9.10.47	4.000.5.000.3.834.	.75         5.0           .13         2.0	0 4.8 0 3.1	351.83751.68	53 54	\$962,984 \$2,566,000	\$849,984 \$306,000	\$165,000 \$113,000 \$10,000	DesignConstruction DesignConstruction Design	FULL FULL FULL SP	\$849,984 Y \$306,000	\$38,690,6 \$38,996,6
51     S     Railbelt       52     H     Southeast       53     H     Southeast       54     S     Bristol Bay       55     S     Aleutians	1028 1007 1012 1079 1080	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility	Government Entity Local Government Local Government Government Entity Local Government	Heat Pumps Heat Pumps Wind Wind	49.33 57.67 52.33 46.33	0.86 0.73 1.05 0.67	0.74\$0.1.06\$0.1.60\$0.0.61\$0.	12 \$4.1 09 \$3.5 51 51	12 18.03 59 15.71 22.09 22.45	3       11.00         9.00       9.00         9       6.00         5       9.00	9.87       11.53       10.47       9.27	4.000.5.000.3.834.2.500.	.75         5.0           .13         2.0           .38         4.0	0         4.8           0         3.1           0         1.6	351.83751.68749.26	53 54 55	\$962,984 \$2,566,000 \$52,050	\$849,984 \$306,000 \$47,050	\$165,000 \$113,000 \$10,000 \$5,000	DesignConstruction DesignConstruction Design Feasibility	FULL FULL FULL SP FULL SP	\$849,984 Y \$306,000 \$47,050	\$38,690,6 \$38,996,6 \$39,043,7
51     S     Railbelt       52     H     Southeast       53     H     Southeast       54     S     Bristol Bay       55     S     Aleutians       56     H     Railbelt	1028           1007           1012           1079           1080           1009	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District	Government Entity Local Government Local Government Government Entity Local Government Government Entity	Heat Pumps Heat Pumps Wind Wind Biomass	49.33         57.67         52.33         46.33         54.67	0.86 0.73 1.05 0.67 0.66	0.74         \$0.           1.06         \$0.           1.60         \$0.           0.61         \$0.           1.11         \$0.	12       \$4.1         09       \$3.5         51       51         22       \$4.0	12         18.03           59         15.71           22.09         22.45           26         17.76	11.00           9.00           6.00           9.00           9.00           7.00	9.87       11.53       10.47       9.27       10.93	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.	75         5.0           13         2.0           38         4.0           00         5.0	0     4.8       0     3.1       0     1.6       0     4.0	351.83751.68749.26048.69	53 54 55 56	\$962,984 \$2,566,000 \$52,050 \$3,244,225	\$849,984 \$306,000 \$47,050 \$367,965	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800	DesignConstruction DesignConstruction Design Feasibility Design	FULL FULL FULL SP FULL SP FULL	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965	\$38,690,6 \$38,996,6 \$39,043,7 \$39,411,7
51     S     Railbelt       52     H     Southeast       53     H     Southeast       54     S     Bristol Bay       55     S     Aleutians       56     H     Railbelt       57     S     Railbelt	1028           1007           1012           1079           1080           1009           1081	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project Waste to Energy Reconnaissance Study	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District         Chugach Electric Association, Inc.	Government Entity Local Government Government Entity Local Government Government Entity Utility	Heat Pumps Heat Pumps Wind Wind Biomass Biofuel	49.33         57.67         52.33         46.33         54.67         61.50	0.86 0.73 1.05 0.67 0.66 1.31	0.74         \$0.           1.06         \$0.           1.60         \$0.           0.61         \$0.           1.11         \$0.           1.34         \$0.	12         \$4.1           09         \$3.5           51         51           22         \$4.0           15         51	12         18.03           59         15.71           22.09         22.45           06         17.76           6.78	11.00         9.00         6.00         9.00         9.00         7.00         15.00	9.87           11.53           10.47           9.27           10.93           12.30	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.           0.00         8.	75         5.0           13         2.0           38         4.0           00         5.0           25         2.0	0         4.83           0         3.11           0         1.6           0         4.00           0         4.00	3         51.83           7         51.68           7         49.26           0         48.69           0         48.33	53 54 55 56 57	\$962,984 \$2,566,000 \$52,050 \$3,244,225 TBD	\$849,984 \$306,000 \$47,050 \$367,965 \$150,000	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800 \$100,000	DesignConstruction DesignConstruction Design Feasibility Design Recon	FULL FULL SP FULL SP FULL SP FULL PARTIAL	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965           \$50,000	\$38,690,6 \$38,996,6 \$39,043,7 \$39,411,7 \$39,461,7
51     S     Railbelt       52     H     Southeast       53     H     Southeast       54     S     Bristol Bay       55     S     Aleutians       56     H     Railbelt       57     S     Railbelt       58     S     Copper River/Chugach	1028           1007           1012           1079           1080           1009           1081	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project Waste to Energy Reconnaissance Study Cascade Creek Hydroelectric Project Feasibility Study	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District         Chugach Electric Association, Inc.         Blue Hole Properties, LLC (BHP)	Government Entity Local Government Local Government Government Entity Local Government Government Entity Utility IPP	Heat Pumps Heat Pumps Wind Wind Biomass Biofuel Hydro	49.33           57.67           52.33           46.33           54.67           61.50           45.83	0.86           0.73           1.05           0.67           0.66           1.31           1.30	0.74         \$0.           1.06         \$0.           1.60         \$0.           0.61         \$0.           1.11         \$0.           1.34         \$0.	12         \$4.1           09         \$3.5           51         51           22         \$4.0           15         28	12 18.03 59 15.71 22.09 22.45 56 17.76 6.78 12.44	11.00         9.00         6.00         9.00         9.00         7.00         15.00         11.00	9.87           11.53           10.47           9.27           10.93           12.30           9.17	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.           0.00         8.           3.00         6.	75         5.0           13         2.0           38         4.0           00         5.0           25         2.0           38         5.0	0         4.8           0         3.1           0         1.6           0         4.0           0         4.0           0         1.3	3         51.83           7         51.68           7         49.26           0         48.69           0         48.33           3         48.32	53 54 55 56 57 58	\$962,984 \$2,566,000 \$52,050 \$3,244,225 TBD \$2,250,000	\$849,984 \$306,000 \$47,050 \$367,965 \$150,000 \$170,000	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800 \$100,000 \$30,000	DesignConstruction DesignConstruction Design Feasibility Design Recon Feasibility	FULL FULL SP FULL SP FULL PARTIAL FULL	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965           \$50,000           \$170,000	\$38,690, \$38,996, \$39,043, \$39,411, \$39,461, \$39,631,
51     S     Railbelt       52     H     Southeast       53     H     Southeast       54     S     Bristol Bay       55     S     Aleutians       56     H     Railbelt       57     S     Railbelt       58     S     Copper River/Chugach	1028 1007 1012 1079 1080 1009 1081 1075 an 1051	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project Waste to Energy Reconnaissance Study	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District         Chugach Electric Association, Inc.	Government Entity Local Government Local Government Government Entity Local Government Government Entity Utility IPP	Heat Pumps Heat Pumps Wind Wind Biomass Biofuel	49.33           57.67           52.33           46.33           54.67           61.50           45.83           59.83	0.86           0.73           1.05           0.67           0.66           1.31           1.30           0.97	0.74         \$0.           1.06         \$0.           1.60         \$0.           0.61         \$0.           1.11         \$0.           1.34         \$0.	12         \$4.1           09         \$3.5           51         51           22         \$4.0           15         28           49         \$3.7	12         18.03           59         15.71           22.09         22.45           06         17.76           6.78         12.44           79         16.58	11.00         9.00         6.00         9.00         7.00         15.00         11.00         6.00	9.87       11.53       10.47       9.27       10.93       12.30       9.17       1.97	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.           0.00         8.           3.00         6.           4.00         3.	75         5.0           13         2.0           38         4.0           00         5.0           25         2.0           38         5.0           38         5.0	0     4.8       0     3.1       0     1.6       0     4.0       0     4.0       0     1.3       0     4.0       0     4.0	3         51.83           7         51.68           7         49.26           0         48.69           0         48.33           3         48.32           0         47.92	53 54 55 56 57 58 58 59	\$962,984 \$2,566,000 \$52,050 \$3,244,225 TBD	\$849,984 \$306,000 \$47,050 \$367,965 \$150,000	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800 \$100,000 \$30,000 \$4,000	DesignConstruction DesignConstruction Design Feasibility Design Recon	FULL FULL SP FULL SP FULL SP FULL PARTIAL FULL FULL	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965           \$50,000	\$38,690,6 \$38,996,6 \$39,043,7 \$39,461,7 \$39,461,7 \$39,631,7 \$40,256,7
51     S     Railbelt       52     H     Southeast       53     H     Southeast       54     S     Bristol Bay       55     S     Aleutians       56     H     Railbelt       57     S     Railbelt       58     S     Copper River/Chugach       59     H     Yukon-Koyukok/Upper Ta	1028           1007           1012           1079           1080           1009           1081           1075           an 1051           1078           1001	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project Waste to Energy Reconnaissance Study Cascade Creek Hydroelectric Project Feasibility Study AGSD Extension of Heating Loop Chickaloon Solar Thermal and Biomass Project Northwest Arctic Borough Solar PV Project	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District         Chugach Electric Association, Inc.         Blue Hole Properties, LLC (BHP)         Alaska Gateway School District	Government Entity Local Government Government Entity Local Government Government Entity Utility IPP Government Entity Government Entity	Heat Pumps Heat Pumps Wind Biomass Biofuel Hydro Heat Recovery	49.33         57.67         52.33         46.33         54.67         61.50         45.83         59.83         43.67         46.00	0.86           0.73           1.05           0.67           0.66           1.31           1.30           0.97           0.74           0.68	0.74         \$0.           1.06         \$0.           1.60         \$0.           0.61         \$0.           1.11         \$0.           1.34         \$0.           3.46         \$0.           1.45         \$0.           0.79         \$0.33	12         \$4.1           09         \$3.5           51         51           52         \$4.0           15         22           49         \$3.7           15         \$3.7           15         \$3.7           42         \$4.2	12         18.03           59         15.71           22.09         22.45           26         17.76           6.78         12.44           79         16.58           71         16.23           18.27	3         11.00           9.00         6.00           6         9.00           7         7.00           7         15.00           11.00         6.00           11.00         11.00           11.00         6.00           11.00         6.00	9.87           11.53           10.47           9.27           10.93           12.30           9.17           9.17           11.53           11.97           9.20	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.           0.00         8.           3.00         6.           4.00         3.           3.00         0.           4.50         0.	75         5.0           13         2.0           38         4.00           00         5.0           25         2.0           38         5.0           38         5.0           38         2.0           38         2.0           38         2.0           38         2.0           38         2.0           38         3.0	0         4.8           0         3.1           0         1.6           0         4.0           0         4.0           0         4.0           0         4.0           0         4.0           0         4.0           0         4.0           0         4.0           0         4.0           0         4.1           0         4.5	3         51.83           7         51.68           7         49.26           0         48.69           0         48.33           3         48.32           0         47.92           7         45.88           0         45.85	53           54           55           56           57           58           59           60           61	\$962,984 \$2,566,000 \$52,050 \$3,244,225 TBD \$2,250,000 \$629,000	\$849,984 \$306,000 \$47,050 \$367,965 \$150,000 \$170,000 \$625,000	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800 \$100,000 \$30,000 \$4,000 \$25,802	DesignConstruction Design Feasibility Design Recon Feasibility DesignConstruction DesignConstruction	FULL FULL SP FULL SP FULL SP FULL PARTIAL FULL FULL	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965           \$50,000           \$170,000           \$625,000	\$38,690,6 \$38,996,6 \$39,043,7 \$39,411,1 \$39,461,1 \$39,631,7 \$40,256,7 \$40,256,7 \$40,353,7
51       S       Railbelt         52       H       Southeast         53       H       Southeast         54       S       Bristol Bay         55       S       Aleutians         56       H       Railbelt         57       S       Railbelt         58       Copper River/Chugach         59       H       Yukon-Koyukok/Upper Ta         60       H       Railbelt         61       S       Northwest Arctic         62       H       Railbelt	1028           1007           1012           1079           1080           1009           1081           1075           ar           1075           1007           1009           1081           1075           ar           1001           1055	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project Waste to Energy Reconnaissance Study Cascade Creek Hydroelectric Project Feasibility Study AGSD Extension of Heating Loop Chickaloon Solar Thermal and Biomass Project Northwest Arctic Borough Solar PV Project Alaska SeaLife Center Heat Recovery Project	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District         Chugach Electric Association, Inc.         Blue Hole Properties, LLC (BHP)         Alaska Gateway School District         Chickaloon Native Village         Northwest Arctic Borough         City of Seward	Government Entity Local Government Government Entity Local Government Government Entity Utility IPP Government Entity Government Entity Local Government Local Government	Heat Pumps Heat Pumps Wind Wind Biomass Biofuel Hydro Heat Recovery Biomass Solar PV Heat Recovery	49.33           57.67           52.33           46.33           54.67           61.50           45.83           59.83           43.67           46.00           57.67	0.86           0.73           1.05           0.67           0.66           1.31           1.30           0.97           0.74           0.68           1.13	0.74         \$0.           1.06         \$0.           1.60         \$0.           1.61         \$0.           1.11         \$0.           1.34         \$0.           3.46         \$0.           1.45         \$0.           0.79         \$0.           0.83         \$0.	12         \$4.1           09         \$3.5           51         51           22         \$4.0           15         28           49         \$3.7           15         \$3.7           42         11	12         18.03           59         15.71           22.09         22.45           20         17.76           6.78         12.44           79         16.58           71         16.23           18.27         4.59	3       11.00         9.00       6.00         6       9.00         6       9.00         6       9.00         10       15.00         11.00       11.00         11.00       6.00         9.00       9.00	9.87           9.87           11.53           10.47           9.27           10.93           12.30           9.17           11.97           8.73           9.20           11.53	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.           0.00         8.           3.00         6.           4.00         3.           3.00         0.           4.50         0.	75         5.00           13         2.00           38         4.00           00         5.00           25         2.00           38         5.00           38         2.00           38         2.00           38         2.00           38         3.00           88         5.00	0         4.8           0         3.1           0         1.6           0         4.00           0         4.00           0         4.00           0         4.00           0         4.01           0         4.02           0         4.03           0         4.04           0         4.02           0         4.01           0         4.02           0         5.02	3         51.83           7         51.68           7         49.26           0         48.69           0         48.33           3         48.32           0         47.92           7         45.88           0         45.85           0         44.50	53           54           55           56           57           58           59           60           61           62	\$962,984 \$2,566,000 \$52,050 \$3,244,225 TBD \$2,250,000 \$629,000 \$152,867 \$77,000 \$250,000	\$849,984 \$306,000 \$47,050 \$367,965 \$150,000 \$170,000 \$625,000 \$127,065 \$76,000 \$225,000	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800 \$100,000 \$30,000 \$4,000 \$25,802 \$1,000 \$25,000	DesignConstruction DesignConstruction Design Feasibility Design Recon Feasibility DesignConstruction Construction Construction	FULL FULL SP FULL SP FULL SP FULL PARTIAL FULL FULL FULL FULL SP FULL	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965           \$50,000           \$170,000           \$625,000           \$97,000           \$75,000           \$225,000	\$38,690,( \$38,996,( \$39,043,] \$39,411,( \$39,461,] \$39,461,] \$39,631,] \$40,256,, \$40,256,, \$40,353,] \$40,428,] \$40,653,]
51       S       Railbelt         52       H       Southeast         53       H       Southeast         54       S       Bristol Bay         55       S       Aleutians         56       H       Railbelt         57       S       Railbelt         58       S       Copper River/Chugach         59       H       Yukon-Koyukok/Upper Ta         60       H       Railbelt         61       S       Northwest Arctic         62       H       Railbelt         63       S       Bristol Bay	1028           1007           1012           1079           1080           1009           1081           1075           1075           1001           1055           1018	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project Waste to Energy Reconnaissance Study Cascade Creek Hydroelectric Project Feasibility Study AGSD Extension of Heating Loop Chickaloon Solar Thermal and Biomass Project Northwest Arctic Borough Solar PV Project Alaska SeaLife Center Heat Recovery Project Chignik Hydroelectric Project Design and Permitting	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District         Chugach Electric Association, Inc.         Blue Hole Properties, LLC (BHP)         Alaska Gateway School District         Chickaloon Native Village         Northwest Arctic Borough         City of Seward         City of Chignik	Government Entity Local Government Government Entity Local Government Government Entity Utility IPP Government Entity Government Entity Local Government Local Government	Heat Pumps Heat Pumps Wind Biomass Biofuel Hydro Heat Recovery Biomass Solar PV Heat Recovery Hydro	49.33           57.67           52.33           46.33           54.67           61.50           45.83           59.83           43.67           46.00           57.67           52.17	0.86           0.73           1.05           0.67           0.66           1.31           1.30           0.97           0.74           0.68           1.13           1.02	0.74         \$0.           1.06         \$0.           1.60         \$0.           0.61         \$0.           1.11         \$0.           1.34         \$0.           3.46         \$0.           1.45         \$0.           0.79         \$0.           0.83         \$0.           4.41         \$0.	12         \$4.1           09         \$3.5           51         51           22         \$4.0           15         28           49         \$3.7           15         \$3.7           42         11           48         \$3.6	12         18.03           59         15.71           22.09         22.45           26         17.76           6.78         12.44           79         16.58           71         16.23           18.27         4.59           20.81         20.81	11.00           9.00           6.00           9.00           7.00           15.00           11.00           11.00           6.00           11.00           6.00           9.00           0.00           9.00           0.00	9.87           11.53           11.53           10.47           9.27           10.93           10.30           12.30           9.17           11.97           8.73           9.20           11.53           10.43	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.           0.00         8.           3.00         6.           4.00         3.           3.00         0.           4.50         0.           4.50         4.           3.50         4.	75         5.0           13         2.0           38         4.00           00         5.00           25         2.00           38         5.00           38         2.00           38         2.00           38         2.00           38         3.00           88         5.00	0         4.8           0         3.1           0         1.6           0         4.00           0         4.00           0         4.00           0         4.00           0         4.00           0         4.00           0         4.00           0         4.11           0         4.50           0         5.00           0         4.00	3         51.83           7         51.68           7         49.26           0         48.69           0         48.33           3         48.32           0         47.92           7         45.88           0         45.85           0         44.50	53           54           55           56           57           58           59           60           61           62           63	\$962,984 \$2,566,000 \$52,050 \$3,244,225 TBD \$2,250,000 \$629,000 \$152,867 \$77,000 \$250,000 BLANK	\$849,984 \$306,000 \$47,050 \$367,965 \$150,000 \$170,000 \$625,000 \$127,065 \$76,000 \$225,000 \$1,375,000	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800 \$100,000 \$30,000 \$4,000 \$25,802 \$1,000 \$25,000 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	DesignConstruction Design Feasibility Design Recon Feasibility DesignConstruction Construction Construction Design	FULL FULL SP FULL SP FULL SP FULL PARTIAL FULL FULL FULL SP FULL PARTIAL SP	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965           \$50,000           \$170,000           \$625,000           \$97,000           \$75,000           \$225,000           \$500,000	\$38,690,6 \$38,996,6 \$39,043, \$39,043, \$39,441, \$39,461, \$39,631, \$40,256, \$40,353, \$40,428, \$40,428, \$40,653, \$41,153,
51       S       Railbelt         52       H       Southeast         53       H       Southeast         54       S       Bristol Bay         55       S       Aleutians         56       H       Railbelt         57       S       Railbelt         58       S       Copper River/Chugach         59       H       Yukon-Koyukok/Upper Ta         60       H       Railbelt         61       S       Northwest Arctic         62       H       Railbelt	1028           1007           1012           1079           1080           1009           1081           1075           1051           1078           1001           1055           1018	Carlo Creek Hydroelectric Project Reconnaissance Study Mendenhall Valley Library Geothermal HVAC System Sitka Wastewater Treatment Plant Effluent Heat Pump Koliganek Wind Diesel and Heat Recovery False Pass Wind Energy Project Nenana Collaborative Biomass Heating System Project Waste to Energy Reconnaissance Study Cascade Creek Hydroelectric Project Feasibility Study AGSD Extension of Heating Loop Chickaloon Solar Thermal and Biomass Project Northwest Arctic Borough Solar PV Project Alaska SeaLife Center Heat Recovery Project Chignik Hydroelectric Project Design and Permitting Kaktovik Wind Diesel Design and Permitting	Native Village of Cantwell         City & Borough of Juneau         City and Borough of Sitka         New Koliganek Village Council         City of False Pass Electric Utility         Nenana School District         Chugach Electric Association, Inc.         Blue Hole Properties, LLC (BHP)         Alaska Gateway School District         Chickaloon Native Village         Northwest Arctic Borough         City of Seward	Government Entity Local Government Government Entity Local Government Government Entity Utility IPP Government Entity Government Entity Local Government Local Government	Heat Pumps Heat Pumps Wind Biomass Biofuel Hydro Heat Recovery Biomass Solar PV Heat Recovery Hydro	49.33           57.67           52.33           46.33           54.67           61.50           45.83           59.83           43.67           46.00           57.67           52.17	0.86           0.73           1.05           0.67           0.66           1.31           1.30           0.97           0.74           0.68           1.13           1.02	0.74         \$0.           1.06         \$0.           1.60         \$0.           1.61         \$0.           1.11         \$0.           1.34         \$0.           3.46         \$0.           1.45         \$0.           0.79         \$0.           0.83         \$0.	12         \$4.1           09         \$3.5           51         51           22         \$4.0           15         28           49         \$3.7           15         \$3.7           42         11           48         \$3.6	12         18.03           59         15.71           22.09         22.45           26         17.76           6.78         12.44           79         16.58           71         16.23           18.27         4.59           20.81         20.81	11.00           9.00           6.00           9.00           7.00           15.00           11.00           11.00           6.00           11.00           6.00           9.00           0.00           9.00           0.00	9.87           11.53           11.53           10.47           9.27           10.93           10.30           12.30           9.17           11.97           8.73           9.20           11.53           10.43	4.00         0.           5.00         0.           3.83         4.           2.50         0.           3.00         1.           0.00         8.           3.00         6.           4.00         3.           3.00         0.           4.50         0.	75         5.0           13         2.0           38         4.00           00         5.00           25         2.00           38         5.00           38         2.00           38         2.00           38         2.00           38         3.00           88         5.00	0         4.8           0         3.1           0         1.6           0         4.00           0         4.00           0         4.00           0         4.00           0         4.00           0         4.00           0         4.00           0         4.11           0         4.50           0         5.00           0         4.00	3         51.83           7         51.68           7         49.26           0         48.69           0         48.33           3         48.32           0         47.92           7         45.88           0         45.85           0         44.50	53           54           55           56           57           58           59           60           61           62           63	\$962,984 \$2,566,000 \$52,050 \$3,244,225 TBD \$2,250,000 \$629,000 \$152,867 \$77,000 \$250,000	\$849,984 \$306,000 \$47,050 \$367,965 \$150,000 \$170,000 \$625,000 \$127,065 \$76,000 \$225,000 \$1,375,000 \$440,000	\$165,000 \$113,000 \$10,000 \$5,000 \$25,800 \$100,000 \$30,000 \$4,000 \$25,802 \$1,000 \$25,000	DesignConstruction DesignConstruction Design Feasibility Design Recon Feasibility DesignConstruction Construction Construction Design Design	FULL FULL SP FULL SP FULL SP FULL PARTIAL FULL FULL FULL FULL SP FULL	\$849,984           Y         \$306,000           \$47,050           Y         \$367,965           \$50,000           \$170,000           \$625,000           \$97,000           \$75,000           \$225,000	\$38,690, \$38,996, \$39,043, \$39,411, \$39,461, \$39,631, \$40,256, \$40,353, \$40,428, \$40,428, \$40,653, \$41,153, \$41,593,

### RENEWABLE ENERGY FUND STATUS REPORT - JANUARY 2014