02/12/2014 CAPITAL REQUESTS FY 15: ALASKA ENERGY AUTHORITY

<TARGET><BILL></BILL><SUBJECT>02-12-2014 CAPITAL REQUESTS FY 15 ALASKA ENERGY AUTHORITY</SUBJECT><COMM>SFIN28</COMM></TARGET>

Renewable Energy Fund
Status Report and Recommendations

Senate Finance Committee

Feb. 12, 2014

St. Paul Island Wind

ALASKA ENERGY AUTHORITY

Renewable Energy Grant Fund

- Diversifies Alaska's energy portfolio and supports State renewable goals
- Displaces volatile-priced fossil fuels
- Provides a vetting mechanism for energy projects
- Capitalizes on local energy resources
- Expands Alaska's renewable energy knowledge base
- Provides local employment
- Benefits businesses not eligible for PCE

Coffman Cove School Garn boiler.

Photo courtesy of Karen Petersen

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Grant and Funding Summary as of 02/06/14

	Round I	Round II	Round III	Round IV	Round V	Round VI	Totals
Applications Received	115	118	123	108	97	85	646
Applications Funded	80	30	25	74	19	23	251
Grants Currently in Place	26	10	13	51	17	16	134
Grants Completed and Closed	49	18	7	12	1	0	86
Grants Cancelled or Combined	5	2	4	1	0	0	12
Grants Unissued to Date[1]	0	0	1	10	1	7	29
Amount Requested[2] ($M)	$ 453.8	$ 293.4	$ 223.5	$ 123.1	$ 132.9	$ 122.6	$ 1,349.3
AEA Recommended ($M)	$ 100.0	$ 36.8	$ 65.8	$ 36.6	$ 43.2	$ 56.8	$ 339.2
Appropriated ($M)	$ 100.0	$ 25.0	$ 25.0	$ 26.6[5]	$ 25.9	$ 25.0	$ 227.5
Cash Disbursed ($M)	$ 72.3	$ 19.2	$ 14.0	$ 18.3	$ 8.2	$ .3	$ 132.3
Match Provided ($M)[3]	$ 20.7	$ 22.6	$ 10.5	$ 34.6	$ 8.2	$ 6.0	$ 102.6
Other Known Funding ($M)[3, 4]	$ 9.2	$ 1.6	$ 0.8	$ 14.5	$ 0	$ 0	$ 26.1

1. 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.
2. Total grant amount requested by all applicants.
3. These totals are for awarded grants only.
4. Represents only amounts recorded in the grant document and does not capture all other funding.
5. $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.

Renewable Energy Fund Projects, Rounds I - VI

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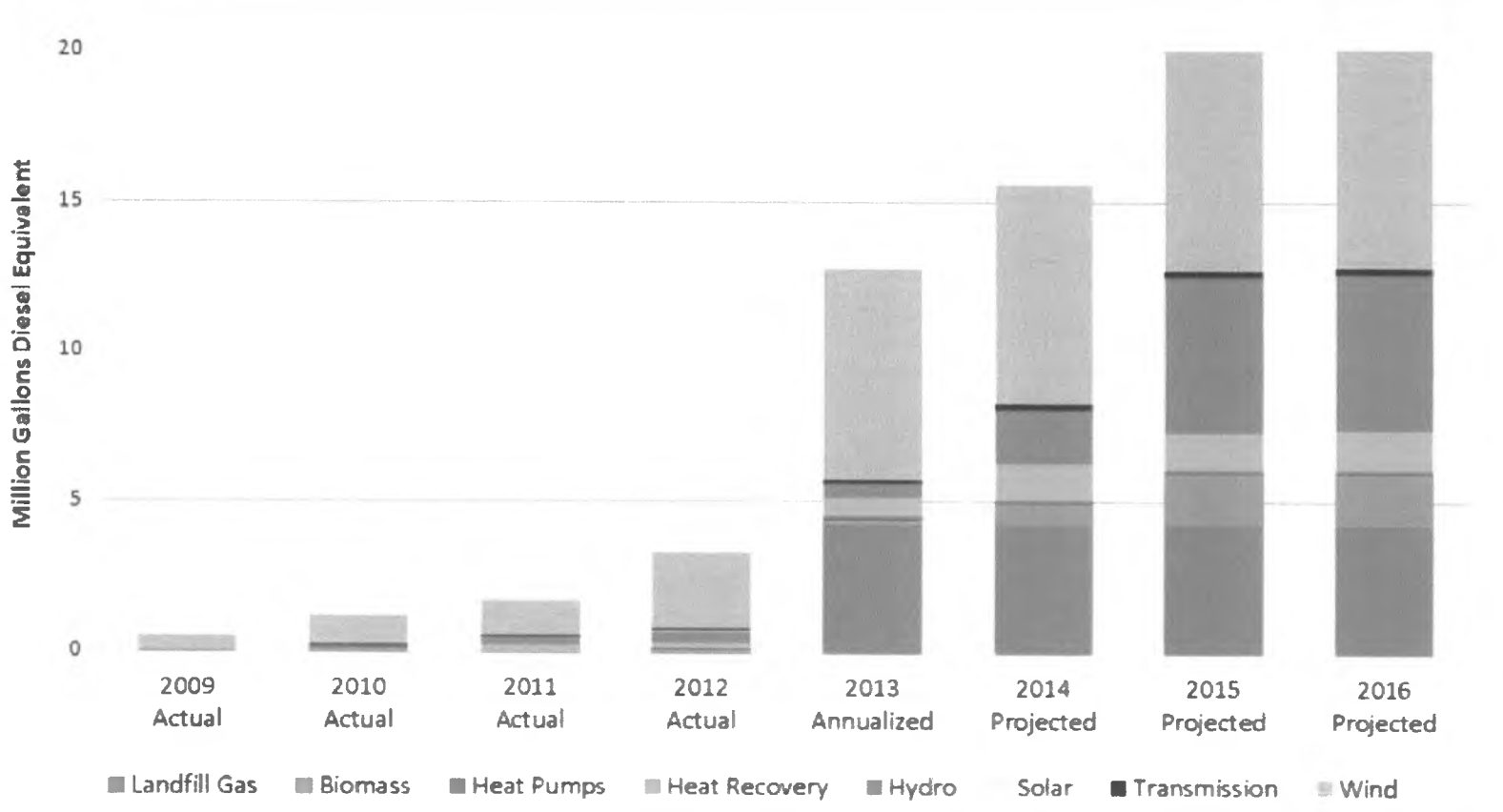
Statewide Impacts

Renewable Energy Fund: Annual Fuel Savings



Renewable Energy Fund: Project Performance

Performance of Renewable Energy Fund Projects in Operation

Technology Type	Grantee	Project Name	Operation Start Date	2011 Energy Production Electrical (MWh)	2011 Energy Production Thermal (MMBtu)	2011 Fuel Displaced Diesel (Gals/1000)	2011 Fuel Displaced Value ($ x 1000)	2012 Energy Production Electrical (MWh)	2012 Energy Production Thermal (MMBtu)	2012 Fuel Displaced Diesel (Gals/1000)	2012 Fuel Displaced Value ($ x 1000)	Jan - Sep. 2013 Energy Production Electrical (MWh)	Jan - Sep. 2013 Energy Production Thermal (MMBtu)	Jan - Sep. 2013 Fuel Displaced Diesel (Gals/1000)	Jan - Sep. 2013 Fuel Displaced Value ($ x 1000)	Cumulative Total (2009-Sep.2013) Energy Production Electrical (MWh)	Cumulative Total (2009-Sep.2013) Energy Production Thermal (MMBtu)	Cumulative Total (2009-Sep.2013) Fuel Displaced Diesel (Gals/1000)	Cumulative Total (2009-Sep.2013) Fuel Displaced Value ($ x 1000)
LANDFILL GAS	Municipality of Anchorage	Anchorage Landfill Gas Electricity	2012 Aug	-	-	-	$ -	-	-	-	$ -								
HYDRO	City of Alka	Skumsaw Creek Hydroelectric	2012 Dec	-	-	-	$ -	-	-	-	$ -								
HYDRO	Cordova Electric Cooperative	Humpback Creek Hydroelectric Project Rehabilitation	2011 Jul	1,563	-	114.9	$ 410.3	3,510	-	270.0	$ 1,060.5								
HYDRO	Gustavus Electric Company	Falls Creek Hydroelectric Construction	2009 Jul	1,933	-	138.1	$ 483.3	1,966	-	150.4	$ 496.3								
SOLAR	Alaska Village Electric Cooperative	Kaltag Solar Construction	2012 Oct	-	-	-	$ -	-	-	-	$ -								
TRANSMISSION	Alaska Power and Telephone	North Prince of Wales Island Intertie Project	2011 Sep	311	-	16.4	$ 67.0	589	-	44.3	$ 161.7								
TRANSMISSION	Nome Joint Utility System	Nome Banner Peak Wind Farm Transmission	2010 Oct	955	-	53.8	$ 151.6	996	-	61.2	$ 193.5								
WIND	Alaska Environmental Power	Delta Area Wind Turbines	2010 Sep	1,341	-	95.9	$ 256.1	989	-	63.9	$ 132.5								
WIND	Alaska Village Electric Cooperative	Toksook Wind Farm	2009 Aug	560	-	37.7	$ 128.1	131	-	9.6	$ 38.4								
WIND	Alaska Village Electric Cooperative	Mekoryuk Wind Farm	2010 Nov	239	-	13.7	$ 49.5	147	-	10.4	$ 41.1								
WIND	Alaska Village Electric Cooperative	Quinhagak Wind Farm	2010 Nov	409	-	28.9	$ 105.6	500	-	38.1	$ 161.4								
WIND	Alaska Village Electric Cooperative	Emmonak/Alakanuk Wind	2011 Sep	63	-	4.5	$ 17.7	506	-	35.8	$ 142.0								
WIND	Alaska Village Electric Cooperative	Shaktoolik Wind Construction	2012 Apr	-	-	-	$ -	116	-	8.9	$ 36.7								
WIND	Golden Valley Electric Association	GVEA Eva Creek Wind Turbine Purchase	2012 Oct	-	-	-	$ -	13,091	-	921.9	$ 1,972.9								
WIND	Kodiak Electric Association, Inc	Pillar Mountain Wind Project	2010 Sep	12,448	-	870.7	$ 2,873.3	16,201	-	1,140.9	$ 4,211.8								
WIND	Kotzebue Electric Association	Kotzebue High Penetration Wind-Battery-Diesel Hybrid	2012 May	-	-	-	$ -	2,177	-	143.1	$ 549.9								
WIND	Nome Joint Utility System	Nome Peak Wind Farm Expansion	2013 Jul	-	-	-	$ -	-	-	-	$ -								
Sub Total Electric Only				20,122	-	1,375	$ 4,543.5	40,908		2,904	$ 9,337.1	33,834	-	3,224.0	$ 1,602.0				
WIND	Aleutian Wind Energy	Sand Point Wind	2011 Aug	196	-	14.3	$ 64.9	792	-	58.1	$ 266.2	9	-	0.6	$ 2.3				
WIND	Inuglingot Power Company	Inuglingot High Penetration Wind-Diesel Smart Grid	2012 Feb	-	-	-	$ -	-	-	-	$ -	644	-	48.4	$ 175.0				
WIND	Puvurnaq Power Company	Kongiganak High Penetration Wind-Diesel Smart Grid	2010 Dec	88	-	6.6	$ 30.1	185	-	14.0	$ 62.4	700	-	43.1	$ 138.2				
WIND	Tuntutuliak Comm Svcs Assoc	Tuntutuliak High Penetration Wind-Diesel Smart Grid	2013 Jan	-	-	-	$ -	-	-	-	$ -	210	-	13.6	$ 36.4				
WIND	Unalakleet Valley Electric Co	Unalakleet Wind Farm	2009 Dec	958	-	58.2	$ 211.2	339	-	67.8	$ 247.6	96	-	7.0	$ 26.1				
Sub Total Electric and Heat				1,242	-	79	$ 306.2	1,316	-	144	$ 577.2	123	-	8.7	$ 32.5				
BIOMASS	Alaska Gateway School District	Tok Wood Heating	2010 Oct	-	3,217	24.4	$ 92.0	-	4,595	44.0	$ 147.0	391	-	29.8	$ 116.7				
BIOMASS	Chalkyitsik Indian Association	Haines Chalkyitsik Central Wood Heating System Construction	2011 Oct	-	-	-	$ -	-	212	1.7	$ 6.8								
BIOMASS	Delta/Greely School District	Delta Junction Wood Chip Heating	2011 Sep	-	-	-	$ -	-	3,977	382	$ 133.5								
BIOMASS	Gulkana Village Council	Gulkana Central Wood Heating	2010 Oct	-	780	5.9	$ 23.5	-	780	7.0	$ 29.9								
BIOMASS	Native Village of Eyak	Cordova Wood Processing Plant	2011 Dec	-	1,500	11.4	$ 42.0	-	600	5.4	$ 25.2								
HEAT PUMPS	City and Borough of Juneau	Juneau Airport Ground Source Heat Pump	2011 May	-	5,117	37.1	$ 130.5	-	5,400	46.0	$ 159.0								
HEAT PUMPS	City and Borough of Juneau	Juneau Aquatic Ctr. Ground Source Heat Pump	2011 Apr	-	-	-	$ -	-	1,740	16.7	$ 61.4								
HEAT PUMPS	City of Seward	Alaska Sealife Center Ph II Seawater Heat Pump Project	2011 Nov	-	-	-	$ -	-	-	-	$ -	-	2,892	27.8	$ 106.2	-	2,892	27.8	$ 106.2
HEAT RECOVERY	Golden Valley Electric Association	North Pole Heat Recovery	2009 Nov	-	5,249	61.5	$ 171.5	-	3,349	32.8	$ 90.6	-	-	-	$ -	-	9,595	106.0	$ 285.2
HEAT RECOVERY	Inside Passage Electric Cooperative	Hoonah Heat Recovery Project	2012 Aug	-	-	-	$ -	-	-	-	$ -	-	4,119	36.7	$ 178.7	-	4,119	36.7	$ 178.7
HEAT RECOVERY	McGrath Light & Power Company	McGrath Heat Recovery	2010 May	-	2,896	23.0	$ 136.7	-	2,617	25.2	$ 97.1	-	1,691	16.2	$ 120.1	-	8,266	76.6	$ 419.5
HEAT RECOVERY	City and Borough of Wrangell	Wrangell Hydro Based Electric Boilers	2011 Feb	-	6,889	60.0	$ 230.3	-	7,711	73.4	$ 134.5	-	4,998	51.5	$ 82.6	-	19,597	196.9	$ 447.4
SOLAR	Golden Valley Electric Association	McKinley Village Solar Thermal	2010 Jun	-	134	1.8	$ 7.1	-	130	1.9	$ 7.6	-	108	0.8	$ 6.8	-	433	5.0	$ 23.0
Sub Total Heat Only				-	25,782	231	$ 853.6	-	31,111	297	$ 881.7	-	33,036	312	$ 1,171.8	-	94,636	890	$ 3,077.5
TOTAL				21,364	25,782	1,684.9	$ 5,703.3	42,021	31,111	3,341.0	$ 10,806.1	114,384	71,126	9,571.1	$ 21,646.6	202,605	95,596	15,972.7	$ 41,681.1
									2013 Estimated Annualized Total			152,512	94,835	12,761.5	$ 28,862.1				

Note: 9 months only for 2013

Jan - Sep. 2013

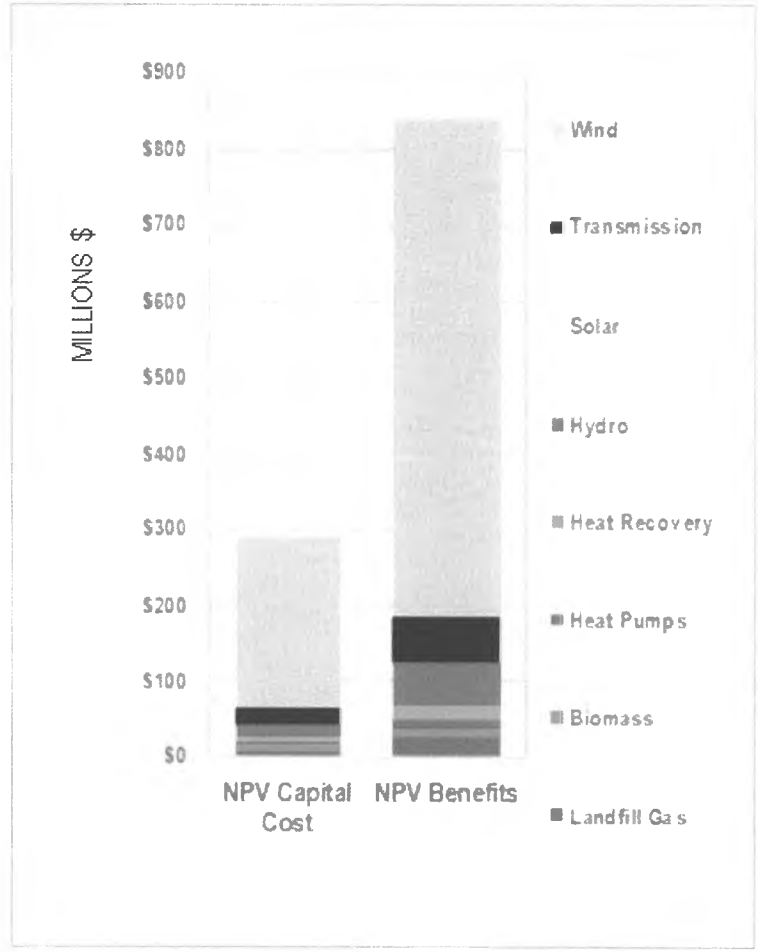
Energy Production		Fuel Displaced	
Electrical (MWh)	Thermal (MMBtu)	Diesel (Gals/1000)	Value ($ x 1000)
33,834	-	3,224.0	$ 1,602.0
285	-	21.9	$ 118.4
2,933	-	225.6	$ 809.6
1,490	-	114.6	$ 481.1
9	-	0.6	$ 2.3
644	-	48.4	$ 175.0
700	-	43.1	$ 138.2
210	-	13.6	$ 36.4
96	-	7.0	$ 26.1
123	-	8.7	$ 32.5
391	-	29.8	$ 116.7

Renewable Energy Fund: Value Generated

- For first 36 projects in operation
- Fund Investment of $82M
- Total NPV cost of $290M
- NPV Benefits: $840M

NPV Benefits/ NPV Costs

2.9



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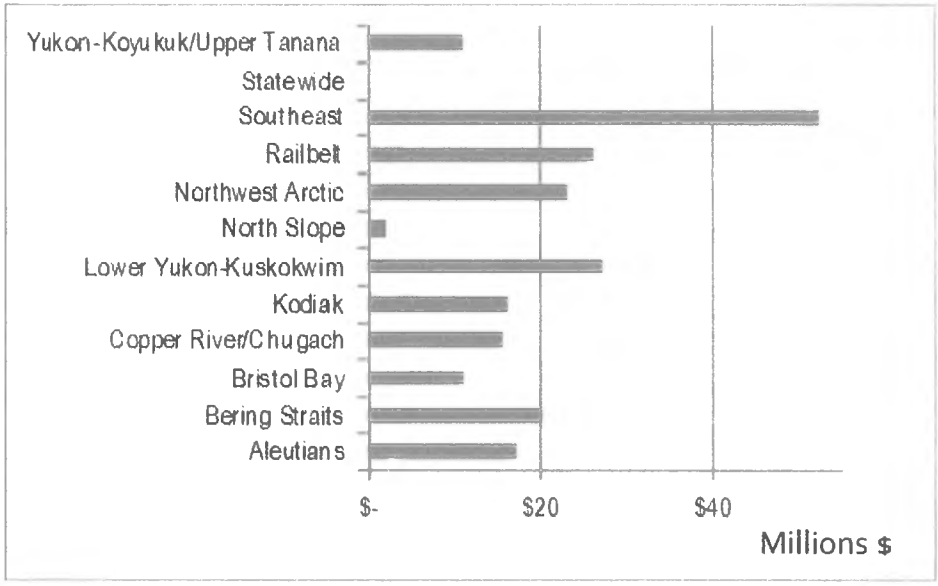
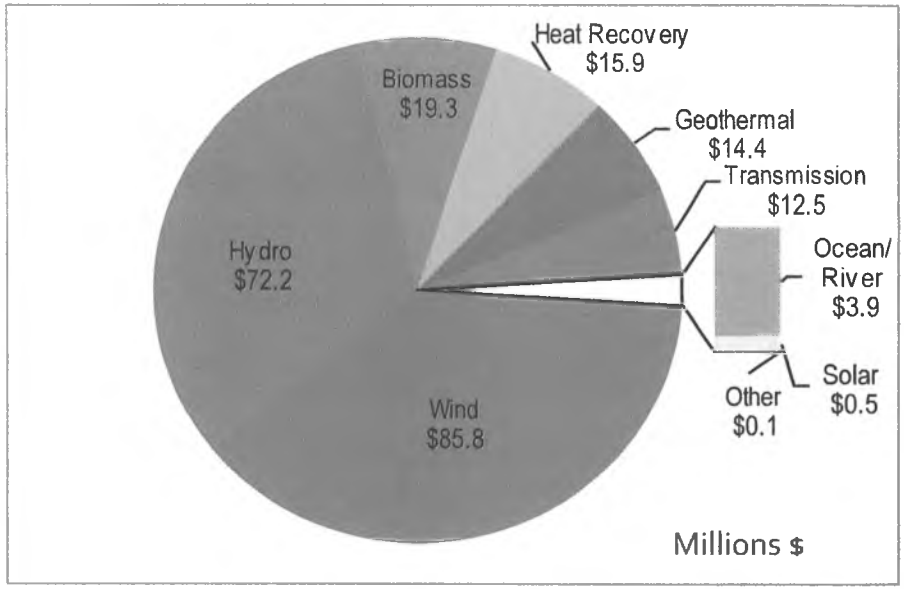
Appropriated Renewable Energy Fund Grants Rounds I-VI

By Energy Region



By Resource Type



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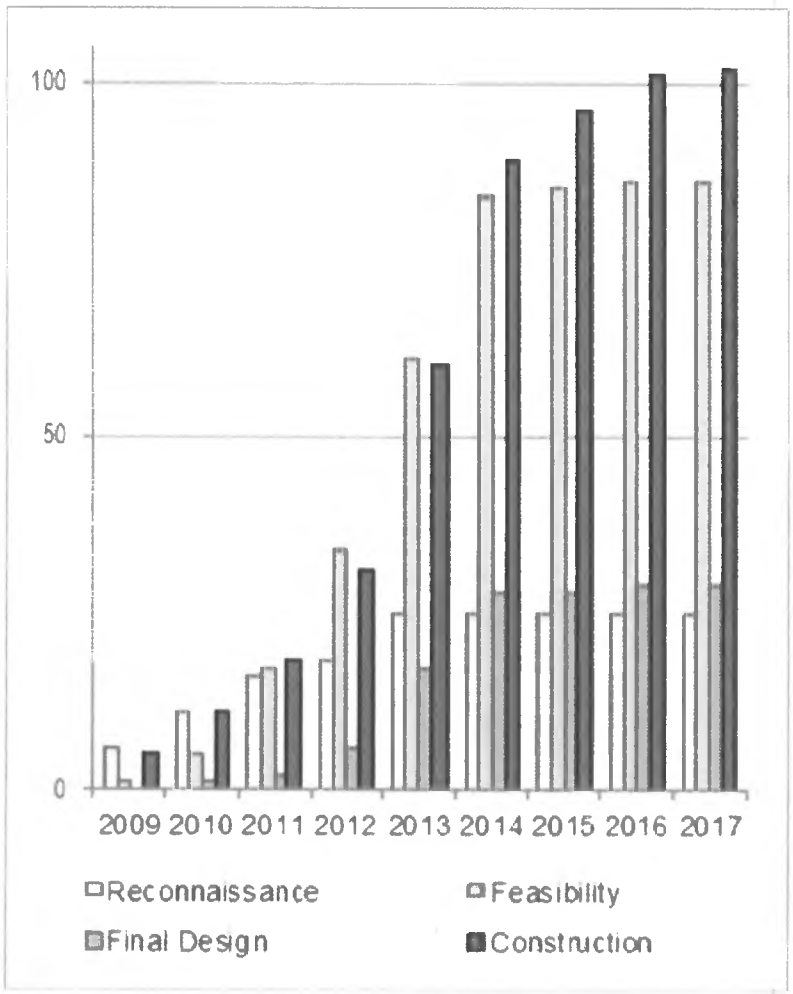
Scheduled Grant Completion

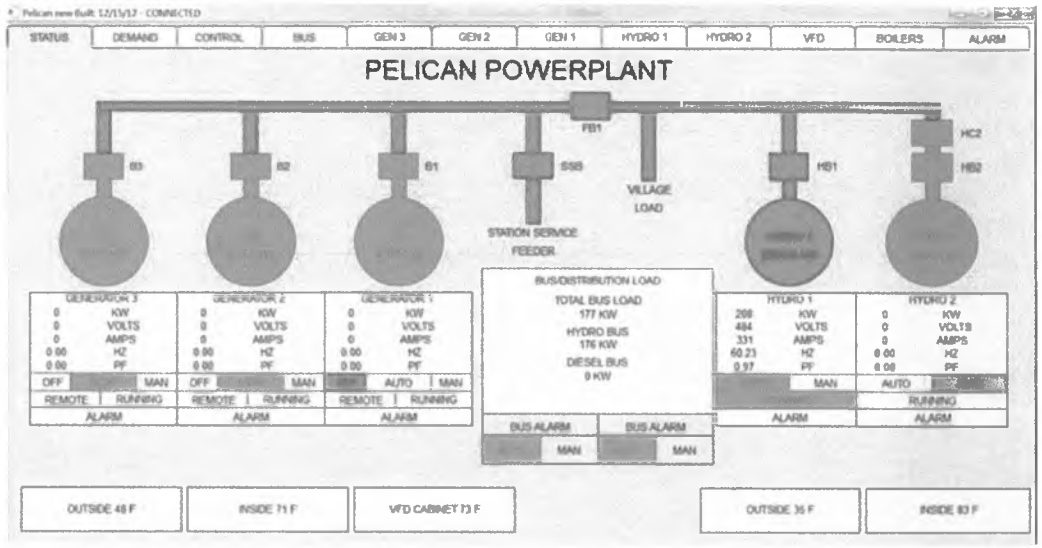


Grant Completion Schedule

- Grants issued in phases to ensure quality projects
- This year, completed construction grants will exceed completed feasibility grants
- Large increases in completed construction

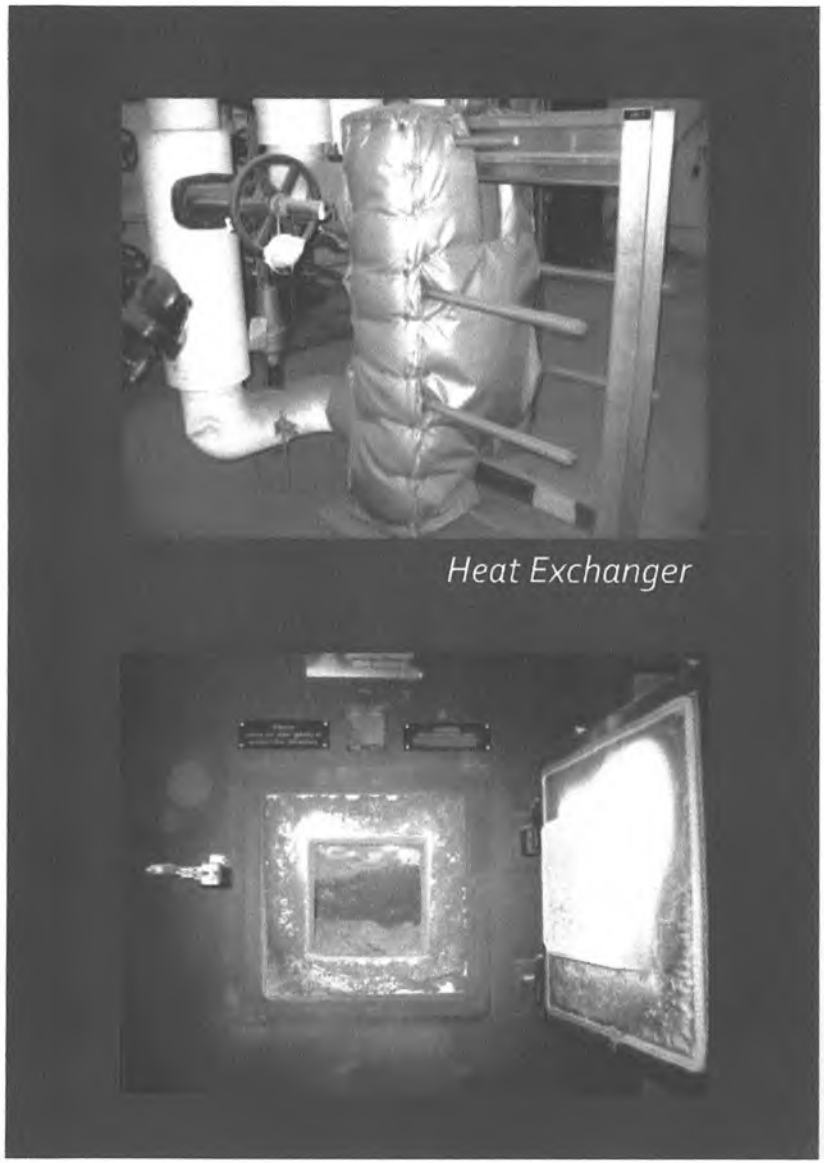
Project Highlight: Pelican Hydro

- REF Funding: $1.95 million
- Total Cost: $5.8 million
- 948,522 kWh/year
- 70,000 gallons of diesel saved
- $312,000 savings first year



Pelican Hydro, Before, During and After

- Wood stave and blue tarp penstock before
- Aerial view of site during construction
- AEA project manager with new surge tank



Heat Exchanger

Community Highlight: Delta Junction

Delta Junction School Biomass

- Completed in September 2011
- High-efficiency, low-emissions wood chip biomass heating system
- Wood chips come from Dry Creek Saw Mill waste product
- Funding $2 million grant/$2.8 million total
- Simple Pay Back: 13 years for Renewable Energy funds,19 years on total cost
- Successes:
  - During the first winter, saved $153,000 and 53,000 gallons in heating
  - Allowed the school to save 2 teacher positions, reopen music program and remodel the school kitchen
  - Potential to add additional facilities
  - Easy maintenance

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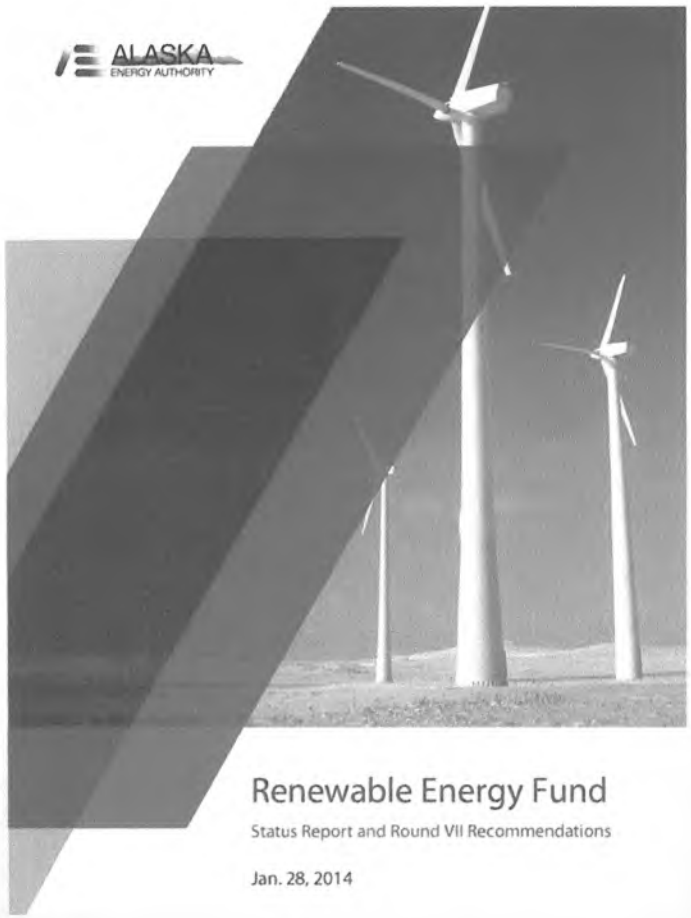

Renewable Energy Fund: Round VII Recommendations

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Renewable Energy Fund: Round VII

- Technical and economic analysis
  - Priority given to regions with high energy costs
- Capital Budget request includes $20 million
  - Can fund 26 projects: 17 heating and 9 electric or other projects
- Advisory committee recommended partial funding for 2 large hydro projects to fund 5 additional heating projects and 1 regional priority
- Requested fully fund hydro if additional funds available

Round VII Heat Applications

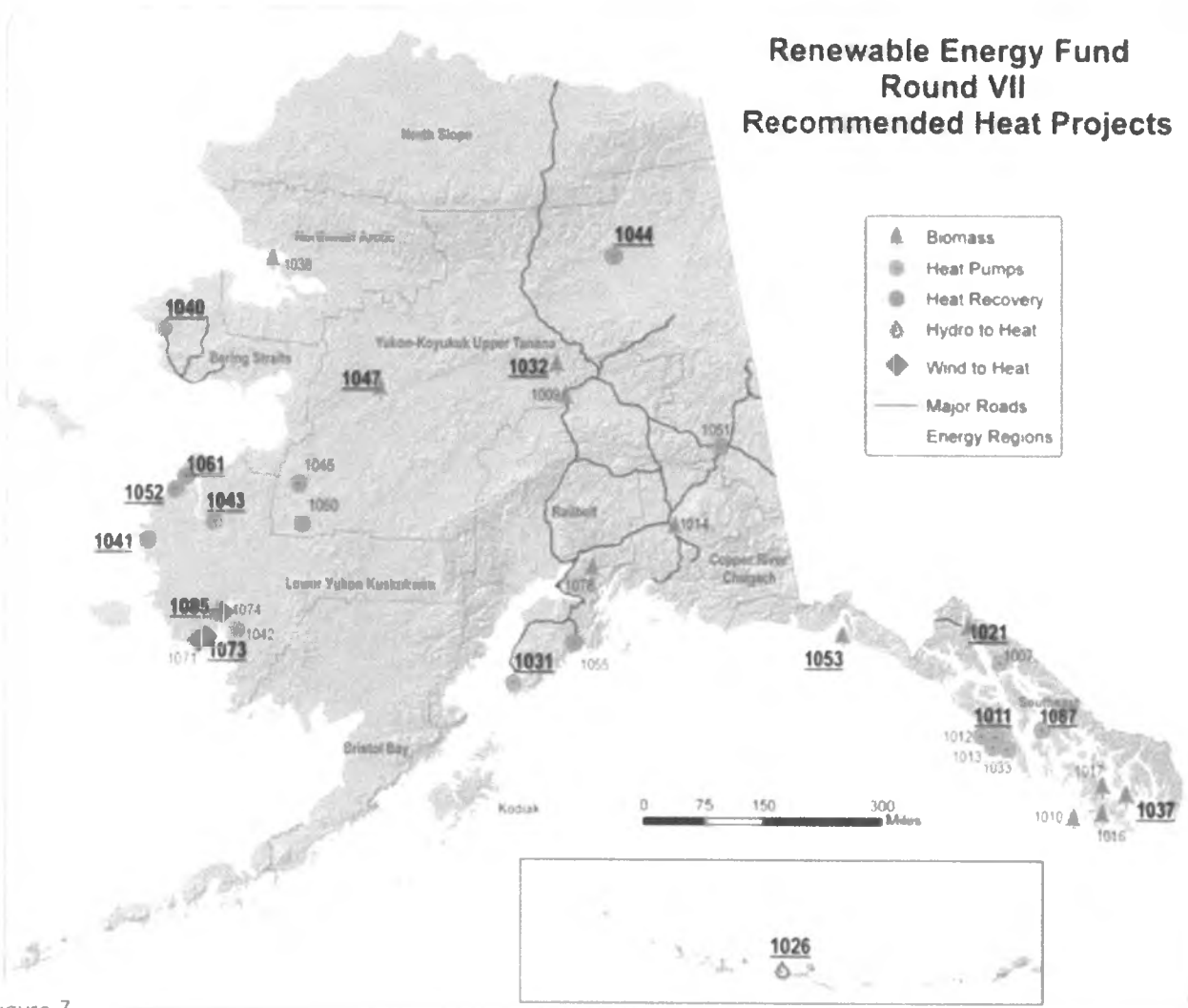

Figure 7

Round VII Standard Applications

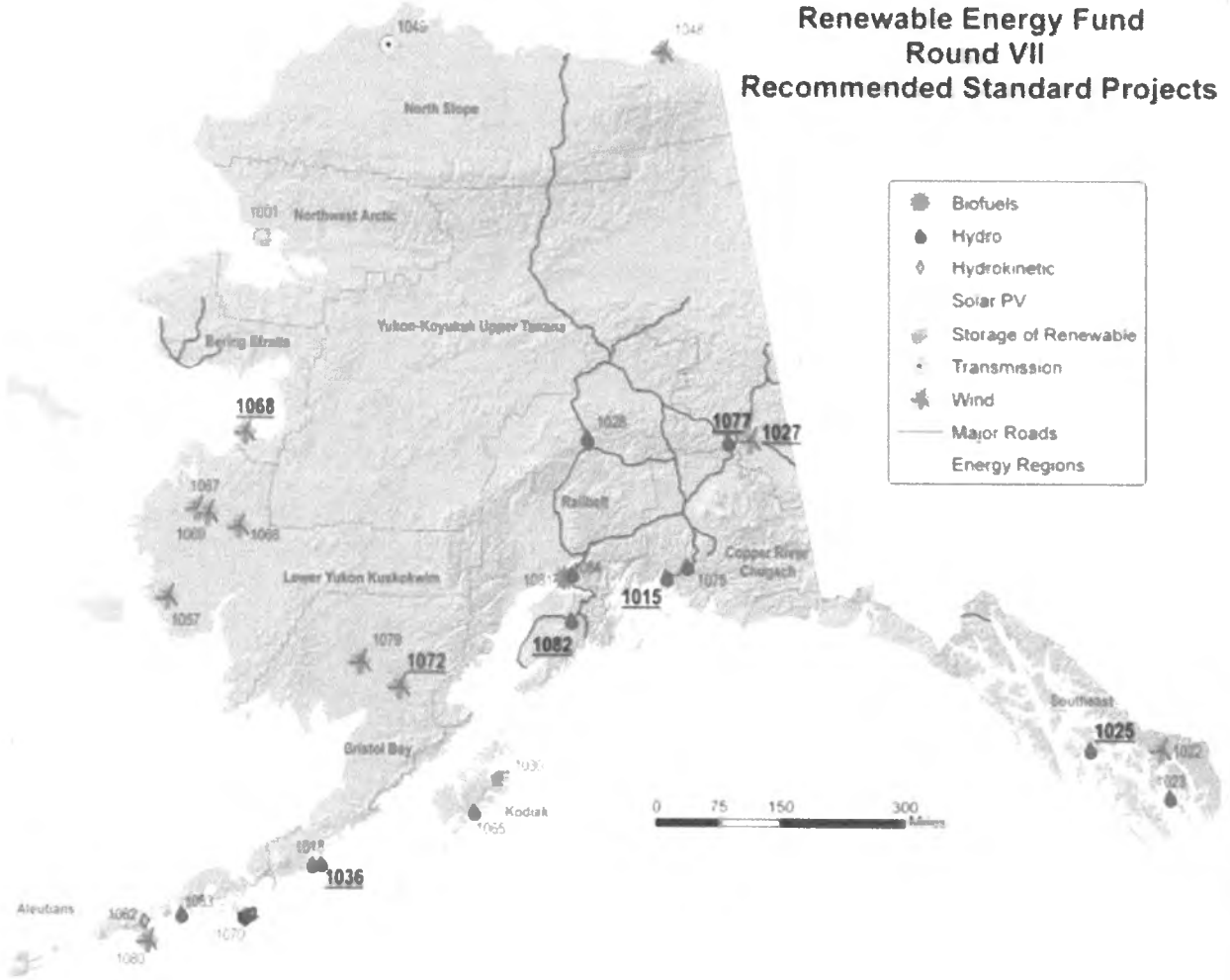

Figure 10

Renewable Energy Fund Round VII: Recommended Heat Applications

Recommended funding by type

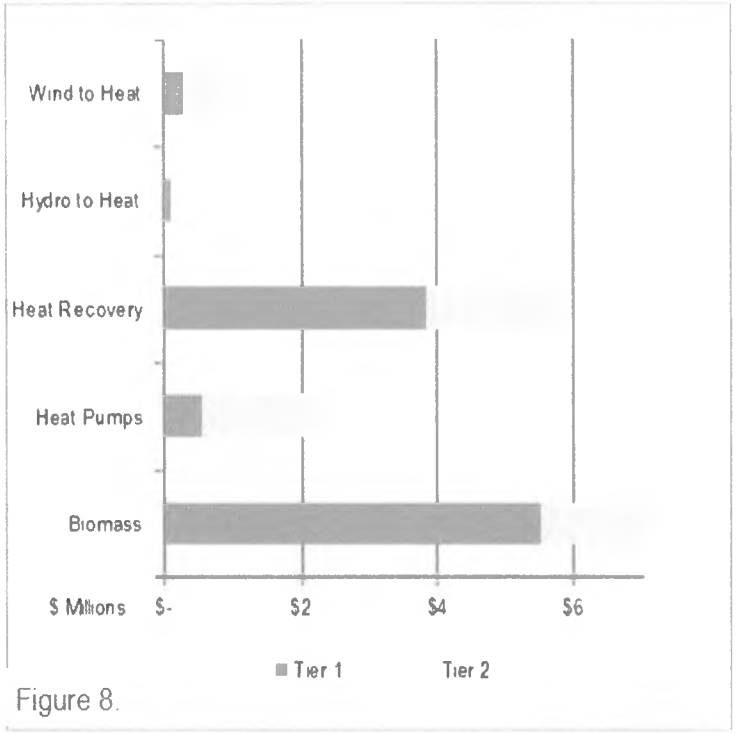

Figure 8.

Recommended funding by region

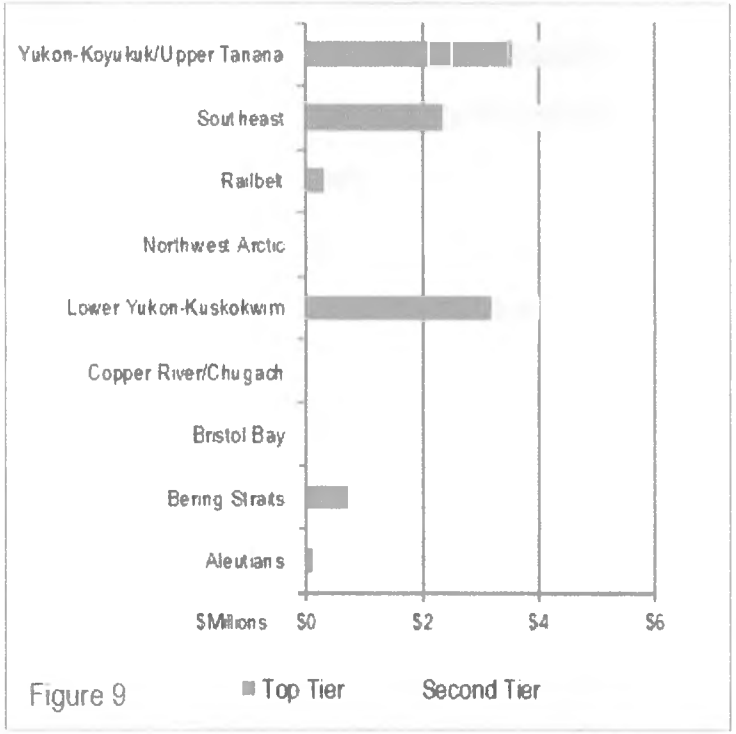

Figure 9

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Renewable Energy Fund Round VII: Electrical Applications Recommended

Recommended funding by type

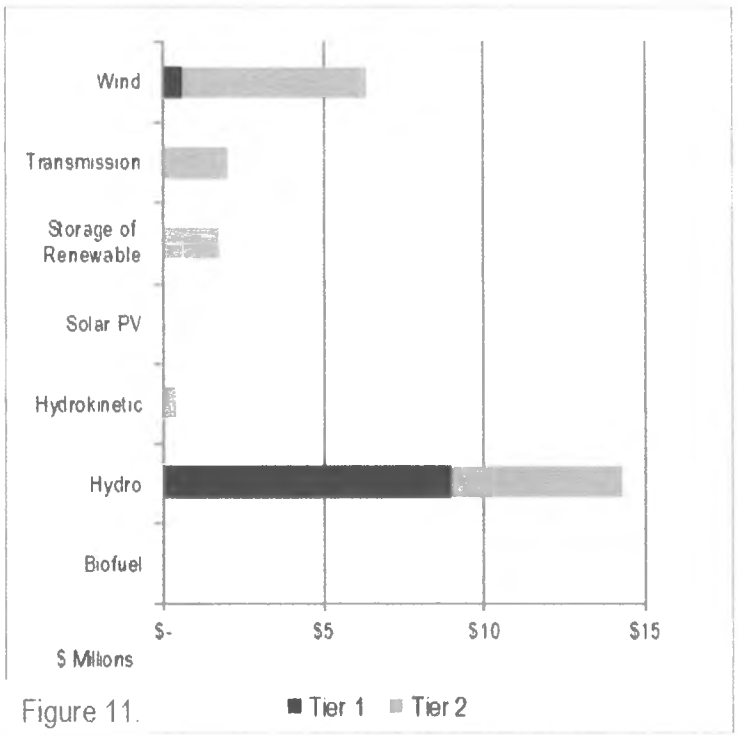

Figure 11.

Recommended funding by region

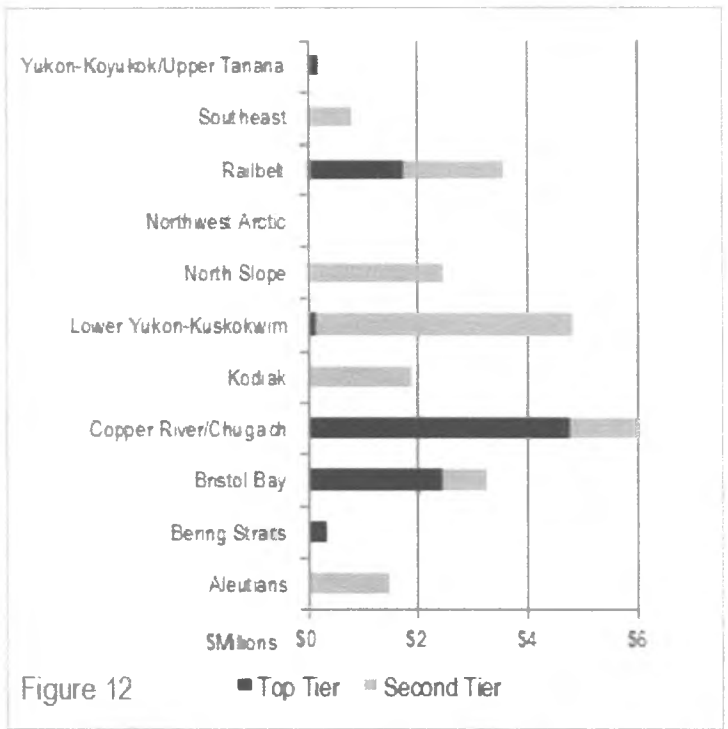

Figure 12

ALASKA ENERGY AUTHORITY

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Alaska Energy Authority
Renewable Energy Fund Grants
Rounds 1 through 6
As of February 06, 2014

Rnd.	Award No.	Grantee Name	Grant Title	Type	Region	Grant Status	Original Appropriation	Grant Budget	Grant Expenditures	Remaining Balance
R2	2195446	Aleutian Wind Energy	Sand Point Wind Construction	WIND	Aleutians Energy Region	Closed	639,806	639,495	639,495	-
R1	2195408	Aleutians East Borough	Aleutians East Borough Feasibility Study	OTHER	Aleutians Energy Region	Closed	25,000	25,000	25,000	-
R2	2195472	City of Akutan	Loud Creek Hydro Feasibility Analysis/Conce Design	HYDRO	Aleutians Energy Region	Closed	237,772	206,296	206,296	-
R2	2195473	City of Akutan	Town Creek Hydro System - Design for Repairs/Upgrade	HYDRO	Aleutians Energy Region	Closed	162,000	162,000	162,000	-
R2	2195475	City of Akutan	Hot Springs Bay Valley Geothermal Reconnaissance	GEOTHERM	Aleutians Energy Region	Closed	2,995,000	2,595,000	2,595,000	-
R3	7030003	City of Akutan	Akutan Hydroelectric System Repair and Upgrade	HYDRO	Aleutians Energy Region		1,391,000	1,391,000	1,080,748	310,252
R3	7030023	City of Akutan	Akutan Geothermal Development Project	GEOTHERM	Aleutians Energy Region	Closed	173,792	173,792	173,792	-
R4	7040050	City of Akutan	Akutan Geothermal Development Project	GEOTHERM	Aleutians Energy Region		2,695,000	2,695,000	625,099	2,069,901
R1	2195376	City of Atka	Chuniisax Creek Hydroelectric Construction	HYDRO	Aleutians Energy Region	Closed	996,000	996,000	996,000	-
R3	7030001	City of Atka	Atka Hydro Dispatched Excess Electrical Power	HEAT RECOV	Aleutians Energy Region	Closed	80,000	80,000	56,702	23,298
R4	7040051	City of False Pass Electric Utility	False Pass Wind Energy Project	WIND	Aleutians Energy Region		69,075	69,075	53,663	15,412
R5	7050887	City of King Cove	Waterfall Creek Hydroelectric Project	HYDRO	Aleutians Energy Region		200,000	200,000	42,990	157,010
R6	7060929	City of King Cove	Waterfall Creek Hydroelectric Project	HYDRO	Aleutians Energy Region		2,600,000	2,600,000	-	2,600,000
R3	7030004	City of Saint Paul Electric Utility	Saint Paul Fuel Economy Upgrade	HEAT RECOV	Aleutians Energy Region		98,149	98,149	9,727	88,422
R1	2195398	City of St. George	St. George Wind Farm Construction	WIND	Aleutians Energy Region		1,500,000	1,500,000	956,433	543,567
R2	2195449	City of Unalaska	Unalaska Heat Recovery Construction	HEAT RECOV	Aleutians Energy Region		1,300,000	1,300,000	377,072	922,928
R4	7040004	G & K Electric Utility	Cold Bay Wind Energy Project	WIND	Aleutians Energy Region		99,075	99,075	55,639	43,436
R6	7060967	G&K Electric Utility	Cold Bay Waste Heat Recovery Project	HEAT RECOV	Aleutians Energy Region		30,000	30,000	-	30,000
R4	7040006	Nelson Lagoon Electric Cooperative	Nelson Lagoon Wind Energy Project	WIND	Aleutians Energy Region		99,075	99,075	74,266	24,809
R1	2195375	Nikolski IRA Council	Nikolski Wind Integration Construction	WIND	Aleutians Energy Region	Closed	409,430	409,430	409,430	-
R2	2195450	TDX Adak Generating, LLC	Adak Diesel Hybrid	OTHER	Aleutians Energy Region	Closed	85,835	76,369	76,369	-
R3	7030002	TDX Corporation	St. Paul Wind Diesel Project	WIND	Aleutians Energy Region		1,900,000	1,900,000	1,202,871	697,129
					Aleutians Energy Region Total		**17,786,009**	**17,344,756**	**9,818,593**	**7,526,163**
R2	2195463	Alaska Village Electric Cooperative	Shaktoolik Wind Construction	WIND	Bering Straits Energy Region		2,465,664	2,465,664	2,465,633	31
R2	2195464	Alaska Village Electric Cooperative	Teller Wind Analysis	WIND	Bering Straits Energy Region		117,610	117,610	75,707	41,903
R4	7040008	Alaska Village Electric Cooperative	Stebbins Wind Feasibility Study	WIND	Bering Straits Energy Region		137,750	137,750	124,155	13,595
R4	7040052	Alaska Village Electric Cooperative	Koyuk Wind Feasibility	WIND	Bering Straits Energy Region		142,500	142,500	12,808	129,692
R4	7040053	Alaska Village Electric Cooperative	Elim Wind Feasibility Study	WIND	Bering Straits Energy Region		142,500	142,500	25,457	117,043
R5	7050876	Alaska Village Electric Cooperative	Surplus Wind Energy Recovery for Gambell Water System Heat	WIND	Bering Straits Energy Region		240,260	240,260	8,995	231,265
R5	7050871	Alaska Village Electric Cooperative, Inc.	Shaktoolik Surplus Wind Energy Recovery for Water System Heat	WIND	Bering Straits Energy Region		240,260	240,260	8,337	231,923
R6	7060939	Alaska Village Electric Cooperative, Inc.	Stebbins Heat Recovery Project	HEAT RECOV	Bering Straits Energy Region		1,319,088	1,319,088	-	1,319,088
R5	RE50839	City of Nome dba Nome Joint Utility System	Nome Renewable Energy Expansion Project	WIND	Bering Straits Energy Region	Closed	4,069,000	-	-	-
R6	7060934	City of Savoonga	Savoonga Heat Recovery System - Power Plant to Water Plant	HEAT RECOV	Bering Straits Energy Region		425,701	425,701	50,808	374,893
R5	7050856	City of Shishmaref	Shishmaref Heat Recovery Project	HEAT RECOV	Bering Straits Energy Region		310,841	310,841	11,785	299,056
R1	2195438	Nome Joint Utilities	Newton Peak Wind Farm	WIND	Bering Straits Energy Region		4,000,000	8,069,000	3,122,181	4,946,819
R1	2195444	Nome Joint Utility Systems	Nome Banner Peak Wind Farm Transmission Construction	TRANS	Bering Straits Energy Region	Closed	801,000	801,000	801,000	-
R3	7030037	UAF-Alaska Center for Energy and Power	Pilgrim Hot Springs Geothermal Resource Assessment	GEOTHERM	Bering Straits Energy Region		613,174	613,174	578,401	34,773
R1	2195401	Unalakleet Valley Electric Co	Unalakleet Wind Farm Construction	WIND	Bering Straits Energy Region	Closed	4,000,000	4,000,000	4,000,000	-
R4	7040007	University of Alaska Fairbanks	Pilgrim Hot Springs Geothermal Resource Assessment	GEOTHERM	Bering Straits Energy Region		1,330,467	1,330,467	1,178,667	151,800
					Bering Straits Energy Region Total		**20,355,815**	**20,355,815**	**12,463,934**	**7,891,881**
R3	7030008	Alaska Green Energy	Port Alsworth Hydroelectric Construction	HYDRO	Bristol Bay Energy Region	Closed	150,000	-	-	-
R3	7030006	Alaska Village Electric Cooperative	New Stuyahok Wind	WIND	Bristol Bay Energy Region		142,500	142,500	80,649	61,851
R1	2195389	Chignik Lagoon Power Utility	Chignik Lagoon Hydroelectric Final Design	HYDRO	Bristol Bay Energy Region	Closed	150,000	150,000	150,000	-
R5	7050836	Chignik Lagoon Village Council	Packer's Creek Hydroelectric Project	HYDRO	Bristol Bay Energy Region		1,993,496	1,993,496	26,924	1,966,572
R1	2195388	City of Chignik	Indian Creek Hydro Feasibility Study	HYDRO	Bristol Bay Energy Region		207,500	207,500	115,013	92,487
R3	7030007	City of Pilot Point	Pilot Point Wind Power & Heat	WIND	Bristol Bay Energy Region		1,421,240	1,421,240	-	1,421,240
R5	7050858	City of Togiak	Togiak Waste Heat Recovery Project	HEAT RECOV	Bristol Bay Energy Region		443,030	443,030	-	443,030
R2	2195466	Igiugig Village Council	Kvichak River RISEC Feasibility and Conceptual Des	OCEANRIVER	Bristol Bay Energy Region		718,175	718,175	568,237	149,938
R6	7060908	Iliamna, Newhalen, Nondalton Electrical Coop.	Tazimina Hydroelectric Project Capacity Increase	HYDRO	Bristol Bay Energy Region		160,000	160,000	-	160,000
R6	RE60966	Kokhanok Electric Utilities	Kokhanok High-penetration Wind Energy	WIND	Bristol Bay Energy Region		185,000	-	-	-
R1	2195374	Lake and Peninsula Borough	Lake Pen Borough Wind Feasibility Study	WIND	Bristol Bay Energy Region	Closed	184,000	184,000	184,000	-
R1	2195406	Lake and Peninsula Borough	Lake Peninsula Borough Wood Heating Final Design	BIOMASS	Bristol Bay Energy Region	Closed	77,000	77,000	77,000	-
R1	2195409	Lake and Peninsula Borough	Chignik Lake Area Wind-Hydro Final Design	WIND	Bristol Bay Energy Region	Closed	375,000	74,851	74,851	-
R4	7040010	Lake and Peninsula Borough	Lake and Peninsula Wood Boilers	BIOMASS	Bristol Bay Energy Region	Closed	369,900	528	528	-
R4	RE40686	Lake And Peninsula Borough	Port Heiden Wind Turbine Project	WIND	Bristol Bay Energy Region		250,000	-	-	-
R6	RE60911	Lake and Peninsula Borough	Levelock Wind Reconnaissance Study	WIND	Bristol Bay Energy Region		10,000	-	-	-

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R6	RE60912	Lake and Peninsula Borough	Egegik Wind Feasibility Study	WIND	Bristol Bay Energy Region		60,000	-	-	-
R4	7040011	New Koliganek Village Council	New Koliganek Wind Heat Recovery Project	WIND	Bristol Bay Energy Region		105,050	105,050	61,400	43,650
R1	2195419	Nushagak Electric and Telephone Cooperative	Nushagak Area Hydropower Project	HYDRO	Bristol Bay Energy Region		4,006,500	4,006,500	1,845,664	2,160,836
R3	RE30435	Nushagak Electric and Telephone Cooperative	Nushagak Area Hydropower Project	HYDRO	Bristol Bay Energy Region	Closed	-	-	-	-
R6	RE60976	Pedro Bay Village Council	Knutson Creek Hydroelectric Project-Design and Permitting	HYDRO	Bristol Bay Energy Region		290,000	-	-	-
R6	7060944	Southwest Regional School District	New Stuyahok Heat Recovery	HEAT RECOV	Bristol Bay Energy Region		486,000	486,000	-	486,000
					Bristol Bay Energy Region Total		**11,784,391**	**10,169,869**	**3,184,266**	**6,985,604**
R2	2195462	Alaska Power Company	Carlson Creek Hydroelectric	HYDRO	Copper River/Chugach Energy Region	Closed	40,000	8,811	8,811	-
R6	7060915	Alaska Power Company	Eagle Solar Array Project	SOLAR	Copper River/Chugach Energy Region		132,600	132,600	7,548	125,052
R1	2195380	Cheesh'na Tribal Council	Chistochina Central Wood Heating Construction	BIOMASS	Copper River/Chugach Energy Region		500,000	500,000	58,949	441,051
R3	7030010	Chenega IRA Council	Chenega Bay Hydro Design & Permitting	HYDRO	Copper River/Chugach Energy Region		252,000	252,000	225,998	26,002
R2	2195456	Chitina Electric, Inc.	Fivemile Creek Feasibility/Conceptual Design	HYDRO	Copper River/Chugach Energy Region		303,000	303,000	192,468	110,532
R4	7040012	Chitina Electric, Inc.	Fivemile Creek Hydroelectric Project	HYDRO	Copper River/Chugach Energy Region		277,000	277,000	-	277,000
R1	2195302	Copper River School District	Kenny Lake School Wood Boiler-Planning & Design	BIOMASS	Copper River/Chugach Energy Region		120,000	120,000	91,642	28,358
R4	7040055	Copper River School District	Kenny Lake School Wood Fired Boiler	BIOMASS	Copper River/Chugach Energy Region		565,485	565,485	115	565,370
R1	2195390	Copper Valley Electric Association	Allison Lake Hydro Feasibility Study	HYDRO	Copper River/Chugach Energy Region	Closed	2,288,000	2,288,000	2,288,000	-
R6	RE60930	Copper Valley Electric Association, Inc.	Allison Creek Project	HYDRO	Copper River/Chugach Energy Region		2,085,509	-	-	-
R1	2195386	Cordova Electric Cooperative	Humpback Creek Hydroelectric Construction	HYDRO	Copper River/Chugach Energy Region	Closed	4,000,000	4,000,000	4,000,000	-
R1	2195407	Cordova Electric Cooperative	Cordova Heat Recovery Construction	HEAT RECOV	Copper River/Chugach Energy Region	Closed	1,780,000	1,780,000	1,780,000	-
R3	7030009	Cordova Electric Cooperative	Humpback Creek Hydroelectric Project Rehabilitation	HYDRO	Copper River/Chugach Energy Region	Closed	4,000,000	4,000,000	4,000,000	-
R1	2195381	Gulkana Village Council	Gulkana Central Wood Heating Construction	BIOMASS	Copper River/Chugach Energy Region		500,000	500,000	500,000	-
R6	7060982	Mentasta Traditional Council	Mentasta Community Facilities Woody Biomass Space Heating Proje	BIOMASS	Copper River/Chugach Energy Region		460,000	460,000	-	460,000
R1	2195399	Native Village of Eyak	Cordova Wood Processing Plant-Purchase and setup	BIOMASS	Copper River/Chugach Energy Region	Closed	147,720	136,760	136,760	-
R4	7040054	Native Village of Eyak	Cordova Community Biomass Feasibility	BIOMASS	Copper River/Chugach Energy Region	Closed	75,000	63,999	63,999	-
R2	2195461	Tatitlek Village IRA Council	Tatitlek Wind/Hydro Feasibility Assessment	WIND	Copper River/Chugach Energy Region	Closed	138,210	51,974	51,974	-
R5	7050823	Tatitlek Village IRA Council	Tatitlek Heat Recovery Project	HEAT RECOV	Copper River/Chugach Energy Region		265,000	265,000	-	265,000
					Copper River/Chugach Energy Region Total		**17,929,524**	**15,704,630**	**13,406,264**	**2,298,365**
R1	2195431	Alaska Village Electric Cooperative	Old Harbor Hydroelectric Final Design	HYDRO	Kodiak Energy Region	Closed	225,000	225,000	225,000	-
R4	7040014	Alaska Village Electric Cooperative	Old Harbor Hydroelectric Project	HYDRO	Kodiak Energy Region		237,500	237,500	237,500	-
R1	2195371	Kodiak Electric Association	Pillar Mountain Wind Project - Construction	WIND	Kodiak Energy Region	Closed	4,000,000	4,000,000	4,000,000	-
R2	2195460	Kodiak Electric Association	Terror Lake Capacity - Feasibility/Conceptual Design	HYDRO	Kodiak Energy Region	Closed	500,000	224,419	224,419	-
R3	7030011	Kodiak Electric Association	Terror Lake Unit 3 Hydroelectric Project	HYDRO	Kodiak Energy Region	Closed	248,160	248,160	248,160	-
R4	7040013	Kodiak Electric Association	Terror Lake Unit 3 Hydroelectric Project	HYDRO	Kodiak Energy Region		3,751,840	3,751,840	3,751,840	-
R5	7050803	Kodiak Electric Association, Inc.	Pillar Mountain High Penetration Wind Project	WIND	Kodiak Energy Region	Closed	7,800,000	7,800,000	7,800,000	-
					Kodiak Energy Region Total		**16,762,500**	**16,486,919**	**16,486,919**	**-**
R4	7040057	Akiachak Native Community/Akiachak Ltd.	Akiachak Wind Feasibility & Conceptual Design	WIND	Lower Yukon/Kuskokwim Energy Region		110,000	110,000	34,969	75,031
R1	2195383	Alaska Village Electric Cooperative	Quinhagak Wind Farm Construction	WIND	Lower Yukon/Kuskokwim Energy Region	Closed	3,882,243	3,437,322	3,437,322	-
R1	2195384	Alaska Village Electric Cooperative	Mekoryuk Wind Farm Construction	WIND	Lower Yukon/Kuskokwim Energy Region		3,155,765	3,155,765	3,155,765	-
R1	2195385	Alaska Village Electric Cooperative	Toksook Wind Farm Construction	WIND	Lower Yukon/Kuskokwim Energy Region	Closed	1,037,750	1,037,750	1,037,750	-
R2	2195468	Alaska Village Electric Cooperative	Emmonak/Alakanuk Wind Design and Construction	WIND	Lower Yukon/Kuskokwim Energy Region	Closed	8,000,000	8,000,000	8,000,000	-
R4	7040017	Alaska Village Electric Cooperative	St. Mary's/ Pitka's Point Wind Construction	WIND	Lower Yukon/Kuskokwim Energy Region		275,554	275,554	158,637	116,917
R4	7040019	Alaska Village Electric Cooperative	Eek Wind Feasibility	WIND	Lower Yukon/Kuskokwim Energy Region		142,500	142,500	70,241	72,259
R4	7040021	Alaska Village Electric Cooperative	Marshall Wind Feasibility	WIND	Lower Yukon/Kuskokwim Energy Region		111,150	111,150	111,150	-
R4	7040022	Alaska Village Electric Cooperative	Scammon Bay Wind Feasibility	WIND	Lower Yukon/Kuskokwim Energy Region		142,500	142,500	106,345	36,155
R5	7050870	Alaska Village Electric Cooperative	Surplus Wind Energy Recovery for Mekoryuk Water System Heat	WIND	Lower Yukon/Kuskokwim Energy Region		264,459	264,459	2,480	261,979
R5	7050875	Alaska Village Electric Cooperative	Surplus Wind Energy Recovery for Chevak Water System Heat	WIND	Lower Yukon/Kuskokwim Energy Region		240,260	240,260	8,712	231,548
R2	2195447	Association of Village Council Presidents	Kiseralik/Chikuminuk Hydro	HYDRO	Lower Yukon/Kuskokwim Energy Region	Closed	250,000	229,952	229,952	-
R4	7040002	Atmautluak Traditional Council	Atmautluak Wind Renewable Energy	WIND	Lower Yukon/Kuskokwim Energy Region		100,000	100,000	100,000	-
R6	7060935	Atmautluak Traditional Council	Atmautluak Washeteria Heat Recovery Project	HEAT RECOV	Lower Yukon/Kuskokwim Energy Region		350,000	350,000	67,863	282,137
R1	2195432	City of Bethel	Bethel Wind Farm	WIND	Lower Yukon/Kuskokwim Energy Region		2,598,320	2,598,320	-	2,598,320
R4	7040056	City of Chefornak	Chefornak Wind Feasibility Study	WIND	Lower Yukon/Kuskokwim Energy Region		136,750	136,750	16,227	120,523
R1	2195439	City of Hooper Bay	Hooper Bay Wind Farm Feasibility	WIND	Lower Yukon/Kuskokwim Energy Region	Closed	80,000	60,179	60,179	-
R6	RE60940	City of Marshall	Marshall Heat Recovery - Water Treatment Plant and Community St	HEAT RECOV	Lower Yukon/Kuskokwim Energy Region		183,200	-	-	-
R4	7040016	City of Napaskiak	Napaskiak Wind, Heat and Heat Recovery Project	WIND	Lower Yukon/Kuskokwim Energy Region		61,225	61,225	44,439	16,786
R5	7050844	City of Russian Mission	Russian Mission Heat Recovery System	HEAT RECOV	Lower Yukon/Kuskokwim Energy Region		555,000	555,000	11,790	543,210
R5	7050847	City of Scammon Bay	Scammon Bay Hydro Design & Engineering	WIND	Lower Yukon/Kuskokwim Energy Region		80,723	80,723	-	80,723
R1	2195410	Kwigillingok Power Company	Kwigillingok High Penetration Wind-Diesel Smart Grid	WIND	Lower Yukon/Kuskokwim Energy Region		1,600,000	1,600,000	1,600,000	-

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R4	RE40607	Lime Village Traditional Council	Lime Village Photovoltaic Retrofit	SOLAR	Lower Yukon/Kuskokwim Energy Region		25,000	-	-	-
R6	7060937	Native Village of Kwinhagak	Kwinhagak Heat Recovery - Water Treatment Plant and Washeteria	HEAT RECOV	Lower Yukon/Kuskokwim Energy Region		668,350	668,350	-	668,350
R4	7040020	Organized Village of Kwethluk	Kwethluk Wind Feasibility Study	WIND	Lower Yukon/Kuskokwim Energy Region		145,000	145,000	41,260	103,740
R1	2195411	Puvurnaq Power Company	Kongiganak High Penetration Wind-Diesel Smart Grid	WIND	Lower Yukon/Kuskokwim Energy Region		1,700,000	1,700,000	1,699,792	208
R5	7050848	Sleetmute Traditional Council	Sleetmute Heat Recovery - Power Plant to Water Plant	HEAT RECOV	Lower Yukon/Kuskokwim Energy Region		126,682	126,682	92,244	34,438
R4	RE40604	TDX Power, Inc.	Bethel Renewable Energy Project	WIND	Lower Yukon/Kuskokwim Energy Region		213,690	-	-	-
R2	2195457	Tuntutuliak Comm Svcs Assoc	Tuntutuliak High Penetration Wind-Diesel Smart Grid	WIND	Lower Yukon/Kuskokwim Energy Region		1,760,000	1,760,000	1,760,000	-
					Lower Yukon/Kuskokwim Energy Region Total		**27,996,121**	**27,089,441**	**21,847,116**	**5,242,325**
R2	2195448	North Slope Borough	Barrow to Atqasuk Transmission Feasibility Study	TRANS	Northslope Energy Region	Closed	175,000	157,430	157,430	-
R2	2195467	North Slope Borough	Point Lay Heat Recovery Construction	HEAT RECOV	Northslope Energy Region		395,912	395,912	297,000	98,912
R2	2195471	North Slope Borough	Wainwright Heat Recovery	HEAT RECOV	Northslope Energy Region	Closed	300,000	-	-	-
R3	7030012	North Slope Borough	Point Hope Wind Diesel Generation Project	WIND	Northslope Energy Region		132,000	132,000	32,847	99,153
R3	7030013	North Slope Borough	Wainwright Wind Diesel Generation Project	WIND	Northslope Energy Region		132,000	132,000	33,480	98,520
R3	7030014	North Slope Borough	Point Lay Wind Diesel Generation Project	WIND	Northslope Energy Region		132,000	132,000	50,565	81,435
R4	7040023	North Slope Borough	Atqasuk Transmission Line	TRANS	Northslope Energy Region		210,000	210,000	-	210,000
R4	7040025	North Slope Borough	Kaktovik Wind Diesel Feasibility Study	WIND	Northslope Energy Region		132,000	132,000	35,048	96,952
R4	RE40611	North Slope Borough	Point Hope Wind turbine Design	WIND	Northslope Energy Region		298,000	-	-	-
R4	RE40612	North Slope Borough	Point Lay Wind Generation Design	WIND	Northslope Energy Region		298,000	-	-	-
R4	RE40613	North Slope Borough	Wainwright Wind Turbine	WIND	Northslope Energy Region		298,000	-	-	-
					Northslope Energy Region Total		**2,502,912**	**1,291,342**	**606,369**	**684,973**
R1	2195412	Alaska Village Electric Cooperative	Ambler Solar PV Construction	SOLAR	Northwest Arctic Energy Region	Closed	550,000	20,122	20,122	-
R1	2195413	Alaska Village Electric Cooperative	Cosmos Hills Hydroelectric Feasibility Study	HYDRO	Northwest Arctic Energy Region		1,025,000	1,025,000	939,082	85,918
R3	7030016	Alaska Village Electric Cooperative	Kivalina Wind-Intertie Feasibility Analysis & Conceptual Design	WIND	Northwest Arctic Energy Region		183,350	183,350	109,141	74,209
R4	7040030	Alaska Village Electric Cooperative	Selawik Hybrid Wind Diesel System Turbine Upgrade	WIND	Northwest Arctic Energy Region		85,000	85,000	13,054	71,946
R2	2195453	City of Ambler	Ambler Heat Recovery Construction	HEAT RECOV	Northwest Arctic Energy Region		435,000	435,000	434,928	72
R5	7050840	City of Kobuk	Kobuk Biomass Design & Construction Project	BIOMASS	Northwest Arctic Energy Region		356,424	356,424	36,563	319,861
R4	7040029	City of Kotzebue	Kotzebue Paper and Wood Waste to Energy Project	BIOMASS	Northwest Arctic Energy Region		85,000	85,000	69,570	15,430
R6	RE60941	City of Noorvik	Noorvik Heat Recovery - Water Treatment Plant	HEAT RECOV	Northwest Arctic Energy Region		985,805	-	-	-
R1	2195427	Kotzebue Electric Association	Kotzebue Wind Farm Expansion Construction	WIND	Northwest Arctic Energy Region	Closed	4,000,000	4,000,000	4,000,000	-
R2	2195454	Kotzebue Electric Association	Kotzebue Electric Heat Recovery Construction	HEAT RECOV	Northwest Arctic Energy Region		915,627	915,627	401,157	514,470
R3	7030015	Kotzebue Electric Association	High Penetration Wind-Battery-Diesel Hybrid	WIND	Northwest Arctic Energy Region		4,000,000	4,000,000	2,655,999	1,344,001
R1	2195377	Northwest Arctic Borough	Buckland, Deering, Noorvik Wind Farm Construction	WIND	Northwest Arctic Energy Region		10,758,928	1,596,953	489,471	1,107,482
R4	7040028	Northwest Arctic Borough	Upper Kobuk River Biomass	BIOMASS	Northwest Arctic Energy Region		250,000	250,000	1,972	248,028
R1	2195397	Northwest Inupiat Housing Authority	Kobuk River Valley Woody Biomass Feasibility	BIOMASS	Northwest Arctic Energy Region	Closed	249,500	231,606	231,606	-
					Northwest Arctic Energy Region Total		**23,879,634**	**13,184,082**	**9,402,665**	**3,781,417**
R4	7040003	Alaska Energy Authority	Battle Creek Diversion Project	HYDRO	Railbelt Energy Region		500,000	500,000	500,000	-
R1	2195370	Alaska Environmental Power	Delta Area Wind Turbines-Construction	WIND	Railbelt Energy Region	Closed	2,000,000	2,000,000	2,000,000	-
R1	2195422	Alaska Green Energy	California Creek Hydroelectric Feasibility	HYDRO	Railbelt Energy Region	Closed	47,625	27,300	27,300	-
R4	7040058	Alaska Vocational Technical Center	AVTEC Hydro Training Facility	HYDRO	Railbelt Energy Region		67,500	67,500	-	67,500
R1	RE10094	Alaska Wind Energy LLC	Nikolaevsk Wind Farm Design	WIND	Railbelt Energy Region	Closed	180,600	-	-	-
R1	2195465	Alaska Wind Power, LLC	Delta Junction Wind Assessment & Avian Study	WIND	Railbelt Energy Region	Closed	105,000	65,412	65,412	-
R4	7040063	Bering Pacific Engineering	Eska Creek Hydroelectric Project	HYDRO	Railbelt Energy Region	Closed	37,000	14,408	14,408	-
R1	2195358	Chena Power, LLC	Biomass-fired Organic Rankine Cycle System	BIOMASS	Railbelt Energy Region		2,000,000	2,000,000	1,900,000	100,000
R4	7040005	Chugach Electric Association, Inc.	Stetson Creek Diversion/Cooper Lake Dam Facilities Project	HYDRO	Railbelt Energy Region	Closed	576,080	576,080	576,080	-
R4	RE40615	Chugach Electric Association, Inc.	CEA Transmission Line to Renewable Energy Resources	TRANS	Railbelt Energy Region		600,000	-	-	-
R3	7030017	City of Seward	Alaska Sealife Center Ph II Seawater Heat Pump Project	GEOTHERM	Railbelt Energy Region	Closed	286,580	286,580	286,580	-
R1	2195396	City of Whittier	Whittier Creek Hydroelectric Reconnaissance	HYDRO	Railbelt Energy Region	Closed	85,000	39,471	39,471	-
R1	2195395	Delta/Greely School District	Delta Junction Wood Chip Heating	BIOMASS	Railbelt Energy Region	Closed	2,000,000	2,000,000	2,000,000	-
R4	7040060	Eklutna, Inc.	Hunter Creek Hydroelectric Project	HYDRO	Railbelt Energy Region	Closed	84,000	84,000	84,000	-
R1	RE10087	Fishhook Renewable Energy, LLC	Fishhook Hydroelectric Construction	HYDRO	Railbelt Energy Region	Closed	2,000,000	-	-	-
R1	2195391	Golden Valley Electric Association	North Pole Heat Recovery Construction	HEAT RECOV	Railbelt Energy Region	Closed	840,000	817,292	817,292	-
R1	2195394	Golden Valley Electric Association	McKinley Village Solar Thermal Construction	SOLAR	Railbelt Energy Region	Closed	190,000	190,000	190,000	-
R1	2195425	Golden Valley Electric Association	Eva Creek Wind Farm Feasibility	WIND	Railbelt Energy Region	Closed	2,000,000	2,000,000	2,000,000	-
R4	7040031	Golden Valley Electric Association	GVEA Eva Creek Wind Turbine Purchase	WIND	Railbelt Energy Region		1,463,200	1,463,200	1,463,200	-
R1	2195331	Homer Electric Association, Inc.	Falls Creek Low-Impact Hydro Assess Pre-Construction	HYDRO	Railbelt Energy Region	Closed	50,000	50,000	50,000	-
R1	2195333	Homer Electric Association, Inc.	Grant Lk/Crk Low-Impact Hydro Assess Pre-Construction	HYDRO	Railbelt Energy Region	Closed	50,000	50,000	50,000	-
R1	2195334	Homer Electric Association, Inc.	Crescent Lk/Crk Low-Impact Hydro Assess Pre-Construction	HYDRO	Railbelt Energy Region	Closed	50,000	23,273	23,273	-

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R1	2195335	Homer Electric Association, Inc.	Ptarmigan Lk/Crk Low-Impact Hydro Assess Pre-Construction	HYDRO	Railbelt Energy Region	Closed	50,000	4,684	4,684	-
R1	2195420	Independence Power, LLC	Fourth of July Creek Hydroelectric Reconnaissance	HYDRO	Railbelt Energy Region	Closed	20,000	20,000	20,000	-
R4	RE40693	Independence Power, LLC	Fourth of July Creek Hydroelectric Project	HYDRO	Railbelt Energy Region		136,500	-	-	-
R1	2195428	Kenai Hydro, LLC	Grant Lake/Falls Creek Hydro Feasibility Study	HYDRO	Railbelt Energy Region	Closed	816,000	816,000	816,000	-
R4	7040035	Kenai Hydro, LLC	Grant Lake Hydroelectric Facility	HYDRO	Railbelt Energy Region		1,184,000	1,184,000	981,228	202,772
R1	2195433	Kenai Winds, LLC	Nikiski Wind Farm Construction	WIND	Railbelt Energy Region	Closed	80,000	2,103	2,103	-
R2	RE20222	Kenai Winds, LLC	Nikiski Wind Farm Construction	WIND	Railbelt Energy Region	Closed	2,000,000	-	-	-
R4	7040062	Matanuska Susitna Borough	Susitna Valley High School Wood Heat	BIOMASS	Railbelt Energy Region	Closed	750,000	-	-	-
R1	2195430	Municipality of Anchorage	Anchorage Landfill Gas Electricity Construction	BIOMASS	Railbelt Energy Region	Closed	2,000,000	2,000,000	2,000,000	-
R4	7040064	Native Village of Cantwell	Jack River Hydroelectric Feasibility Study	HYDRO	Railbelt Energy Region	Closed	30,000	30,000	30,000	-
R4	7040059	Ocean Renewable Power Company	Cook Inlet TidGen Project	OCEANRIVER	Railbelt Energy Region		2,000,000	2,000,000	-	2,000,000
R4	RE40652	Ormat Nevada, Inc.	Mount Spurr Geothermal Project	GEOTHERM	Railbelt Energy Region		1,999,972	-	-	-
R3	7030018	ORNI 46 LLC	Mount Spurr Geothermal Project	GEOTHERM	Railbelt Energy Region	Closed	1,993,158	1,993,158	1,993,158	-
R4	7040061	Port Graham Village Council	Port Graham Biomass Waste Heat Demo Project	BIOMASS	Railbelt Energy Region		75,000	75,000	-	75,000
R1	RE10057	South Fork Hydro, LLC	South Fork Hydroelectric Construction	HYDRO	Railbelt Energy Region	Closed	1,000,000	-	-	-
R1	2195437	University of Alaska Fairbanks	Nenana Hydrokinetic Construction	OCEANRIVER	Railbelt Energy Region		450,000	450,000	450,000	-
					Railbelt Energy Region Total		**29,797,215**	**20,829,461**	**18,384,189**	**2,445,272**
R4	7040039	Alaska Electric Light & Power Company	Snettisham Transmission Line Avalanche Mitigation	TRANS	Southeast Energy Region	Closed	2,000,000	2,000,000	2,000,000	-
R3	RE30440	Alaska Power & Telephone Company	Neck Lake Hydroelectric Project	HYDRO	Southeast Energy Region	Closed	90,000	-	-	-
R1	2195360	Alaska Power and Telephone	North Prince of Wales Island Intertie Project	TRANS	Southeast Energy Region		3,752,181	3,752,181	2,106,082	1,646,099
R2	2195455	Alaska Power and Telephone	Neck Lake Feasibility Study & Conceptual Design	HYDRO	Southeast Energy Region	Closed	108,000	22,475	22,475	-
R4	7040066	Alaska Power Company	Connelly Lake Hydroelectric Project Feasibility Study	HYDRO	Southeast Energy Region		468,000	468,000	355,203	112,797
R4	7040067	Alaska Power Company	Schubee Lake Hydroelectric Project Feasibility Study	HYDRO	Southeast Energy Region	Closed	80,000	74,191	74,191	-
R4	RE40629	Alaska Power Company	Reynolds Creek Hydro Electric Project Transmission Line	TRANS	Southeast Energy Region		2,000,000	-	-	-
R1	2195400	Burro Creek Holdings, LLC	Burro Creek Hydro Feasibility Study	HYDRO	Southeast Energy Region	Closed	48,000	48,000	48,000	-
R1	2195373	Chilkoot Indian Association	Haines Central Wood Heating Construction	BIOMASS	Southeast Energy Region	Closed	288,222	188,620	188,620	-
R1	2195359	City and Borough of Juneau	Juneau Airport Ground Source Heat Pump	GEOTHERM	Southeast Energy Region	Closed	513,000	513,000	513,000	-
R1	2195393	City and Borough of Juneau	Juneau Ground Source Heat Pump Constr	GEOTHERM	Southeast Energy Region	Closed	1,450,000	1,450,000	1,450,000	-
R1	2195418	City and Borough of Sitka	Takatz Lake Hydroelectric Feasibility	HYDRO	Southeast Energy Region		514,684	2,000,000	1,725,207	274,793
R4	7040001	City and Borough of Sitka	Japonski Island Boathouse Heat Pump	GEOTHERM	Southeast Energy Region	Closed	125,000	-	-	-
R4	7040071	City and Borough of Sitka	Sitka Renewable Energy Feasibility for Centennial Hall & Library	GEOTHERM	Southeast Energy Region		30,000	30,000	30,000	-
R4	7040072	City and Borough of Sitka	Sitka Renewable Energy Feasibility Study for Wastewater Treatment	GEOTHERM	Southeast Energy Region	Closed	20,000	16,699	16,699	-
R6	7060917	City and Borough of Sitka	Blue Lake Hydroelectric Expansion Project	HYDRO	Southeast Energy Region		4,000,000	4,000,000	-	4,000,000
R1	2195423	City and Borough of Wrangell	Wrangell Hydro Based Electric Boilers Construction	HYDRO	Southeast Energy Region	Closed	2,000,000	1,862,387	1,862,387	-
R4	7040070	City and Borough of Wrangell	Wrangell Electric Vehicle Feasibility Study	OTHER	Southeast Energy Region		25,000	25,000	20,178	4,822
R4	7040042	City of Craig	Biomass Fuel Dryer Project	BIOMASS	Southeast Energy Region		350,000	350,000	308,246	41,754
R4	7040044	City of Ketchikan	Whitman Lake Hydroelectric Project	HYDRO	Southeast Energy Region		700,000	700,000	700,000	-
R4	7040040	City of Pelican	Pelican Hydroelectric Upgrade Project	HYDRO	Southeast Energy Region		1,896,836	1,896,836	1,893,253	3,583
R1	2195415	City of Petersburg d.b.a	Ruth Lake Hydro Reconnaissance	HYDRO	Southeast Energy Region	Closed	160,000	155,702	155,702	-
R4	7040041	City of Tenakee Springs Electric Department	Indian River Hydroelectric Project	HYDRO	Southeast Energy Region		203,000	203,000	134,222	68,778
R6	7060978	City of Tenakee Springs Electric Department	Indian River Hydroelectric Project Construction	HYDRO	Southeast Energy Region		2,988,000	2,988,000	196,551	2,791,449
R4	7040043	Community of Elfin Cove Utility Commission	Elfin Cove Hydroelectric Project	HYDRO	Southeast Energy Region		347,000	347,000	44,121	302,879
R1	2195387	Gustavus Electric Company	Falls Creek Hydroelectric Construction	HYDRO	Southeast Energy Region	Closed	750,000	750,000	750,000	-
R1	2195440	Haida Energy, Inc.	Reynolds Creek Hydroelectric Construction	HYDRO	Southeast Energy Region		2,000,000	2,000,000	577,361	1,422,639
R1	2195372	Haines Borough	Haines Central Wood Heating Feasibility Study	BIOMASS	Southeast Energy Region		120,500	120,500	65,378	55,122
R4	7040069	Haines Borough	Excursion Inlet Hydro Project Phases I & II	HYDRO	Southeast Energy Region		93,593	93,593	78,384	15,209
R2	RE20277	Inside Passage Electric Company	Angoon Heat Recovery	HEAT RECOV	Southeast Energy Region	Closed	545,934	-	-	-
R3	7030019	Inside Passage Electric Cooperative	Hoonah-IPEC Hydro Project	HYDRO	Southeast Energy Region		850,000	850,000	778,350	71,650
R4	7040036	Inside Passage Electric Cooperative	Hoonah Heat Recovery Project	HEAT RECOV	Southeast Energy Region	Closed	475,000	472,964	472,964	-
R4	7040073	Inside Passage Electric Cooperative	Reconnaissance Study of Tenakee Inlet Geothermal Resource	GEOTHERM	Southeast Energy Region	Closed	599,200	568,730	568,730	-
R6	7060922	Inside Passage Electric Cooperative	Gartina Falls Hydroelectric Project	HYDRO	Southeast Energy Region		6,694,000	6,694,000	-	6,694,000
R1	2195441	Ketchikan Public Utility	Whitman Lake Hydro Construction (reconnaissance)	HYDRO	Southeast Energy Region	Closed	1,300,000	1,300,000	1,300,000	-
R5	RE50825	Kootznoowoo Incorporated	Thayer Lake Hydropower Development Transmission Project	HYDRO	Southeast Energy Region		7,000,000	-	-	-
R4	7040038	Kootznoowoo, Inc.	Thayer Lake Hydropower Project	HYDRO	Southeast Energy Region		1,060,500	1,060,500	-	1,060,500
R1	2195414	Kwaan Electric Transmission Intertie Cooperative	Kake-Petersburg Intertie Final Design	TRANS	Southeast Energy Region		2,990,000	2,990,000	948,858	2,041,142
R1	2195429	Metlakatla Indian Community	Metlakatla-Ketchikan Intertie Design and Permitting	TRANS	Southeast Energy Region		820,000	820,000	495,635	324,365
R4	7040068	Metlakatla Indian Community	Melakatla-Ketchikan Intertie	TRANS	Southeast Energy Region		1,180,000	1,180,000	-	1,180,000

Alaska Energy Authority
Renewable Energy Fund Grants
Rounds 1 through 6
As of February 06, 2014

Rnd	Award No.	Grantee Name	Grant Title	Type	Region	Grant Status	Original Appropriation	Grant Budget	Grant Expenditures	Remaining Balance
R4	7040074	Metlakatla Indian Community	Triangle Lake Hydroelectric Project Feasibility	HYDRO	Southeast Energy Region		500,000	500,000	-	500,000
R2	2195469	Southeast Island School District	Thorne Bay Wood Boiler	BIOMASS	Southeast Energy Region		178,179	178,179	178,179	-
R4	7040037	Southeast Island School District	Thorne Bay School Wood Fired Boiler Project	BIOMASS	Southeast Energy Region		300,000	300,000	164,327	135,673
R1	2195424	Yakutat Power	Yakutat Biomass Feasibility	BIOMASS	Southeast Energy Region		249,600	249,600	249,600	-
					Southeast Energy Region Total		**51,863,429**	**43,219,157**	**20,471,903**	**22,747,254**
R1	2195442	University of Alaska-Anch	Statewide Hydrokinetic Feasibility Study	OCEANRIVER	Statewide		565,439	565,439	555,004	10,435
					Statewide Total		**565,439**	**565,439**	**555,004**	**10,435**
R1	2195417	Alaska Gateway School District	Tok Wood Heating Construction	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	3,245,349	3,245,349	3,245,349	-
R2	2195476	Alaska Power and Telephone	Tok Wind Resource Assessment	WIND	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	130,000	52,232	52,232	-
R4	7040045	Alaska Power and Telephone	Upper Tanana Biomass CHP Project	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		380,000	362,883	362,883	-
R6	7060925	Alaska Power and Telephone Company	Upper Tanana Biomass CHP Project	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		400,000	400,000	-	400,000
R3	RE30438	Alaska Power Company	Yerrick Creek Hydroelectric Project	HYDRO	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	4,000,000	-	-	-
R4	7040049	Alaska Village Electric Cooperative	Kaltag Solar Construction	SOLAR	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	90,000	90,000	90,000	-
R2	2195451	Chalkyitsik Village Council	Chalkyitsik Biomass Central Heating Conceptual Design	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	32,500	32,500	32,500	-
R6	7060927	City of Galena	Galena Community Wood Heat Project	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		317,788	317,788	31,778	286,010
R3	7030022	City of Tanana	City-Tribe Biomass Energy Conservation	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	412,642	412,641	412,641	-
R1	2195405	Gwitchyaa Zhee Utility Company	Fort Yukon Central Wood Heating Design	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		210,000	210,000	88,900	121,100
R3	RE30445	Gwitchyaa Zhee Utility Company	District Wood Heating in Fort Yukon	HEAT RECOV	Yukon-Koyukuk/Upper Tanana Energy Region		2,318,255	-	-	-
R5	7050821	Huslia Traditional Council	Huslia Water System & Clinic Wood Boiler Project	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		50,000	50,000	2,484	47,516
R1	RE10054	Interior Regional Housing Authority	Galena Wood Heating Construction	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	382,779	-	-	-
R4	7040048	Interior Regional Housing Authority	Feasibility Assessments for Wood Heating in Interior Alaska Commur	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	154,477	120,870	120,870	-
R5	7050820	Interior Regional Housing Authority	Design & Construction of Wood Heating Projects in Interior Alaska Cc	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		1,215,224	1,215,224	26,003	1,189,221
R6	7060933	Interior Regional Housing Authority	Biomass Feasibility Studies in Public Facilities	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		168,959	168,959	12,675	156,284
R4	7040047	Louden Tribal Council	Renewable Energy Feasibility Study	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		100,000	100,000	89,628	10,372
R1	2195403	McGrath Light & Power Company	McGrath Central Wood Heating Proj Dev Ph III	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		322,000	322,000	131,719	190,281
R1	2195416	McGrath Light & Power Company	McGrath Heat Recovery Construction	HEAT RECOV	Yukon-Koyukuk/Upper Tanana Energy Region		712,415	712,415	697,434	14,981
R2	2195459	McGrath Traditional Council	McGrath Biomass Feasibility	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	34,740	25,736	25,736	-
R5	7050881	Native Village of Tanacross dba Tanacross Village	Tanacross Woody Biomass Community Facility Space Heating Project	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region		420,000	420,000	191,993	228,008
R1	2195421	TDX Power, Inc.	Manley Hot Springs Geothermal Plant	GEOTHERM	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	215,000	27,876	27,876	-
R4	7040046	University of Fairbanks	Organic Rankine Cycle Field Testing	HEAT RECOV	Yukon-Koyukuk/Upper Tanana Energy Region		472,787	472,787	146,904	325,883
R2	2195452	Venetie Village Council	Venetie District Heating Conceptual Design	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	32,500	32,500	32,500	-
R1	2195402	Yukon River Inter-Tribal	Ruby Hydrokinetic	OCEANRIVER	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	446,950	189,335	189,335	-
R2	2195474	Yukon-Koyukuk School District	Biomass Hydronic Heating	BIOMASS	Yukon-Koyukuk/Upper Tanana Energy Region	Closed	16,550	12,710	12,710	-
					Yukon-Koyukuk/Upper Tanana Energy Region Total		**16,280,915**	**8,993,806**	**6,024,151**	**2,969,655**
					Grand Total	*	**237,503,904**	**195,234,716**	**132,651,371**	**62,583,345**

* $10 million in funds were re-appropriated from rounds 1 through 3 for round 4 projects.

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

Photos courtesy of TDX Power

ALASKA ENERGY AUTHORITY

Alaska Energy Authority
813 W Northern Lights Blvd
Anchorage, AK 99503
(907) 771-3000
www.akenergyauthority.org

ALASKA ENERGY AUTHORITY

Renewable Energy Fund

Status Report and Round VII Recommendations

Jan. 28, 2014

Introduction

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

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

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

This 2014 status report has two parts and a separate appendix

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

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

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

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

Additional Information

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

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

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

Heat Recovery System installation - Hoonah
Alaska Energy Authority

Round VII Standard Applications

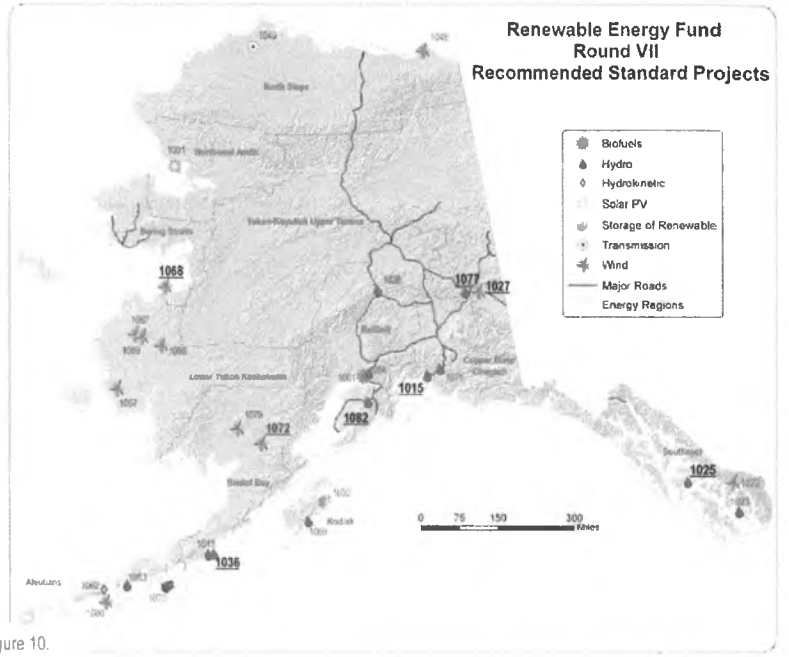


Figure 10.

Recommended funding by type

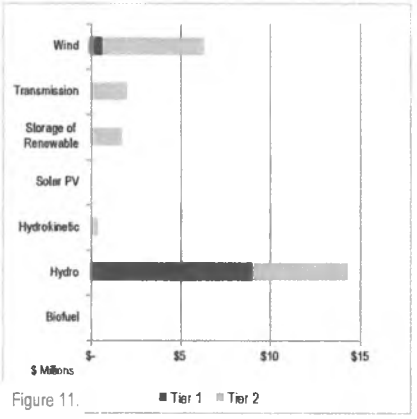


Figure 11.

Recommended funding by region

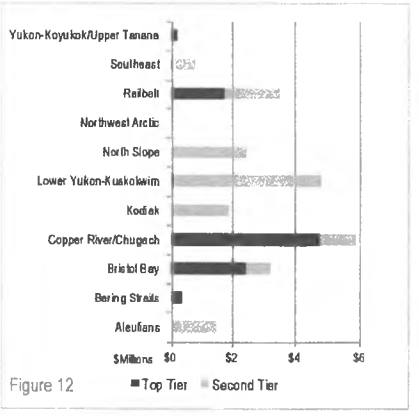


Figure 12

Round VII Heat Applications

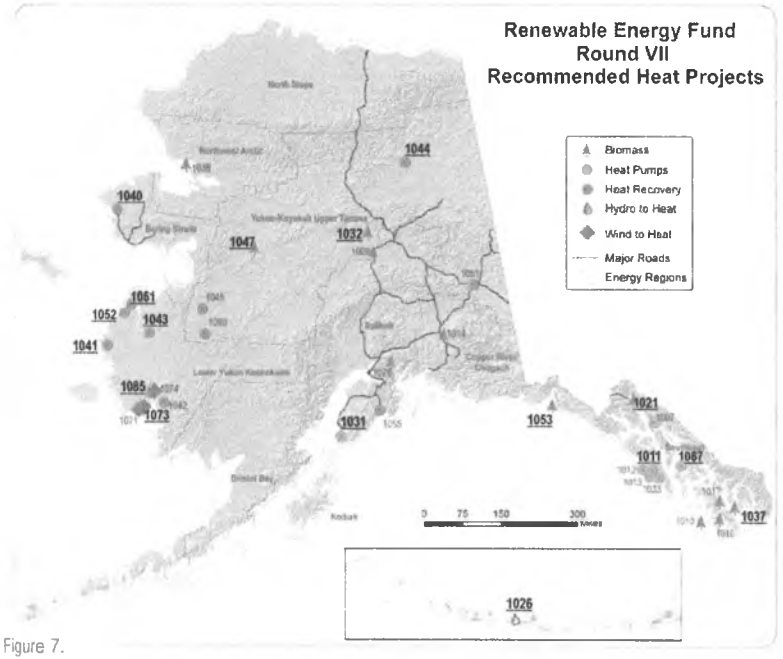


Figure 7.

Recommended funding by type

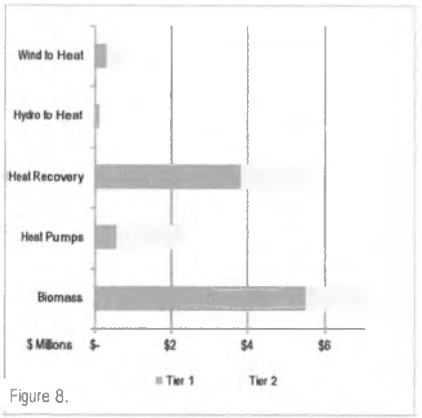


Figure 8.

Recommended funding by region

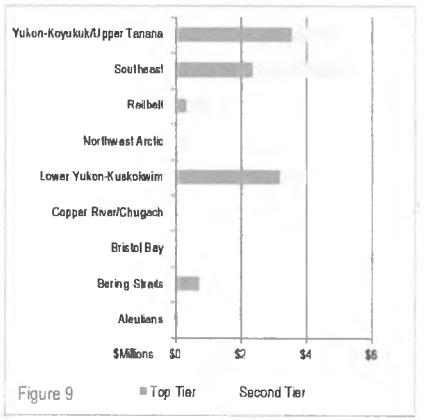


Figure 9

Progress on Funded Projects

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

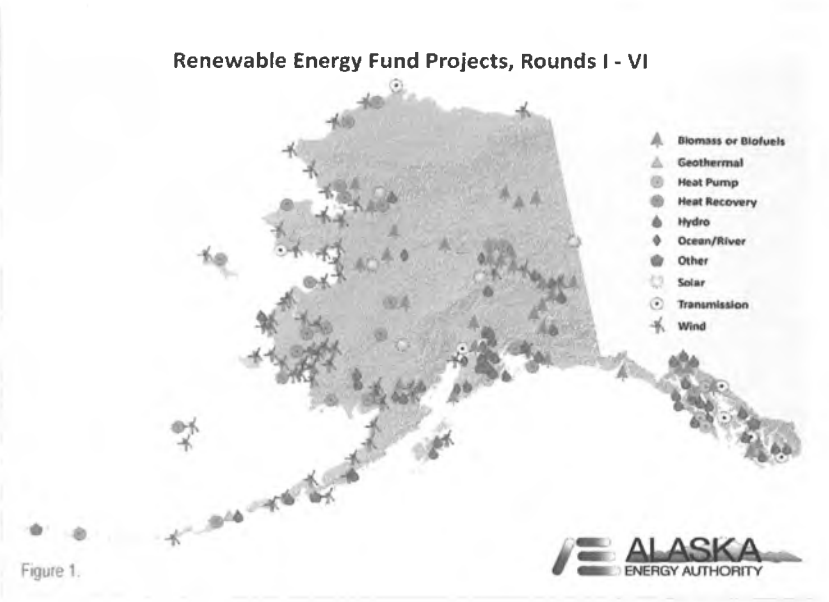


Figure 1.

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

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

Funded Grants by Energy Region Rounds I-VI

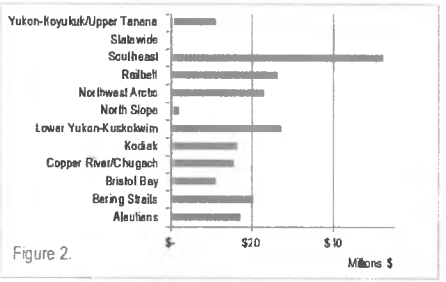


Figure 2.

Funded Grants by Energy Type Rounds I-VI

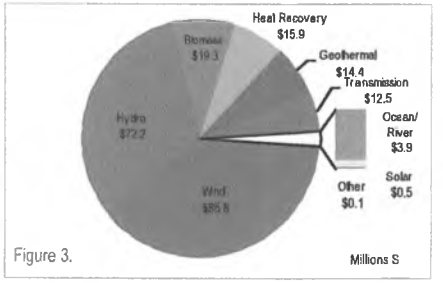


Figure 3.

Progress on Funded Projects

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

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

Scheduled Grant Completion

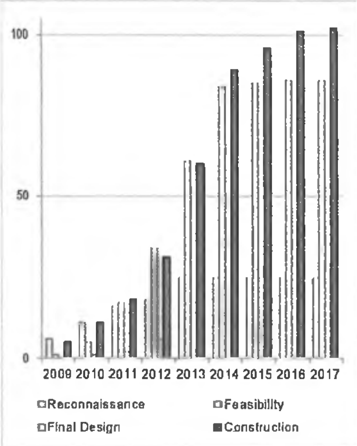


Figure 4.

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

Grant and Funding Summary as of 01/14/14

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

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

Table 1.

for Heat and Standard Applications by Energy Region

Fuel Price Sigal	1. Cost of Energy (30)	2. Match (15)	3. Tech & Econ Feas (20)	4. Readiness (5)	5. Benefit (15)	6. Local Supp (5)	7. Sustainability (5)	Total (100)	Statewide Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recommend	Early	Recommend Funding	Cumulative Funding
Stage 3 Review Scores (max)										Project Cost				Recommendation			
	6.78	15.00	19.87	5.00	12.88	5.00	5.00	68.52	15	$21,772,523	$3,453,928	$13,591,228	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	$362,835	$318,289	$411,835	DesignConstructi	FULL		$318,289	$2,078,308
									15				Construction	FULL**		$1,693,901	$3,772,209
	6.61	15.00	14.63	2.00	11.25	4.00	3.83	57.33	39	$2,350,000	$35,750	$35,750	Recon	FULL		$35,750	$3,807,959
	9.81	9.00	12.20	1.50	11.63	5.00	3.00	52.14	51	$8,340,000	$54,000	$6,000	Recon	PARTIAL		$35,000	$3,842,959
$4.08	17.76	7.00	10.83	3.00	1.00	5.00	4.00	48.69	56	$3,244,225	$367,965	$25,800	Design	FULL	Y	$367,965	$4,210,924
	6.78	15.00	12.30	0.00	8.25	2.00	4.00	48.33	57	TBD	$150,000	$100,000	Recon	PARTIAL		$50,000	$4,260,924
$3.71	16.23	11.00	8.73	3.00	0.75	2.00	4.17	45.88	60	$152,897	$127,065	$25,803	DesignConstructi	PARTIAL SP		$97,000	$4,357,924
	4.59	9.00	11.53	4.50	4.88	5.00	5.00	44.50	62	$250,000	$225,000	$25,000	Construction	FULL		$225,000	$4,582,924
										$1,940,558	$1,560,558	$120,000	Construction	Did Not Pass Stage 2			
										$31,500,000	$213,750	$11,250	Feasibility	Did Not Pass Stage 2			
										$65,912,579	$6,586,291	$14,352,645				$4,582,924	
$3.59	15.71	15.00	16.10	5.00	10.75	5.00	4.83	72.39	6	$232,620	$232,620	$1,021,393	DesignConstructi	FULL		$232,620	$232,620
$5.85	25.59	7.00	14.77	2.00	12.00	4.00	4.00	69.36	13	$1,423,292	$208,073	$20,000	Design	PARTIAL	Y	$175,000	$407,620
$3.59	15.71	11.00	16.87	3.67	13.00	5.00	3.50	68.74	14	$1,957,261	$1,412,888	$353,222	Construction	PARTIAL SP		$620,000	$1,027,620
	27.14	7.00	14.80	2.00	11.63	2.00	3.83	68.20	17	$300,000	$275,000	$25,000	ReconFeasibility	PARTIAL SP		$80,000	$1,107,620
$4.00	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	[illegible]	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	$286,169	$49,290	DesignConstructi	PARTIAL SP	Y	$103,000	$2,448,023
$3.80	16.63	11.00	15.33	3.00	9.75	5.00	4.00	64.71	27	$1,058,775	$940,950	$177,825	Construction	FULL SP		$940,950	$3,388,973
$4.20	18.38	7.00	15.57	3.00	13.50	3.00	3.50	63.95	29	$627,900	$583,900	$44,000	DesignConstructi	PARTIAL SP	Y	$125,000	$3,513,973
	4.47	15.00	16.23	3.00	11.25	5.00	6.00	59.95	37	$13,391,869	$4,000,000	$8,813,869	DesignConstructi	PARTIAL SP		$560,488	$4,074,461
$3.59	15.71	15.00	12.23	5.00	1.75	5.00	4.83	59.53	38	$230,200	$230,200	$192,891	DesignConstructi	FULL		$230,200	$4,304,661
$3.80	16.63	11.00	13.27	3.00	6.38	2.00	3.50	55.77	40	$585,450	$492,850	$82,550	DesignConstructi	PARTIAL SP	Y	$125,000	$4,429,661
$3.59	15.71	15.00	10.97	4.00	0.50	5.00	4.17	55.34	42	$388,838	$373,838	$825,000	DesignConstructi	PARTIAL SP	Y	$56,841	$4,486,502
	4.47	7.00	18.07	2.00	13.13	5.00	3.67	53.33	47	$170,583	$158,771	$11,812	ReconFeasibility	FULL		$158,771	$4,645,273
$4.12	18.03	11.00	9.87	4.00	0.63	4.00	4.50	52.02	52	$825,000	$660,000	$165,000	DesignConstructi	FULL		$660,000	$5,305,273
$3.59	15.71	9.00	11.53	5.00	0.75	5.00	4.83	51.83	53	$962,984	$849,984	$113,000	DesignConstructi	FULL		$849,984	$6,155,257
										$3,562,772	$62,272	$3,500	Recon	Did Not Pass Stage 2			
										$825,000	$700,000	$125,000	ReconFeasibility	Did Not Pass Stage 2			
										$51,000,000	$4,000,000	$4,000,000	DesignConstructi	Not Recommended			
										$14,500,000	$213,538	$10,000	Feasibility	Not Recommended			
										$14,510,598	$9,281,615	$0	DesignConstructi	Not Recommended			
										$48,000,000	$3,378,500	$0	Feasibility	Not Recommended			
										$157,263,491	$29,578,567	$16,170,306				$6,155,257	
$8.50	35.00	6.00	17.03	4.00	11.25	4.00	3.33	80.62	3	$204,426	$198,474	$11,908	DesignConstructi	FULL		$198,474	$198,474
$6.03	26.34	6.00	17.60	3.83	14.13	5.00	4.50	77.40	4	$3,144,200	$3,096,898	$47,302	Construction	FULL SP		$3,096,898	$3,295,372
	21.46	11.00	17.00	2.50	12.50	2.00	4.17	70.63	10	$148,800	$119,000	$29,800	Feasibility	FULL		$116,000	$3,411,372
	21.46	15.00	11.67	3.00	11.25	5.00	3.17	70.54	11	$19,000,000	$8,000,000	$11,500,000	Construction	PARTIAL		$75,000	$3,489,372
$5.00	21.88	15.00	13.87	3.00	5.38	5.00	3.17	67.29	22	$403,550	$274,750	$278,800	DesignConstructi	FULL SP		$274,750	$3,764,122
$5.00	21.88	6.00	16.03	3.83	9.00	4.00	3.50	64.25	28	$332,590	$322,903	$19,374	DesignConstructi	FULL		$322,903	$4,087,025
$7.15	31.28	6.00	11.53	4.00	1.25	5.00	2.83	61.90	35	$497,773	$497,773	$14,933	DesignConstructi	FULL		$497,773	$4,584,798
$3.79	16.58	6.00	11.97	4.00	3.38	2.00	4.00	47.92	59	$629,000	$625,000	$4,000	DesignConstructi	FULL		$625,000	$5,209,798
										$24,360,341	$11,134,798	$11,906,117				$5,209,798	
										$524,085,270	$93,011,953	$57,294,853				$41,593,701	

Kotzebue Electric Association Wind Farm
Alaska Energy Authority

Renewable Energy Fund Round VII—Recommendations and Funding

Count	Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Resource	Total Stage 2 Score	Base Case BCR	Applicant BCR	Cost of Energy ($/kWh)
1	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro	94.33	7.11	0.89	$0.15
2	H	Railbelt	1091	Seldovia House Ground Source Heat Pump Project	Cook Inlet Housing Authority	Government Entity	Heat Pumps	56.17	1.12	0.94	$0.20
3	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro				
4	S	Railbelt	1084	Juniper Creek Hydroelectric Reconnaissance Study	Ram Valley, LLC	IPP	Hydro	73.17	2.48	1.48	$0.15
5	S	Railbelt	1029	Carlo Creek Hydroelectric Project Reconnaissance Study	Native Village of Cantwell	Government Entity	Hydro	81.00	1.90	1.89	$0.22
6	H	Railbelt	1009	Nenana Collaborative Biomass Heating System Project	Nenana School District	Government Entity	Biomass	54.67	0.65	1.11	$0.22
7	S	Railbelt	1081	Waste to Energy Reconnaissance Study	Chugach Electric Association, Inc.	Utility	Biomass	61.50	1.31	1.34	$0.15
8	H	Railbelt	1078	Chickaloon Solar Thermal and Biomass Project	Chickaloon Native Village	Government Entity	Biomass	43.67	0.74	0.78	$0.15
9	H	Railbelt	1055	Alaska SeaLife Center Heat Recovery Project	City of Seward	Local Government	Heat Recovery	57.67	1.13	4.41	$0.11
10	S	Railbelt	1002	Ponce let Kinetics RHK100 Prototype Demonstration	Whitestone Power and Communications	IPP	Hydrokinetic	39.17	0.16	0.16	$0.22
11	S	Railbelt	1029	Jack River Hydroelectric Project Feasibility Study	Native Village Of Cantwell	Government Entity	Hydro	35.33	0.79	1.21	$0.22
12	10	Railbelt Total									
1	H	Southeast	1011	Sitka Centennial Hall Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	80.50	1.69	3.58	$0.06
2	H	Southeast	1087	Kake Community Energy	Organized Village of Kake	Government Entity	Biomass	73.83	1.82	1.19	$0.63
3	H	Southeast	1007	Ketchikan Gateway Borough Biomass Heating Project	Ketchikan Gateway Borough	Local Government	Biomass	94.33	2.15	0.24	$0.10
4	S	Southeast	1025	Gunruk Creek Hydroelectric Feasibility Study	Inside Passage Electric Cooperative	Utility	Hydro	73.00	4.28	0.00	$0.67
5	H	Southeast	1021	Haines Borough Municipal Buildings Biomass Project	Haines Borough	Local Government	Biomass	88.50	1.72	1.79	$0.22
6	H	Southeast	1053	Yakutat Biomass District Heating Loop	City and Borough of Yakutat	Local Government	Biomass	67.67	1.45	2.31	$0.50
7	H	Southeast	1017	Southeast Island School District Wood Boilers	Southeast Island School District	Government Entity	Biomass	76.67	1.47	2.32	$0.41
8	H	Southeast	1016	Hydaburg Schools Wood Fired Boiler Project	Hydaburg City School District	Government Entity	Biomass	77.83	1.91	2.45	$0.24
9	S	Southeast	1023	Swan Lake Reservoir Expansion Project	The Southeast Alaska Power Agency	Government Entity	Hydro	91.17	4.07	4.07	$0.10
10	H	Southeast	1013	Sitka Kettleson Library Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	91.17	0.91	1.87	$0.09
11	H	Southeast	1010	Craig High School Wood Heat Conversion	Craig City School District	Government Entity	Biomass	66.33	1.12	1.54	$0.29
12	H	Southeast	1033	Sitka Sea Water Source Heat Pump Project	City and Borough of Sitka		Heat Pumps	54.83	0.50	0.52	$0.08
13	S	Southeast	1022	SEAPA Wind Resource Assessment Phase I and II	The Southeast Alaska Power Agency	Government Entity	Wind	90.33	1.84		$0.10
14	H	Southeast	1057	Mendenhall Valley Library Geothermal HVAC System	City & Borough of Juneau	Local Government	Heat Pumps	49.33	0.86	0.74	$0.13
15	H	Southeast	1012	Sitka Wastewater Treatment Plant Effluent Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	57.67	0.73	1.06	$0.09
16	S	Southeast	1019	Survey Creek Hydroelectric Project	Edna Bay Community	Local Government	Hydro	39.33	1.48	1.37	N/A
17	S	Southeast	1024	Walker Lake Hydro Project Feasibility	Tlingit-Haida Regional Electrical Authority	Utility	Hydro	39.00	1.05		$0.62
18	S	Southeast	1003	Mahoney Lake Hydroelectric Phase III and IV	City of Saxman	Local Government	Hydro		1.79	6.91	$0.10
19	S	Southeast	1020	Excursion Inlet Hydro Project Feasibility and Conceptual Des	Haines Borough	Local Government	Hydro		0.09	3.83	N/A
20	S	Southeast	1034	Metlakatla to Ketchikan Intertie	Metlakatla Indian Community	Government Entity	Transmission		1.77	1.28	$0.10
21	S	Southeast	1035	Feasibility Study of Tenakee Inlet Geothermal Resource	Inside Passage Electric Cooperative	Utility	Geothermal		0.44	1.24	$0.66
22	21	Southeast Total									
1	H	Yukon-Koyukuk/Upper Tan	1048	Venetie Clinic Heat Recovery	Village of Venetie	Government Entity	Heat Recovery	85.17	1.69	2.45	$0.90
2	H	Yukon-Koyukuk/Upper Tan	1047	Galena Community Wood Heat Project	City of Galena	Local Government	Biomass	88.00	4.31	3.90	$0.58
3	S	Yukon-Koyukuk/Upper Tan	1077	Chisana Mountain Wind Feasibility Project	Alaska Power Company	Utility	Wind	85.00	2.55		$0.48
4	S	Yukon-Koyukuk/Upper Tan	1077	Yerrick Creek Hydroelectric Project	Native Village of Tetlin	Government Entity	Hydro	58.33	4.23	0.84	$0.48
5	H	Yukon-Koyukuk/Upper Tan	1032	Biomass Heat for Minto Community Buildings	Village of Minto	Government Entity	Biomass	69.33	1.02	1.37	$0.58
6	H	Yukon-Koyukuk/Upper Tan	1045	Grayling Heat Recovery System	City of Grayling	Government Entity	Heat Recovery	80.17	1.47	2.02	$0.58
7	H	Yukon-Koyukuk/Upper Tan	1060	Holy Cross Water System Heat Recovery	City of Holy Cross	Government Entity	Heat Recovery	57.67	0.55	0.74	$0.53
8	H	Yukon-Koyukuk/Upper Tan	1051	AGSD Extension of Heating Loop	Alaska Gateway School District	Government Entity	Heat Recovery	56.83	0.67	1.45	$0.40
9	8	Yukon-Koyukuk/Upper Tanana Total									
10	86	Grand Total									

Notes

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

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

** #1082 Stetson Creek Diversion Cooper Lake Dam Facilities Project is recommended by AEA staff to be fully funded. If REF7 allocations are greater than the Governor's budget of $20m, the REFAC recommends funding the remaining grant requested funding of $1,693,901.

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

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

S = Standard application, applications that deliver electricity, energy storage, bensmission 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.

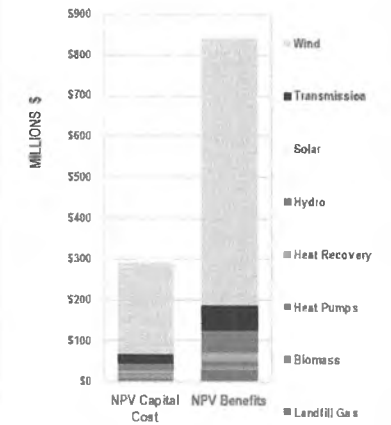


Figure 5.

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.

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

Actual and Projected 2009—2016

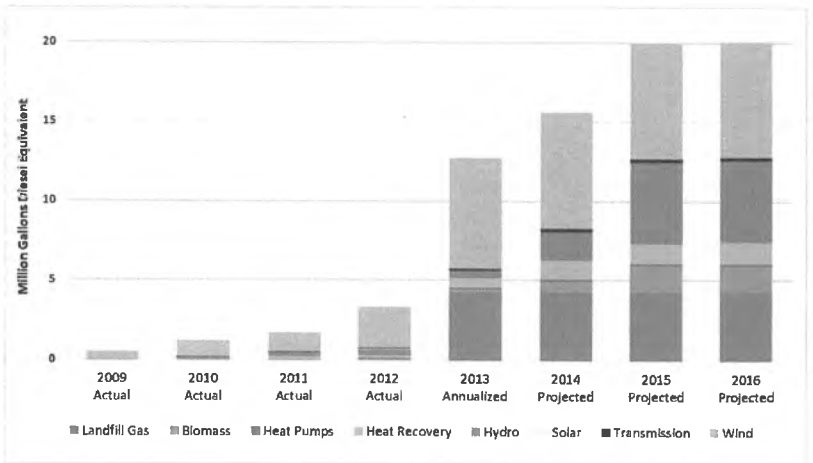


Figure 6.

Performance of Renewable Energy Fund Projects in Operation

Technology Type	Grantee	Project Name	Operation Start Date	2013 Energy Production Electrical (MWh)	2013 Energy Production Thermal (MMBtu)	2013 Fuel Displaced Diesel (Galx1000)	2013 Fuel Displaced Value ($ x 1000)
LANDFILL GAS	Municipality of Anchorage	Anchorage Landfill Gas Electricity	2012 Aug	-	-	-	$ -
HYDRO	City of Atka	Chuniisax Creek Hydroelectric	2012 Dec	-	-	-	$ -
HYDRO	Cordova Electric Cooperative	Humpback Creek Hydroelectric Project Rehabilitation	2011 Jul	1,563	-	114.9	$ 410.3
HYDRO	Gustavus Electric Company	Falls Creek Hydroelectric Construction	2009 Jul	1,933	-	138.1	$ 483.3
SOLAR	Alaska Village Electric Cooperative	Kaltag Solar Construction	2012 Oct	-	-	-	$ -
TRANSMISSION	Alaska Power and Telephone	North Prince of Wales Island Intertie Project	2011 Sep	311	-	16.4	$ 67.0
TRANSMISSION	Nome Joint Utility System	Nome Banner Peak Wind Farm Transmission	2010 Oct	955	-	53.9	$ 151.6
WIND	Alaska Environmental Power	Delta Area Wind Turbines	2010 Sep	1,641	-	95.9	$ 256.1
WIND	Alaska Village Electric Cooperative	Toksook Wind Farm	2009 Aug	560	-	37.7	$ 129.1
WIND	Alaska Village Electric Cooperative	Mekoryuk Wind Farm	2010 Nov	239	-	13.7	$ 49.5
WIND	Alaska Village Electric Cooperative	Quinhagak Wind Farm	2010 Nov	409	-	28.9	$ 105.6
WIND	Alaska Village Electric Cooperative	Emmonak/Alakanuk Wind	2011 Sep	63	-	4.5	$ 17.7
WIND	Alaska Village Electric Cooperative	Shaktoolik Wind Construction	2012 Apr	-	-	-	$ -
WIND	Golden Valley Electric Association	GVEA Eva Creek Wind Turbine Purchase	2012 Oct	-	-	-	$ -
WIND	Kodiak Electric Association, Inc.	Pillar Mountain Wind Project	2010 Sep	12,448	-	870.7	$ 2,873.3
WIND	Kotzebue Electric Association	Kotzebue High Penetration Wind-Battery-Diesel Hybrid	2012 May	-	-	-	$ -
WIND	Nome Joint Utility System	Banner Peak Wind Farm Expansion	2013 Jul	-	-	-	$ -
SubTotal Electric Only				20,122	-	1,375	$ 4,543.[illegible]
WIND	Aleutian Wind Energy	Sand Point Wind	2011 Aug	196	-	14.3	$ 64.9
WIND	Kwigillingok Power Company	Kwigillingok High Penetration Wind-Diesel Smart Grid	2012 Feb	-	-	-	$ -
WIND	Puvurnaq Power Company	Kongiganak High Penetration Wind-Diesel Smart Grid	2010 Dec	88	-	6.6	$ 30.1
WIND	Tuntutuliak Comm Svcs Assoc	Tuntutuliak High Penetration Wind-Diesel Smart Grid	2013 Jan	-	-	-	$ -
WIND	Unalakleet Valley Electric Co	Unalakleet Wind Farm	2009 Dec	958	-	58.2	$ 211.2
SubTotal Electric and Heat				1,242	-	79	$ [illegible]
BIOMASS	Alaska Gateway School District	Tok Wood Heating	2010 Oct	-	3,217	24.4	$ 92.0
BIOMASS	Chilkoot Indian Association	Haines (Chilkoot) Central Wood Heating System Construction	2011 Oct	-	-	-	$ -
BIOMASS	Delta/Greely School District	Delta Junction Wood Chip Heating	2011 Sep	-	-	-	$ -
BIOMASS	Gulkana Village Council	Gulkana Central Wood Heating	2010 Oct	-	780	5.9	$ 23.5
BIOMASS	Native Village of Eyak	Cordova Wood Processing Plant	2011 Dec	-	1,500	11.4	$ 42.0
HEAT PUMPS	City and Borough of Juneau	Juneau Airport Ground Source Heat Pump	2011 May	-	5,117	37.1	$ 130.5
HEAT PUMPS	City and Borough of Juneau	Juneau Aquatic Ctr. Ground Source Heat Pump	2011 Apr	-	-	-	$ -
HEAT PUMPS	City of Seward	Alaska Sealife Center Ph II Seawater Heat Pump Project	2011 Nov	-	-	-	$ -
HEAT RECOVERY	Golden Valley Electric Association	North Pole Heat Recovery	2009 Nov	-	5,249	61.5	$ 171.5
HEAT RECOVERY	Inside Passage Electric Cooperative	Hoonah Heat Recovery Project	2012 Aug	-	-	-	$ -
HEAT RECOVERY	McGrath Light & Power Company	McGrath Heat Recovery	2010 May	-	2,896	23.0	$ 156.7
HEAT RECOVERY	City and Borough of Wrangell	Wrangell Hydro Based Electric Boilers	2011 Feb	-	6,889	66.0	$ 230.3
SOLAR	Golden Valley Electric Association	McKinley Village Solar Thermal	2010 Jun	-	134	1.8	$ 7.1
SubTotal Heat Only					[illegible]	[illegible]	$ 853.6
TOTAL				21,364	25,782	1,684.9	$ 5,703.3

Notes

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

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

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

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

Data for the following projects in operation is not reported:

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

for Heat and Standard Applications by Energy Region

Table 5.

Fuel Price ($/gal)	Stage 3 Review Scores (max): 1 Cost of Energy (25)	2 Match (15)	3 Tech & Econ Feas (20)	4 Readiness (5)	5 Benefit (15)	6 Local Supt (5)	7 Sustainability (5)	Total (100)	Statewide Rank	Project Cost: Project Cost	Grant Requested	Match Offered	Phase	Recommendation: AEA Recommend	[illegible]	Recommend Funding	Cumulative Funding
$7.65	33.47	11.00	16.57	5.00	12.00	3.00	4.00	85.04	1	$135,254	$114,965	$20,289	Construction	FULL		$114,965	$114,965
	12.26	15.00	14.23	2.83	7.03	5.00	5.00	61.95	34	$5,500,000	$800,000	$1,900,000	Construction	FULL SP		$800,000	$914,965
	22.45	12.00	8.57	7.50	8.75	5.00	2.50	54.77	43	$5,000,000	$428,646	$137,870	Feasibility	FULL		$428,646	$1,343,611
	22.55	5.00	9.50	3.00	4.125	2.00	4.00	54.18	45	$1,397,403	$1,256,403	$141,000	DesignConstructi	PARTIAL SP	Y	$200,000	$1,543,611
	22.45	5.00	9.27	2.50	0.38	4.00	1.67	49.25	55	$52,050	$47,050	$5,000	Feasibility	FULL SP		$47,050	$1,590,661
										$12,400,000	$180,000	$0	Feasibility	Did Not Pass Stage 2			
										$24,484,707	$2,687,064	$2,204,159				$1,590,661	
	24.42	7.00	16.67	3.00	11.63	5.00	4.50	72.21	7	$3,946,050	$342,000	$98,000	Design	FULL		$342,000	$342,000
$5.39	23.14	6.00	16.60	5.00	10.25	4.00	3.17	68.16	[illegible]	$[illegible]53,013	$731,372	$[illegible]	DesignConstructi	FULL		$731,372	$1,073,372
										$4,539,063	$1,073,372	$39,945				$1,073,372	
	16.26	11.00	[illegible]	5.00	11.00	5.00	3.83	80.36	2	$5,390,146	$2,352,653	$3,038,406	Construction	FULL		$2,352,653	$2,352,653
	35.00	13.00	9.40	2.50	[illegible]	3.00	3.17	68.07	25	$110,000	$80,000	$30,000	Feasibility	FULL SP		$80,000	$2,432,653
	22.09	6.00	10.47	3.83	4.13	2.00	3.17	51.68	54	$2,568,000	$308,000	$10,000	Design	FULL SP	Y	$308,000	$2,738,653
	20.91	0.00	10.43	3.50	4.88	0.00	4.00	43.62	63	BLANK	$1,375,000	$0	Design	PARTIAL SP		$500,000	$3,238,653
										$1,940,379	$1,843,379	$97,000	[illegible]	Not Recommended			
										$7,274,213	$159,000	$10,000	ReconFeasibility	Not Recommended			
										$235,000	$230,000	$5,000	DesignConstructi	Not Recommended			
										$2,000,000	$800,000	$120,000	ReconFeasibility	Not Recommended			
										$15,464,741	$7,146,032	$3,308,496				$3,238,653	
	12.44	15.00	17.87	4.00	12.13	3.00	5.00	69.43	19	$46,000,000	$5,914,491	$[illegible]	Construction	Partial-REFAC++		$4,764,652	$4,764,652
									16				Construction	FULL ++		$1,149,839	$5,914,491
$4.17	18.24	6.00	12.90	3.00	6.25	4.00	3.00	53.39	46	$278,150	$267,150	$11,000	DesignConstructi	PARTIAL SP	Y	$125,000	$6,039,491
	12.44	11.00	9.17	3.00	6.38	5.00	1.33	48.32	58	$2,250,000	$170,000	$30,000	Feasibility	FULL		$170,000	$6,209,491
										$1,660,000	$1,400,000	$0	DesignConstructi	Not Recommended			
										$53,979,150	$7,751,641	$5,955,491				$6,209,491	
	25.21	7.00	11.27	2.00	5.38	5.00	4.50	60.35	36	$8,155,000	$1,000,500	$57,500	Design	PARTIAL		$400,000	$400,000
	8.37	15.00	13.37	3.50	3.25	[illegible]	[illegible]	[illegible]	48	$[illegible]	$[illegible]	$1,900,000	Construction	PARTIAL SP		$1,470,548	$1,870,548
										$1,300,000	$81,000	$300	FeasibilityDesign	Did Not Pass Stage 2			
										$13,255,000	$[illegible]	$1,957,800				$1,870,548	
$4.38	19.16	13.00	17.53	3.00	12.50	5.00	3.50	73.69	5	$603,000	$450,000	$153,000	Construction	FULL		$450,000	$450,000
$6.80	29.75	6.00	16.27	3.83	10.13	3.00	3.00	71.98	8	$469,311	$455,642	$13,669	DesignConstructi	FULL		$455,642	$905,642
$5.77	25.24	6.00	17.53	4.00	12.50	3.00	2.67	70.94	9	$689,251	$689,251	$20,677	[illegible]	FULL SP		$689,251	$1,594,893
	23.80	7.00	15.83	2.50	11.83	5.00	4.50	70.76	12	$4,833,000	$123,500	$8,500	Feasibility	FULL		$123,500	$1,718,393
$4.60	20.13	6.00	17.03	3.83	11.25	5.00	4.17	67.41	21	$757,299	$735,242	$22,057	DesignConstructi	FULL		$735,242	$2,453,635
$6.21	27.17	6.00	14.83	2.83	12.38	0.00	3.00	66.21	24	$320,456	$311,456	$9,000	Construction	FULL SP		$311,456	$2,765,091
$4.30	18.81	6.00	17.07	3.00	12.50	5.00	2.83	65.21	26	$558,814	$558,814	$16,765	DesignConstructi	FULL SP		$558,814	$3,323,905
	35.00	7.00	10.80	2.00	4.50	2.00	1.67	62.77	30	$8,000,000	$375,000	$25,000	ReconFeasibility	PARTIAL		$75,000	$3,398,905
	21.60	9.00	13.00	5.00	4.50	5.00	4.33	62.43	31	$4,782,528	$4,274,575	$507,953	Construction	FULL SP		$4,274,575	$7,673,480
$5.95	26.03	6.00	12.83	2.83	10.00	2.00	2.50	62.20	32	$302,737	$293,737	$9,000	Construction	FULL SP		$293,737	$7,967,217
$3.88	17.02	6.00	14.03	5.00	4.50	5.00	3.83	55.38	41	$297,408	$288,745	$8,663	DesignConstructi	FULL		$288,745	$8,255,962
$6.80	29.75	6.00	9.33	2.83	2.13	2.00	2.50	54.64	44	$250,817	$250,817	$0,000	Construction	FULL SP		$250,817	$8,506,779
	22.05	7.00	10.43	2.50	1.10	5.00	3.83	52.32	48	$3,214,875	$353,400	$18,600	Design	FULL SP		$353,400	$8,860,179
										$232,430	$225,660	$6,770	DesignConstructi	Not Recommended			
										$1,250,000	$1,250,000	$0	Feasibility	Did Not Pass Stage 1			
										$2,284,000	$141,000	$20,000	DesignConstructi	Did Not Pass Stage 1			
										$4,358,784	$4,308,784	$50,000	DesignConstructi	Did Not Pass Stage 1			
										$33,213,710	$15,985,623	$896,654				$8,860,179	
	6.56	9.00	14.83	2.50	12.38	2.00	5.00	52.27	50	$17,342,837	$2,017,818	$201,782	Design	FULL SP		$2,017,818	$2,017,818
	6.56	9.00	13.17	3.00	4.00	2.00	4.50	42.23	64	$4,565,200	$440,000	$44,000	Design	FULL		$440,000	$2,457,818
										$21,908,037	$2,457,818	$245,782				$2,457,818	
$6.07	26.56	7.00	12.57	2.00	6.00	5.00	3.00	62.13	33	$2,692,700	$2,495,189	$95,000	DesignConstructi	PARTIAL SP	Y	$270,000	$270,000
	18.27	6.00	9.20	4.50	0.38	3.00	4.50	45.85	61	$77,000	$76,000	$1,000	Construction	FULL SP		$75,000	$345,000
										$38,650,000	$2,922,000	$150,000	Design	Did Not Pass Stage 2			
										$447,800	$447,800	$0	Construction	Not Recommended			
										$467,252	$456,252	$11,000	Construction	Not Recommended			
										$42,344,752	$6,397,241	$257,000				$345,000	

Renewable Energy Fund Round VII—Recommendations and Funding

Count		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 2 Score	AEA B/C (Ben / Cost)	Appl B/C (Ben / Cost)	Cost of Energy ($/kWh)
1	H	Aleutians	1026	Atka Dispatchable Heat	City of Atka	Local Government	Hydro to Heat	82.83	3.18	6.00	$0.70
2	S	Aleutians	1092	Waterfall Creek Hydroelectric Project	City of King Cove	Local Government	Hydro	71.17	1.32	1.07	[illegible]
3	S	Aleutians	1062	False Pass Hydrokinetic Feasibility Study	City of False Pass	Local Government	Hydrokinetic	42.83	0.22	0.22	$0.51
4	S	Aleutians	1070	Sand Point Energy Storage Project	TDX Sand Point Generating, LLC	Utility	Storage of Renew	47.50	1.08	1.01	$0.58
5	S	Aleutians	1080	False Pass Wind Energy Project	City of False Pass Electric Utility	Local Government	Wind	48.33	0.67	0.61	$0.51
6	S	Aleutians	1056	Adak Wind Data Collection Analysis and Preliminary Design	City of Adak, Alaska	Local Government	Wind	35.33	0.47	0.27	$0.81
	6	Aleutians Total									
1	S	Bering Straits	1068	Stebbins St Michael Wind Energy Final Design and Permitting	Alaska Village Electric Cooperative, Inc	Utility	Wind	83.33	1.80	2.74	$0.56
2	H	Bering Straits	1040	Brevig Mission Water System Heat Recovery	City of Brevig Mission	Government Entity	Heat Recovery	83.00	1.51	2.01	$0.54
	2	Bering Straits Total									
1	S	Bristol Bay	1028	Packers Creek Hydroelectric Project Phase II	Chignik Lagoon Village Council	Government Entity	Hydro	86.33	1.86	3.86	$0.60
2	S	Bristol Bay	1072	Igiugig Wind Resource Feasibility and Conceptual Design	Igiugig Village Council	Government Entity	Wind	47.00	0.80	1.40	$0.80
3	S	Bristol Bay	1078	Koliganek Wind Diesel and Heat Recovery	New Koliganek Village Council	Government Entity	Wind	52.33	1.05	1.80	$0.51
4	S	Bristol Bay	1018	Chignik Hydroelectric Project Design and Permitting	City of Chignik	Local Government	Hydro	52.17	1.02	1.80	$0.48
5	H	Bristol Bay	1008	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.	Utility	Heat Recovery		1.38	6.44	$0.50
6	S	Bristol Bay	1048	Port Alsworth Hydropower PreConstruction Phase	Port Alsworth Improvement Corporation	Government Entity	Hydro		1.52		$0.68
7	S	Bristol Bay	1050	Bristol Bay Borough School District Solar PV Project	Bristol Bay Borough School District	Government Entity	Solar PV		0.98	1.28	$0.50
8	S	Bristol Bay	1063	Iliamna Solar Ground Mounted Energy System	Iliamna Village Council	Government Entity	Solar PV		0.01	0.40	$0.59
	[illegible]	Bristol Bay Total									
1	S	Copper River/Chugach	1015++	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc	Utility	Hydro	88.33	3.86	3.69	$0.29
1	S	Copper River/Chugach	1015++	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc	Utility	Hydro				
2	H	Copper River/Chugach	1014	Wood Chip Boiler for The Native Village of Tazlina	Native Village of Tazlina	Government Entity	Biomass	84.50	1.19	1.84	$0.28
3	S	Copper River/Chugach	1075	Cascade Creek Hydroelectric Project Feasibility Study	Blue Hole Properties, LLC (BHP)	IPP	Hydro	45.83	1.30	3.48	$0.28
4	S	Copper River/Chugach	1064	Chenega Bay Hydroelectric Construction	Native Village of Chenega	Government Entity	Hydro		1.14	1.02	$0.44
	[illegible]	Copper River/Chugach Total									
1	S	Kodiak	1065	Old Harbor Hydroelectric Project Final Design and Permitting	Alaska Village Electric Cooperative, Inc	Utility	Hydro	58.33	1.11	1.79	$0.58
2	S	Kodiak	1030	Flywheels ESS for Kodiak Pier Electric Crane	Kodiak Electric Association, Inc.	Utility	Storage of Renew	66.83	0.51	1.02	$0.19
3	S	Kodiak	1004	Karluk Tribal Council Wind Energy System	Karluk Tribal Council	Government Entity	Wind	21.17	0.76	1.83	$0.60
	3	Kodiak Total									
1	H	Lower Yukon-Kuskokwim	1052	Nunam Iqua Heat Recovery Project	City of Nunam Iqua	Local Government	Heat Recovery	87.67	2.20	2.33	$0.53
2	H	Lower Yukon-Kuskokwim	1085	Tuntutuliak Heat Recovery	Native Village of Tuntutuliak	Government Entity	Heat Recovery	81.33	1.54	2.32	$0.65
3	H	Lower Yukon-Kuskokwim	1061	Emmonak Heat Recovery System	City of Emmonak	Government Entity	Heat Recovery	87.67	2.56	4.02	$0.55
4	S	Lower Yukon-Kuskokwim	1067	Mountain Village Wind Feasibility and Conceptual Design	Alaska Village Electric Cooperative, Inc.	Utility	Wind	79.17	1.70	1.23	$0.54
5	H	Lower Yukon-Kuskokwim	1043	St Marys Heat Recovery System	City of St. Mary's	Government Entity	Heat Recovery	86.17	1.61	2.21	$0.48
6	H	Lower Yukon-Kuskokwim	1073	Kongiganak Wind Heat, Electrical Thermal Storage	Puvurnaq Power Company	Utility	Wind to Heat	74.17	1.70	2.55	$0.56
7	H	Lower Yukon-Kuskokwim	1041	Chevak Water and Vacuum Plant Heat Recovery	City of Chevak	Government Entity	Heat Recovery	85.33	1.83	2.44	$0.48
8	S	Lower Yukon-Kuskokwim	1057	Mertarvik Renewable Energy Feasibility and Conceptual Design	Ungusraq Power Company (UPC) / Newtok	IPP	Wind	53.00	1.14		$0.80
9	S	Lower Yukon-Kuskokwim	1089	St Marys Pitkas Point Wind Energy Construction Project	Alaska Village Electric Cooperative, Inc	Utility	Wind	66.00	1.19	1.47	$0.49
10	H	Lower Yukon-Kuskokwim	1071	Kwigillingok Wind Heat, Electrical Thermal Storage	Kwig Power Company	Utility	Wind to Heat	84.17	1.53	1.73	$0.60
11	H	Lower Yukon-Kuskokwim	1042	Eek Water System Heat Recovery	City of Eek	Government Entity	Heat Recovery	70.17	1.01	1.35	$0.60
12	H	Lower Yukon-Kuskokwim	1074	Tuntutuliak Wind Heat Electrical Thermal Storage	TCSA Electrical Services	Utility	Wind to Heat	40.67	1.80	0.96	$0.65
13	S	Lower Yukon-Kuskokwim	1088	Marshall Wind Energy Final Design and Permitting Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	52.17	0.98	1.60	$0.50
14	H	Lower Yukon-Kuskokwim	1008	Chuathbaluk Water System Heat Recovery	City of Chuathbaluk	Government Entity	Heat Recovery		0.97	0.98	$0.65
15	S	Lower Yukon-Kuskokwim	1039	Four Villages Intertie Design	Nuvista Light and Electric Cooperative	Government Entity	Transmission				
16	S	Lower Yukon-Kuskokwim	1054	Multiple Alternative Energy Sources for Napakiak	Napakiak Ircinraq Power Company	Utility	Wind				
17	S	Lower Yukon-Kuskokwim	1086	Chefornak High Penetration Wind Diesel System	Naterqak Light Plant, City of Chefornak	Local Government	Wind				
	17	Lower Yukon Kuskokwim Total									
1	S	North Slope	1046	Atqasuk Transmission Line Design and Permitting Project	North Slope Borough	Local Government	Transmission	74.17	3.30	3.56	$0.15
2	S	North Slope	1048	Kaktovik Wind Diesel Design and Permitting	North Slope Borough	Local Government	Wind	66.83	1.03	1.37	$0.15
	2	North Slope Total									
1	H	Northwest Arctic	1038	Kotzebue Paper and Wood Waste to Energy Project	City of Kotzebue	Local Government	Biomass	62.83	1.12	1.18	$0.43
2	S	Northwest Arctic	1001	Northwest Arctic Borough Solar PV Project	Northwest Arctic Borough	Local Government	Solar PV	46.00	0.88	0.83	$0.42
3	S	Northwest Arctic	1059	Cosmos Hills Hydroelectric Design and Permitting	Alaska Village Electric Cooperative	Utility	Hydro	27.50	0.71	1.05	$0.74
4	S	Northwest Arctic	1058	Noatak Utility Size Photovoltaic Array Construction Project	Northwest Arctic Borough	Local Government	Solar PV		1.24	1.22	$0.74
5	H	Northwest Arctic	1076	NWAB School District Solar Thermal Systems	Northwest Arctic Borough School District	Government Entity	Solar Thermal		1.48	3.14	$0.83
	5	Northwest Arctic Total									

Table 2.

Note: 9 months only for 2013

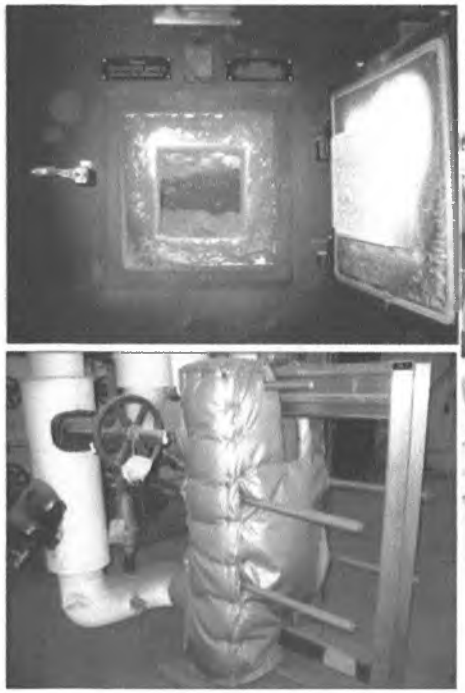
2012 Energy Production Electrical (MWh)	2012 Energy Production Thermal (MMBtu)	2012 Fuel Displaced Diesel (Gal x 1000)	2012 Fuel Displaced Value ($ x 1000)	Jan - Sep 2013 Energy Production Electrical (MWh)	Jan - Sep 2013 Energy Production Thermal (MMBtu)	Jan - Sep 2013 Fuel Displaced Diesel (Gal x 1000)	Jan - Sep 2013 Fuel Displaced Value ($ x 1000)	Cumulative Total (2009-Sep 2013) Energy Production Electrical (MWh)	Cumulative Total Energy Production Thermal (MMBtu)	Cumulative Total Fuel Displaced Diesel (Gal x 1000)	Cumulative Total Fuel Displaced Value ($ x 1000)
-	-	-	$ -	33,834	-	3,224.0	$ 1,602.0	33,834	-	3,224.0	$ 1,079.0
-	-	-	$ -	285	-	21.9	$ 118.4	285	-	21.9	$ 118.4
3,610	-	270.0	$ 1,050.6	2,933	-	225.6	$ 909.6	8,006	-	610.6	$ 2,270.6
1,956	-	150.4	$ 645.3	1,490	-	114.6	$ 481.1	8,044	-	583.8	$ 2,143.7
-	-	-	$ -	9	-	0.6	$ 2.3	9	-	0.6	$ 2.3
589	-	44.3	$ 161.7	644	-	48.4	$ 176.0	1,544	-	109.1	$ 403.7
996	-	61.2	$ 193.3	700	-	43.1	$ 138.2	4,040	-	236.0	$ 730.2
989	-	63.9	$ 132.9	210	-	13.6	$ 36.4	3,429	-	202.8	$ 482.6
131	-	9.6	$ 38.6	96	-	7.0	$ 26.1	922	-	64.2	$ 238.6
147	-	10.4	$ 41.1	123	-	8.7	$ 32.6	513	-	33.2	$ 123.9
500	-	38.1	$ 161.4	391	-	29.8	$ 116.7	1,372	-	101.9	$ 398.0
506	-	35.8	$ 142.0	406	-	28.8	$ 111.0	975	-	69.1	$ 270.7
116	-	8.9	$ 35.7	119	-	9.2	$ 36.1	235	-	18.1	$ [illegible]
13,091	-	921.9	$ 1,972.9	50,496	-	3,556.1	$ 9,630.3	63,588	-	4,478.0	$ 11,503.2
16,201	-	1,140.9	$ 4,211.8	18,085	-	1,273.6	$ 4,385.3	65,185	-	4,584.6	$ 15,849.6
2,177	-	148.1	$ 549.9	1,941	-	132.0	$ 468.7	4,118	-	280.1	$ 1,018.6
-	-	-	$ -	635	-	38.8	$ 124.6	635	-	38.8	$ 124.6
40,909	-	2,904	$ 9,337.1	112,395		8,776	$ 18,193.3	196,732	-	14,657	$ 36,820.1
792	-	54.1	$ 265.2	960	15	69.7	$ 321.9	1,937	15	142.2	$ 653.0
-	-	-	$ -	46	66	4.1	$ 19.4	46	66	4.1	$ 19.4
185	-	14.0	$ 63.4	232	464	21.9	$ 105.0	604	454	42.5	$ 198.6
-	-	-	$ -	136	221	10.4	$ 47.4	136	221	10.4	$ 47.4
938	-	67.8	$ 247.6	626	204	47.2	$ 179.8	3,250	204	226.4	$ 777.2
1,914	-	140	$ 577.2	1,900	960	153	$ 673.5	5,970	960	476	$ 1,695.5
-	4,695	44.0	$ 147.0	-	7,141	68.7	$ 250.6	-	16,371	152.1	$ 640.6
-	212	1.7	$ 6.8	-	231	2.4	$ 10.4	-	453	4.2	$ 17.3
-	3,977	38.2	$ 133.6	-	3,468	33.2	$ 132.6	-	7,435	71.5	$ 266.2
-	780	7.0	$ 28.9	-	-	-	$ -	-	1,840	16.9	$ 63.3
-	600	6.4	$ 25.3	-	-	-	$ -	-	2,820	24.4	$ 95.4
-	5,400	45.0	$ 169.0	-	5,400	45.0	$ 169.0	-	15,917	127.1	$ 448.6
-	1,740	16.7	$ 61.4	-	3,068	29.6	$ 124.8	-	4,808	46.2	$ 186.2
-	-	-	$ -	-	2,892	27.8	$ 106.2	-	2,892	27.8	$ 106.2
-	3,349	32.8	$ 90.6	-	-	-	$ -	-	9,695	106.0	$ 285.2
-	-	-	$ -	-	4,119	36.7	$ 178.7	-	4,119	36.7	$ 178.7
-	2,617	25.2	$ 97.1	-	1,681	16.2	$ 120.1	-	8,356	76.6	$ 419.6
-	7,711	79.4	$ 134.6	-	4,998	51.6	$ 82.6	-	19,597	196.9	$ 447.4
-	130	1.9	$ 7.6	-	108	0.8	$ 6.8	-	433	6.0	$ 23.0
-	31,111	297	$ 891.7	-	33,096	312	$ 1,171.6	-	94,838	898	$ 1,077.5
42,821	31,111	3,311.0	$ 10,806.1	114,304	71,126	9,571.1	$ 21,046.6	202,605	95,596	15,972.7	$ 41,601.1
	2013 Estimated Annualized Total			152,512	94,835	12,761.5	$ 28,062.1				

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

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

City of Akutan Town Creek Hydro—Alaska Energy Authority

Success Stories



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.

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

Table 4.

Applicant Type	Energy Source	Stage 2 Score	Benefit Cost		Cost of Energy $/kWh	Project Cost				Recommendation
			AEA B/C	Appl B/C		Project Cost	Grant Requested	Match Offered	Phase	AEA Recomnd
Local Government	Hydro	38.33	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		$0.82	$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		1.38	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		0.56	1.28	$0.60	$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	$880,000	$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
						$331,288,787	$33,835,106	$4,739,820		

City of Akutan Town Creek Hydro
Alaska Energy Authority

Renewable Energy Fund Round VII—Not Recommended Applications

Count		Energy Region	ID	Project Name	Applicant
1	S	Southeast	1019	Survey Creek Hydroelectric Project	Edna Bay Community
2	S	Railbelt	1002	Poncelet Kinetics RHK100 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 Permiting	Alaska Village Electric Cooperative
7	S	Kodiak	1004	Karluk Tribal Council Wind Energy System	Karluk Tribal Council
8	S	Southeast	1003	Mahoney Lake Hydroelectric Phase III and IV	City of Saxman
9	H	Bristol Bay	1006	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.
10	H	Lower Yukon-Kuskokwim	1008	Chuathbaluk Water System Heat Recovery	City of Chuathbaluk
11	S	Southeast	1020	Excursion Inlet Hydro Project Feasibility/Conceptual Design	Haines Borough
12	S	Southeast	1034	Metlakatla to Ketchikan Interite	Metlakatla Indian Community
13	S	Southeast	1035	Feasibility Study of Tenakee Inlet Geothermal Resource	Inside Passage Electric Cooperative
14	S	Bristol Bay	1046	Port Alsworth Hydropower PreConstruction Phase	Port Alsworth Improvement Corporation
15	S	Bristol Bay	1050	Bristol Bay Borough School District Solar PV Project	Bristol Bay Borough School District
16	S	Northwest Arctic	1058	Noatak Utility Size Photovoltaic Array Construction Project	Northwest Arctic Borough
17	S	Bristol Bay	1063	Iliamna Solar Ground Mounted Energy System	Iliamna Village Council
18	S	Copper River/Chugach	1064	Chenega Bay Hydroelectric Construction	Native Village of Chenega
19	H	Northwest Arctic	1076	NWAB School District Solar Thermal Systems	Northwest Arctic Borough School District
20	S	Lower Yukon-Kuskokwim	1039	Four Villages Interite 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
		Total: 22 Not Recommended Projects			

Notes

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

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

** #1082 Stetson Creek Diversion Cooper Lake Dam Facilities Project is recommended by AEA staff to be fully funded. If REF7 allocations are greater than the Governor's budget of $20m, the REFAC recommends funding the remaining grant requested funding of $1,693,901.

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

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

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

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

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

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

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

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

SP = Special Provisions

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

Round VII Recommended Projects

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

Review Process

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

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

Advisory Committee

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

AEA's Recommendation

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

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

Allison Lake Hydroelectric Project, Valdez

REF Grant: $2,288,000

Total Project Cost: $38,804,000

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

Capacity: 6.5MW

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

								Ben / Cost				Stage 3 Review Scores (max)										Project Cost				Recommendation			
Count		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 2 Score	AEA B/C	Appl B/C	Cost of Energy $/kWh	Fuel Price $/gal	1. Cost of 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 Recomnd	Early	Recommend Funding	Cumulative Funding
	Not Recommended Projects:																												
65	S	Southeast	1019	Survey Creek Hydroelectric Project	Edna Bay Community	Local Government	Hydro	39.33	1.48	1.37	N/A											$3,562,772	$62,272	$3,500	Recon	Did Not Pass Stage 2			
66	S	Railbelt	1002	Poncelet Kinetics RHK100 Prototype Demonstration	Whitestone Power and Communications	IPP	Hydrokinetic	39.17	0.16	0.16	$0.22											$1,940,558	$1,560,558	$120,000	Construction	Did Not Pass Stage 2			
67	S	Southeast	1024	Walker Lake Hydro Project Feasibility	Tlingit-Haida Regional Electrical Authority	Utility	Hydro	39.00	1.05		$0.62											$825,000	$700,000	$125,000	ReconFeasibility	Did Not Pass Stage 2			
68	S	Railbelt	1029	Jack River Hydroelectric Project Feasibility Study	Native Village Of Cantwell	Government Entity	Hydro	35.33	0.79	1.21	$0.22											$31,500,000	$213,750	$11,250	Feasibility	Did Not Pass Stage 2			
69	S	Aleutians	1056	Adak Wind Data Collection Analysis and Preliminary Design	City of Adak, Alaska	Local Government	Wind	35.33	0.47	0.27	$0.81											$72,400,000	$160,000	$0	Feasibility	Did Not Pass Stage 2			
70	S	Northwest Arctic	1059	Cosmos Hills Hydroelectric Design and Permitting	Alaska Village Electric Cooperative	Utility	Hydro	27.50	0.71	1.05	$0.74											$38,660,000	$2,922,000	$150,000	Design	Did Not Pass Stage 2			
71	S	Kodiak	1004	Karluk Tribal Council Wind Energy System	Karluk Tribal Council	Government Entity	Wind	21.17	0.76	1.83	$0.60											$1,300,000	$81,000	$300	FeasibilityDesign	Did Not Pass Stage 2			
72	S	Southeast	1003	Mahoney Lake Hydroelectric Phase III and IV	City of Saxman	Local Government	Hydro		1.79	6.91	$0.10											$51,000,000	$4,000,000	$4,000,000	DesignConstruction	Not Recommended			
73	H	Bristol Bay	1006	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.	Utility	Heat Recovery		1.39	6.44	$0.50											$1,940,379	$1,843,379	$97,000	FeasDesignConstr.	Not Recommended			
74	H	Lower Yukon-Kuskokwim	1008	Chuathbaluk Water System Heat Recovery	City of Chuathbaluk	Government Entity	Heat Recovery		0.97	0.98	$0.85											$232,430	$225,660	$6,770	DesignConstruction	Not Recommended			
75	S	Southeast	1020	Excursion Inlet Hydro Project Feasibility and Conceptual Des	Haines Borough	Local Government	Hydro		0.09	3.93	N/A											$14,500,000	$213,536	$10,000	Feasibility	Not Recommended			
76	S	Southeast	1034	Metlakatla to Ketchikan Intertie	Metlakatla Indian Community	Government Entity	Transmission		1.77	1.28	$0.10											$14,510,599	$9,281,615	$0	DesignConstruction	Not Recommended			
77	S	Southeast	1035	Feasibility Study of Tenakee Inlet Geothermal Resource	Inside Passage Electric Cooperative	Utility	Geothermal		0.44	1.24	$0.65											$49,000,000	$3,378,500	$0	Feasibility	Not Recommended			
78	S	Bristol Bay	1046	Port Alsworth Hydropower PreConstruction Phase	Port Alsworth Improvement Corporation	Government Entity	Hydro		1.52		$0.68											$7,224,213	$159,000	$10,000	ReconFeasibility	Not Recommended			
79	S	Bristol Bay	1050	Bristol Bay Borough School District Solar PV Project	Bristol Bay Borough School District	Government Entity	Solar PV		0.96	1.28	$0.50											$235,000	$230,000	$5,000	DesignConstruction	Not Recommended			
80	S	Northwest Arctic	1058	Noatak Utility Size Photovoltaic Array Construction Project	Northwest Arctic Borough	Local Government	Solar PV		1.24	1.22	$0.74											$447,800	$447,800	$0	Construction	Not Recommended			
81	S	Bristol Bay	1063	Iliamna Solar Ground Mounted Energy System	Iliamna Village Council	Government Entity	Solar PV		0.01	0.40	$0.59											$2,000,000	$800,000	$120,000	ReconFeasibility	Not Recommended			
82	S	Copper River/Chugach	1064	Chenega Bay Hydroelectric Construction	Native Village of Chenega	Government Entity	Hydro		1.14	1.02	$0.44											$1,650,000	$1,400,000	$0	DesignConstruction	Not Recommended			
83	H	Northwest Arctic	1076	NWAB School District Solar Thermal Systems	Northwest Arctic Borough School District	Government Entity	Solar Thermal		1.48	3.14	$0.63											$467,252	$456,252	$11,000	Construction	Not Recommended			
84	S	Lower Yukon-Kuskokwim	1039	Four Villages Intertie Design	Nuvista Light and Electric Cooperative	Government Entity	Transmission															$1,250,000	$1,250,000	$0	Feasibility	Did Not Pass Stage 1			
85	S	Lower Yukon-Kuskokwim	1054	Multiple Alternative Energy Sources for Napakiak	Napakiak Ircinraq Power Company	Utility	Wind															$2,284,000	$141,000	$20,000	DesignConstruction	Did Not Pass Stage 1			
86	S	Lower Yukon-Kuskokwim	1086	Chefornak High Penetration Wind Diesel System	Naterqak Light Plant, City of Chefornak	Local Government	Wind															$4,358,784	$4,308,784	$50,000	DesignConstruction	Did Not Pass Stage 1			
	Sub Total - Not Recommended Projects																					$301,288,787	$33,835,106	$4,739,820					SubTotal
	Grand Total - All Applications																					$524,085,270	$93,011,953	$57,294,853				$41,593,701	GrandTotal

Notes

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** #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.

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

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

												Ben / Cost			Stage 3 Review Scores (max)										Project Cost				Recommendation			
Count		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 2 Score	AEA B/C	Appl B/C	Cost of Energy $/kWh	Fuel Price $/gal	1. Cost of 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 Recomnd	Early	Recommend Funding	Cumulative Funding
1	H	Aleutians	1026	Atka Dispatchable Heat	City of Atka	Local Government	Hydro to Heat	82.83	3.18	6.90	$0.70	$7.65	33.47	11.00	16.57	5.00	12.00	3.00	4.00	85.04	1	$135,254	$114,965	$20,289	Construction	FULL		$114,965	$114,965
2	S	Bristol Bay	1036	Packers Creek Hydroelectric Project Phase II	Chignik Lagoon Village Council	Government Entity	Hydro	86.33	1.66	3.85	$0.69		30.26	11.00	17.27	5.00	11.00	5.00	3.83	83.36	2	$5,389,149	$2,352,653	$3,036,496	Construction	FULL		$2,352,653	$2,666,092
3	H	Yukon-Koyukok/Upper Tan	1044	Venetie Clinic Heat Recovery	Village of Venetie	Government Entity	Heat Recovery	85.17	1.68	2.45	$0.90	$8.50	35.00	6.00	17.03	4.00	11.25	4.00	3.33	80.62	3	$204,428	$198,474	$11,908	DesignConstruction	FULL		$198,474	$313,439
4	H	Yukon-Koyukok/Upper Tan	1047	Galena Community Wood Heat Project	City of Galena	Local Government	Biomass	88.00	4.31	3.96	$0.56	$6.02	26.34	6.00	17.60	3.83	14.13	5.00	4.50	77.40	4	$3,144,200	$3,096,898	$47,302	Construction	FULL SP		$3,096,898	$5,762,990
5	H	Lower Yukon-Kuskokwim	1052	Nunam Iqua Heat Recovery Project	City of Nunam Iqua	Local Government	Heat Recovery	87.67	2.20	2.33	$0.53	$4.38	19.16	13.00	17.53	3.00	12.50	5.00	3.50	73.69	5	$603,000	$450,000	$153,000	Construction	FULL		$450,000	$6,212,990
6	H	Southeast	1011	Sitka Centennial Hall Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	80.50	1.69	3.58	$0.09	$3.59	15.71	15.00	16.10	5.00	10.75	5.00	4.83	72.39	6	$232,620	$232,620	$1,021,393	DesignConstruction	FULL		$232,620	$6,445,610
7	S	Bering Straits	1068	Stebbins St Michael Wind Energy Final Design and Permitting	Alaska Village Electric Cooperative, Inc.	Utility	Wind	83.33	1.80	2.74	$0.56		24.42	7.00	16.67	3.00	11.63	5.00	4.50	72.21	7	$3,946,050	$342,000	$18,000	Design	FULL		$342,000	$6,787,610
8	H	Lower Yukon-Kuskokwim	1085	Tuntutuliak Heat Recovery	Native Village of Tuntutuliak	Government Entity	Heat Recovery	81.33	1.54	2.32	$0.65	$6.80	29.75	6.00	16.27	3.83	10.13	3.00	3.00	71.98	8	$469,311	$455,642	$13,669	DesignConstruction	FULL		$455,642	$7,243,252
9	H	Lower Yukon-Kuskokwim	1061	Emmonak Heat Recovery System	City of Emmonak	Government Entity	Heat Recovery	87.67	2.56	4.02	$0.55	$5.77	25.24	6.00	17.53	4.00	12.50	3.00	2.67	70.94	9	$689,251	$689,251	$20,677	DesignConstruction	FULL SP		$689,251	$7,932,503
10	S	Yukon-Koyukok/Upper Tan	1027	Chisana Mountain Wind Feasibility Project	Alaska Power Company	Utility	Wind	85.00	2.55		$0.49		21.46	11.00	17.00	2.50	12.50	2.00	4.17	70.63	10	$148,800	$119,000	$29,800	Feasibility	FULL		$119,000	$8,051,503
11	S	Yukon-Koyukok/Upper Tan	1077	Yerrick Creek Hydroelectric Project	Native Village of Tanacross	Government Entity	Hydro	58.33	4.23	9.84	$0.49		21.46	15.00	11.67	3.00	11.25	5.00	3.17	70.54	11	$19,000,000	$6,000,000	$11,500,000	Construction	PARTIAL		$75,000	$8,126,503
12	S	Lower Yukon-Kuskokwim	1067	Mountain Village Wind Feasibility and Conceptual Design	Alaska Village Electric Cooperative, Inc.	Utility	Wind	79.17	1.70	1.23	$0.54		23.80	7.00	15.83	2.50	11.63	5.00	4.50	70.26	12	$4,833,000	$123,500	$6,500	Feasibility	FULL		$123,500	$8,250,003
13	H	Southeast	1087	Kake Community Energy	Organized Village of Kake	Government Entity	Biomass	73.83	1.62	1.18	$0.62	$5.85	25.59	7.00	14.77	2.00	12.00	4.00	4.00	69.36	13	$1,423,292	$208,073	$20,000	Design	PARTIAL	Y	$175,000	$8,425,003
14	H	Southeast	1037	Ketchikan Gateway Borough Biomass Heating Project	Ketchikan Gateway Borough	Local Government	Biomass	84.33	2.15	0.24	$0.10	$3.59	15.71	11.00	16.87	3.67	13.00	5.00	3.50	68.74	14	$1,957,261	$1,412,889	$353,222	Construction	PARTIAL SP		$620,000	$9,045,003
15	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro	94.33	7.11	0.89	$0.15		6.78	15.00	18.87	5.00	12.88	5.00	5.00	68.52	15	$21,772,523	$3,453,920	$13,591,226	Construction	Partial-REFAC**		$1,760,019	$10,805,022
16	S	Copper River/Chugach	1015++	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro	89.33	3.96	3.68	$0.28		12.44	15.00	17.87	4.00	12.13	2.00	5.00	68.43	16	$49,000,000	$5,914,491	$5,914,491	Construction	Partial-REFAC++		$4,764,652	$15,569,674
17	S	Southeast	1025	Gunnuk Creek Hydroelectric Feasibility Study	Inside Passage Electric Cooperative	Utility	Hydro	73.00	4.28		$0.62		27.14	7.00	14.60	2.00	11.63	2.00	3.83	68.20	17	$300,000	$275,000	$25,000	ReconFeasibility	PARTIAL SP		$80,000	$15,649,674
18	H	Bering Straits	1040	Brevig Mission Water System Heat Recovery	City of Brevig Mission	Government Entity	Heat Recovery	83.00	1.51	2.01	$0.54	$5.29	23.14	6.00	16.60	5.00	10.25	4.00	3.17	68.16	18	$753,313	$731,372	$21,941	DesignConstruction	FULL		$731,372	$16,381,046
19	H	Railbelt	1031	Seldovia House Ground Source Heat Pump Project	Cook Inlet Housing Authority	Government Entity	Heat Pumps	58.17	1.12	0.94	$0.20	$5.19	22.71	15.00	11.63	4.50	5.25	5.00	3.83	67.93	19	$362,805	$318,289	$411,835	DesignConstruction	FULL		$318,289	$16,699,335
20	H	Southeast	1021	Haines Borough Municipal Buildings Biomass Project	Haines Borough	Local Government	Biomass	88.50	1.72	1.79	$0.22	$4.09	17.89	9.00	17.70	3.83	12.63	2.00	4.50	67.55	20	$1,374,892	$1,237,403	$137,448	DesignConstruction	FULL SP		$1,237,403	$17,936,738
21	H	Lower Yukon-Kuskokwim	1043	St. Mary's Heat Recovery System	City of St. Mary's	Government Entity	Heat Recovery	85.17	1.61	2.21	$0.49	$4.60	20.13	6.00	17.03	3.83	11.25	5.00	4.17	67.41	21	$757,299	$735,242	$22,057	DesignConstruction	FULL		$735,242	$18,671,980
22	H	Yukon-Koyukok/Upper Tan	1032	Biomass Heat for Minto Community Buildings	Village of Minto	Government Entity	Biomass	69.33	1.02	1.37	$0.59	$5.00	21.88	15.00	13.87	3.00	5.38	5.00	3.17	67.29	22	$403,550	$274,750	$278,800	DesignConstruction	FULL SP		$274,750	$18,946,730
23	H	Southeast	1053	Yakutat Biomass District Heating Loop	City and Borough of Yakutat	Local Government	Biomass	67.67	1.45	2.31	$0.50	$5.05	22.09	11.00	13.53	2.00	8.88	5.00	4.17	66.67	23	$335,456	$286,166	$49,290	DesignConstruction	PARTIAL SP	Y	$103,000	$19,049,730
24	H	Lower Yukon-Kuskokwim	1073	Kongiganak Wind Heat Electrical Thermal Storage	Puvurnaq Power Company	Utility	Wind to Heat	74.17	1.70	2.55	$0.56	$6.21	27.17	6.00	14.83	2.83	12.38	0.00	3.00	66.21	24	$320,456	$311,456	$9,000	Construction	FULL SP		$311,456	$19,361,186
25	S	Bristol Bay	1072	Igiugig Wind Resource Feasibility/Conceptual Design	Igiugig Village Council	Government Entity	Wind	47.00	0.86	1.40	$0.80		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	$19,441,186
26	H	Lower Yukon-Kuskokwim	1041	Chevak Water and Vacuum Plant Heat Recovery	City of Chevak	Government Entity	Heat Recovery	85.33	1.83	2.44	$0.48	$4.30	18.81	6.00	17.07	3.00	12.50	5.00	2.83	65.21	26	$558,814	$558,814	$16,765	DesignConstruction	FULL SP		$558,814	$20,000,000
	SubTotal - Top Ranking $20 million post stage 4 regional spreading and REFAC committee recommendations																					$118,224,724	$29,972,868	$36,760,109				$20,000,000	SubTotal
	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro														15				Construction	FULL**		$1,693,901	$21,693,901
	S	Copper River/Chugach	1015++	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro														16				Construction	FULL++		$1,149,839	$22,843,740
27	H	Southeast	1017	Southeast Island School District Wood Boilers	Southeast Island School District	Government Entity	Biomass	76.67	1.47	2.32	$0.41	$3.80	16.63	11.00	15.33	3.00	9.75	5.00	4.00	64.71	27	$1,058,775	$940,950	$177,825	Construction	FULL SP		$940,950	$23,784,690
28	H	Yukon-Koyukok/Upper Tan	1045	Grayling Heat Recovery System	City of Grayling	Government Entity	Heat Recovery	80.17	1.47	2.02	$0.56	$5.00	21.88	6.00	16.03	3.83	9.00	4.00	3.50	64.25	28	$332,590	$322,903	$19,374	DesignConstruction	FULL		$322,903	$24,107,593
29	H	Southeast	1016	Hydaburg Schools Wood Fired Boiler Project	Hydaburg City School District	Government Entity	Biomass	77.83	1.91	2.45	$0.24	$4.20	18.38	7.00	15.57	3.00	13.50	3.00	3.50	63.95	29	$627,900	$583,900	$44,000	DesignConstruction	PARTIAL SP	Y	$125,000	$24,232,593
30	S	Lower Yukon-Kuskokwim	1057	Mertarvik Renewable Energy Feasibility and Conceptual Desig	Ungusraq Power Company (UPC) / Newtok	IPP	Wind	53.00	1.14		$0.80		35.00	7.00	10.60	2.00	4.50	2.00	1.67	62.77	30	$8,000,000	$375,000	$25,000	ReconFeasibility	PARTIAL		$75,000	$24,307,593
31	S	Lower Yukon-Kuskokwim	1069	St Marys Pitkas Point Wind Energy Construction Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	65.00	1.19	1.47	$0.49		21.60	9.00	13.00	5.00	4.50	5.00	4.33	62.43	31	$4,782,528	$4,274,575	$507,953	Construction	FULL SP		$4,274,575	$28,582,168
32	H	Lower Yukon-Kuskokwim	1071	Kwigillingok Wind Heat Electrical Thermal Storage	Kwig Power Company	Utility	Wind to Heat	64.17	1.53	1.73	$0.60	$5.95	26.03	6.00	12.83	2.83	10.00	2.00	2.50	62.20	32	$302,737	$293,737	$9,000	Construction	FULL SP		$293,737	$28,875,905
33	H	Northwest Arctic	1038	Kotzebue Paper and Wood Waste to Energy Project	City of Kotzebue	Local Government	Biomass	62.83	1.12	1.16	$0.42	$6.07	26.56	7.00	12.57	2.00	6.00	5.00	3.00	62.13	33	$2,692,700	$2,495,189	$95,000	DesignConstruction	PARTIAL SP	Y	$270,000	$29,145,905
34	S	Aleutians	1083	Waterfall Creek Hydroelectric Project	City of King Cove	Local Government	Hydro	71.17	1.37	1.87	$0.28		12.26	15.00	14.23	2.83	7.63	5.00	5.00	61.95	34	$5,500,000	$800,000	$1,900,000	Construction	FULL SP		$800,000	$29,945,905
35	H	Yukon-Koyukok/Upper Tan	1060	Holy Cross Water System Heat Recovery	City of Holy Cross	Government Entity	Heat Recovery	57.67	0.55	0.74	$0.53	$7.15	31.28	6.00	11.53	4.00	1.25	5.00	2.83	61.90	35	$497,773	$497,773	$14,933	DesignConstruction	FULL		$497,773	$30,443,678
36	S	Kodiak	1065	Old Harbor Hydroelectric Project Final Design and Permitting	Alaska Village Electric Cooperative, Inc.	Utility	Hydro	56.33	1.11	1.79	$0.58		25.21	7.00	11.27	2.00	5.38	5.00	4.50	60.35	36	$8,155,000	$1,092,500	$57,500	Design	PARTIAL		$400,000	$30,843,678
37	S	Southeast	1023	Swan Lake Reservoir Expansion Project	The Southeast Alaska Power Agency	Government Entity	Hydro	81.17	4.07	4.07	$0.10		4.47	15.00	16.23	3.00	11.25	5.00	5.00	59.95	37	$13,391,869	$4,000,000	$8,813,869	DesignConstruction	PARTIAL SP		$560,488	$31,404,166
38	H	Southeast	1013	Sitka Kettleson Library Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	61.17	0.91	1.87	$0.09	$3.59	15.71	15.00	12.23	5.00	1.75	5.00	4.83	59.53	38	$230,200	$230,200	$192,891	DesignConstruction	FULL		$230,200	$31,634,366
39	S	Railbelt	1084	Juniper Creek Hydroelectric Reconnaissance Study	Ram Valley, LLC	IPP	Hydro	73.17	2.45	3.49	$0.15		6.61	15.00	14.63	2.00	11.25	4.00	3.83	57.33	39	$2,350,000	$35,750	$35,750	Recon	FULL		$35,750	$31,670,116
40	H	Southeast	1010	Craig High School Wood Heat Conversion	Craig City School District	Government Entity	Biomass	66.33	1.12	1.54	$0.29	$3.80	16.63	11.00	13.27	3.00	6.38	2.00	3.50	55.77	40	$585,450	$492,850	$82,550	DesignConstruction	PARTIAL SP	Y	$125,000	$31,795,116
41	H	Lower Yukon-Kuskokwim	1042	Eek Water System Heat Recovery	City of Eek	Government Entity	Heat Recovery	70.17	1.01	1.35	$0.60	$3.89	17.02	6.00	14.03	5.00	4.50	5.00	3.83	55.39	41	$297,408	$288,745	$8,663	DesignConstruction	FULL		$288,745	$32,083,861
42	H	Southeast	1033	Sitka Sea Water Source Heat Pump Project	City and Borough of Sitka		Heat Pumps	54.83	0.50	0.52	$0.09	$3.59	15.71	15.00	10.97	4.00	0.50	5.00	4.17	55.34	42	$388,838	$373,838	$825,000	DesignConstruction	PARTIAL SP	Y	$56,841	$32,140,702
43	S	Aleutians	1062	False Pass Hydrokinetic Feasibility Study	City of False Pass	Local Government	Hydrokinetic	42.83	0.22	0.22	$0.51		22.45	13.00	8.57	2.50	0.75	5.00	2.50	54.77	43	$5,000,000	$428,646	$137,820	Feasibility	FULL		$428,646	$32,569,348
44	H	Lower Yukon-Kuskokwim	1074	Tuntutuliak Wind Heat Electrical Thermal Storage	TCSA Electrical Services	Utility	Wind to Heat	46.67	1.00	0.96	$0.65	$6.80	29.75	6.00	9.33	2.83	2.13	2.00	2.50	54.54	44	$259,817	$250,817	$9,000	Construction	FULL SP		$250,817	$32,820,165
45	S	Aleutians	1070	Sand Point Energy Storage Project	TDX Sand Point Generating, LLC	Utility	Storage of Renew	47.50	1.08	1.01	$0.58		22.55	9.00	9.50	3.00	4.125	2.00	4.00	54.18	45	$1,397,403	$1,256,403	$141,000	DesignConstruction	PARTIAL SP	Y	$200,000	$33,020,165
46	H	Copper River/Chugach	1014	Wood Chip Boiler for The Native Village of Tazlina	Native Village of Tazlina	Government Entity	Biomass	64.50	1.19	1.84	$0.28	$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	DesignConstruction	PARTIAL SP	Y	$125,000	$33,145,165
47	S	Southeast	1022	SEAPA Wind Resource Assessment Phase I and II	The Southeast Alaska Power Agency	Government Entity	Wind	90.33	1.84		$0.10		4.47	7.00	18.07	2.00	13.13	5.00	3.67	53.33	47	$170,583	$158,771	$11,812	ReconFeasibility	FULL		$158,771	$33,303,936
48	S	Kodiak	1030	Flywheels ESS for Kodiak Pier Electric Crane	Kodiak Electric Association, Inc.	Utility	Storage of Renew	66.83	0.51	1.02	$0.19		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	$34,774,484
49	S	Lower Yukon-Kuskokwim	1066	Marshall Wind Energy Final Design and Permitting Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	52.17	0.98	1.60	$0.50		22.05	7.00	10.43	2.50	1.50	5.00	3.83	52.32	49	$3,214,875	$353,400	$18,600	Design	FULL SP		$353,400	$35,127,884
50	S	North Slope	1049	Atqasuk Transmission Line Design and Permitting Project	North Slope Borough	Local Government	Transmission	74.17	3.30	3.55	$0.15		6.56	9.00	14.83	2.50	12.38	2.00	5.00	52.27	50	$17,342,837	$2,017,818	$201,782	Design	FULL SP		$2,017,818	$37,145,702
51	S	Railbelt	1028	Carlo Creek Hydroelectric Project Reconnaissance Study	Native Village of Cantwell	Government Entity	Hydro	61.00	1.90	1.88	$0.22		9.81	9.00	12.20	1.50	11.63	5.00	3.00	52.14	51	$8,340,000	$54,000	$6,000	Recon	PARTIAL		$35,000	$37,180,702
52	H	Southeast	1007	Mendenhall Valley Library Geothermal HVAC System	City & Borough of Juneau	Local Government	Heat Pumps	49.33	0.86	0.74	$0.12	$4.12	18.03	11.00	9.87	4.00	0.63	4.00	4.50	52.02	52	$825,000	$660,000	$165,000	DesignConstruction	FULL		$660,000	$37,840,702
53	H	Southeast	1012	Sitka Wastewater Treatment Plant Effluent Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	57.67	0.73	1.06	$0.09	$3.59	15.71	9.00	11.53	5.00	0.75	5.00	4.83	51.83	53	$962,984	$849,984	$113,000	DesignConstruction	FULL		$849,984	$38,690,686
54	S	Bristol Bay	1079	Koliganek Wind Diesel and Heat Recovery	New Koliganek Village Council	Government Entity	Wind	52.33	1.05	1.60	$0.51		22.09	6.00	10.47	3.83	4.13	2.00	3.17	51.68	54	$2,566,000	$306,000	$10,000	Design	FULL SP	Y	$306,000	$38,996,686
55	S	Aleutians	1080	False Pass Wind Energy Project	City of False Pass Electric Utility	Local Government	Wind	46.33	0.67	0.61	$0.51		22.45	9.00	9.27	2.50	0.38	4.00	1.67	49.26	55	$52,050	$47,050	$5,000	Feasibility	FULL SP		$47,050	$39,043,736
56	H	Railbelt	1009	Nenana Collaborative Biomass Heating System Project	Nenana School District	Government Entity	Biomass	54.67	0.66	1.11	$0.22	$4.06	17.76	7.00	10.93	3.00	1.00	5.00	4.00	48.69	56	$3,244,225	$367,965	$25,800	Design	FULL	Y	$367,965	$39,411,701
57	S	Railbelt	1081	Waste to Energy Reconnaissance Study	Chugach Electric Association, Inc.	Utility	Biomass	61.50	1.31	1.34	$0.15		6.78	15.00	12.30	0.00	8.25	2.00	4.00	48.33	57	TBD	$150,000	$100,000	Recon	PARTIAL		$50,000	$39,461,701
58	S	Copper River/Chugach	1075	Cascade Creek Hydroelectric Project Feasibility Study	Blue Hole Properties, LLC (BHP)	IPP	Hydro	45.83	1.30	3.46	$0.28		12.44	11.00	9.17	3.00	6.38	5.00	1.33	48.32	58	$2,250,000	$170,000	$30,000	Feasibility	FULL		$170,000	$39,631,701
59	H	Yukon-Koyukok/Upper Tan	1051	AGSD Extension of Heating Loop	Alaska Gateway School District	Government Entity	Heat Recovery	59.83	0.97	1.45	$0.49	$3.79	16.58	6.00	11.97	4.00	3.38	2.00	4.00	47.92	59	$629,000	$625,000	$4,000	DesignConstruction	FULL		$625,000	$40,256,701
60	H	Railbelt	1078	Chickaloon Solar Thermal and Biomass Project	Chickaloon Native Village	Government Entity	Biomass	43.67	0.74	0.79	$0.15	$3.71	16.23	11.00	8.73	3.00	0.75	2.00	4.17	45.88	60	$152,867	$127,065	$25,802	DesignConstruction	PARTIAL SP		$97,000	$40,353,701
61	S	Northwest Arctic	1001	Northwest Arctic Borough Solar PV Project	Northwest Arctic Borough	Local Government	Solar PV	46.00	0.68	0.83	$0.42		18.27	6.00	9.20	4.50	0.38	3.00	4.50	45.85	61	$77,000	$76,000	$1,000	Construction	FULL SP		$75,000	$40,428,701
62	H	Railbelt	1055	Alaska SeaLife Center Heat Recovery Project	City of Seward	Local Government	Heat Recovery	57.67	1.13	4.41	$0.11		4.59	9.00	11.53	4.50	4.88	5.00	5.00	44.50	62	$250,000	$225,000	$25,000	Construction	FULL		$225,000	$40,653,701
63	S	Bristol Bay	1018	Chignik Hydroelectric Project Design and Permitting	City of Chignik	Local Government	Hydro	52.17	1.02	1.60	$0.48		20.81	0.00	10.43	3.50	4.88	0.00	4.00	43.62	63	BLANK	$1,375,000	$0	Design	PARTIAL SP		$500,000	$41,153,701
64	S	North Slope	1048	Kaktovik Wind Diesel Design and Permitting	North Slope Borough	Local Government	Wind	65.83	1.03	1.37	$0.15		6.56	9.00	13.17	3.00	4.00	2.00	4.50	42.23	64	$4,565,200	$440,000	$44,000	Design	FULL		$440,000	$41,593,701
	SubTotal - All AEA Recommended Projects																					$222,796,483	$59,176,847	$52,555,033				$41,593,701	SubTotal

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

									Ben / Cost			Stage 3 Review Scores (max)										Project Cost					Recommendation			
Count		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 3 Score	AEA B/C	Appl B/C	Cost of Energy $/kWh	Fuel Price Signal	1. Cost of Energy (35)	2. Match (15)	3.Tech & Econ Feas (20)	4. Readiness (5)	5. Benefit (15)	Local Supt (5)	Sustainability (5)	Total (100)	State-wide Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recomed	Left?	Recommend Funding	Cumulative Funding
1	H	Aleutians	1026	Atka Dispatchable Heat	City of Atka	Local Government	Hydro to Heat	82.83	3.18	6.90	$0.70	$7.65	33.47	11.00	16.57	5.00	12.00	3.00	4.00	85.04	1	$135,254	$114,965	$20,289	Construction	FULL		$114,965	$114,965
2	S	Bristol Bay	1036	Packers Creek Hydroelectric Project Phase II	Chignik Lagoon Village Council	Government Entity	Hydro	86.33	1.66	3.85	$0.69		30.26	11.00	17.27	5.00	11.00	5.00	3.83	83.36	2	$5,389,149	$2,352,653	$3,036,496	Construction	FULL		$2,352,653	$2,666,092
3	H	Yukon-Koyukok/Upper Tan	1044	Venetie Clinic Heat Recovery	Village of Venetie	Government Entity	Heat Recovery	85.17	1.68	2.45	$0.90	$8.50	35.00	6.00	17.03	4.00	11.25	4.00	3.33	80.62	3	$204,428	$198,474	$11,908	DesignConstruction	FULL		$198,474	$313,439
4	H	Yukon-Koyukok/Upper Tan	1047	Galena Community Wood Heat Project	City of Galena	Local Government	Biomass	88.00	4.31	3.96	$0.56	$6.02	26.34	6.00	17.60	3.83	14.13	5.00	4.50	77.40	4	$3,144,200	$3,096,898	$47,302	Construction	FULL SP		$3,096,898	$5,762,990
5	H	Lower Yukon-Kuskokwim	1052	Nunam Iqua Heat Recovery Project	City of Nunam Iqua	Local Government	Heat Recovery	87.67	2.20	2.33	$0.53	$4.38	19.16	13.00	17.53	3.00	12.50	5.00	3.50	73.69	5	$603,000	$450,000	$153,000	Construction	FULL		$450,000	$6,212,990
6	H	Southeast	1011	Sitka Centennial Hall Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	80.50	1.69	3.58	$0.09	$3.58	15.71	15.00	16.10	5.00	10.75	5.00	4.83	72.39	6	$232,620	$232,620	$1,021,393	DesignConstruction	FULL		$232,620	$6,445,610
7	S	Bering Straits	1068	Stebbins St Michael Wind Energy Final Design and Permitting	Alaska Village Electric Cooperative, Inc.	Utility	Wind	83.33	1.80	2.74	$0.56		24.42	7.00	16.67	3.00	11.63	5.00	4.50	72.21	7	$3,946,050	$342,000	$18,000	Design	FULL		$342,000	$6,787,610
8	H	Lower Yukon-Kuskokwim	1085	Tuntutuliak Heat Recovery	Native Village of Tuntutuliak	Government Entity	Heat Recovery	81.33	1.54	2.32	$0.65	$6.80	29.75	6.00	16.27	3.83	10.13	3.00	3.00	71.98	8	$469,311	$455,642	$13,669	DesignConstruction	FULL		$455,642	$7,243,252
9	H	Lower Yukon-Kuskokwim	1061	Emmonak Heat Recovery System	City of Emmonak	Government Entity	Heat Recovery	87.67	2.56	4.02	$0.55	$5.77	25.24	6.00	17.53	4.00	12.50	3.00	2.67	70.94	9	$689,251	$689,251	$20,677	DesignConstruction	FULL SP		$689,251	$7,932,503
10	S	Yukon-Koyukok/Upper Tan	1027	Chisana Mountain Wind Feasibility Project	Alaska Power Company	Utility	Wind	85.00	2.55		$0.49		21.46	11.00	17.00	2.50	12.50	2.00	4.17	70.63	10	$148,800	$119,000	$29,800	Feasibility	FULL		$119,000	$8,051,503
11	S	Yukon-Koyukok/Upper Tan	1077	Yerrick Creek Hydroelectric Project	Native Village of Tanacross	Government Entity	Hydro	58.33	4.23	9.84	$0.49		21.46	15.00	11.67	3.00	11.25	5.00	3.17	70.54	11	$19,000,000	$6,000,000	$11,500,000	Construction	PARTIAL		$75,000	$8,126,503
12	S	Lower Yukon-Kuskokwim	1067	Mountain Village Wind Feasibility and Conceptual Design	Alaska Village Electric Cooperative, Inc.	Utility	Wind	79.17	1.70	1.23	$0.54		23.80	7.00	15.83	2.50	11.63	5.00	4.50	70.26	12	$4,833,000	$123,500	$6,500	Feasibility	FULL		$123,500	$8,250,003
13	H	Southeast	1087	Kake Community Energy	Organized Village of Kake	Government Entity	Biomass	73.83	1.62	1.18	$0.62	$5.85	25.59	7.00	14.77	2.00	12.00	4.00	4.00	69.36	13	$1,423,292	$208,073	$20,000	Design	PARTIAL	Y	$175,000	$8,425,003
14	H	Southeast	1037	Ketchikan Gateway Borough Biomass Heating Project	Ketchikan Gateway Borough	Local Government	Biomass	84.33	2.15	0.24	$0.10	$3.59	15.71	11.00	16.87	3.67	13.00	5.00	3.50	68.74	14	$1,957,261	$1,412,889	$353,222	Construction	PARTIAL SP		$620,000	$9,045,003
15	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro	94.33	7.11	0.89	$0.15		6.78	15.00	18.87	5.00	12.88	5.00	5.00	68.52	15	$21,772,523	$3,453,920	$13,591,226	Construction	Partial-REFAC**		$1,760,019	$10,805,022
16	S	Copper River/Chugach	1015++	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro	89.33	3.96	3.68	$0.28		12.44	15.00	17.87	4.00	12.13	2.00	5.00	68.43	16	$49,000,000	$5,914,491	$5,914,491	Construction	Partial-REFAC++		$4,764,652	$15,569,674
17	S	Southeast	1025	Gunnuk Creek Hydroelectric Feasibility Study	Inside Passage Electric Cooperative	Utility	Hydro	73.00	4.28		$0.62		27.14	7.00	14.60	2.00	11.63	2.00	3.83	68.20	17	$300,000	$275,000	$25,000	ReconFeasibility	PARTIAL SP		$80,000	$15,649,674
18	H	Bering Straits	1040	Brevig Mission Water System Heat Recovery	City of Brevig Mission	Government Entity	Heat Recovery	83.00	1.51	2.01	$0.54	$5.29	23.14	6.00	16.60	5.00	10.25	4.00	3.17	68.16	18	$753,313	$731,372	$21,941	DesignConstruction	FULL		$731,372	$16,381,046
19	H	Railbelt	1031	Seldovia House Ground Source Heat Pump Project	Cook Inlet Housing Authority	Government Entity	Heat Pumps	58.17	1.12	0.94	$0.20	$5.19	22.71	15.00	11.63	4.50	5.25	5.00	3.83	67.93	19	$362,805	$318,289	$411,835	DesignConstruction	FULL		$318,289	$16,699,335
20	H	Southeast	1021	Haines Borough Municipal Buildings Biomass Project	Haines Borough	Local Government	Biomass	88.50	1.72	1.79	$0.22	$4.09	17.89	9.00	17.70	3.83	12.63	2.00	4.50	67.55	20	$1,374,892	$1,237,403	$137,448	DesignConstruction	FULL SP		$1,237,403	$17,936,738
21	H	Lower Yukon-Kuskokwim	1043	St. Mary's Heat Recovery System	City of St. Mary's	Government Entity	Heat Recovery	85.17	1.61	2.21	$0.49	$4.60	20.13	6.00	17.03	3.83	11.25	5.00	4.17	67.41	21	$757,299	$735,242	$22,057	DesignConstruction	FULL		$735,242	$18,671,980
22	H	Yukon-Koyukok/Upper Tan	1032	Biomass Heat for Minto Community Buildings	Village of Minto	Government Entity	Biomass	69.33	1.02	1.37	$0.59	$5.00	21.88	15.00	13.67	3.00	5.38	5.00	3.17	67.29	22	$403,550	$274,750	$278,800	DesignConstruction	FULL SP		$274,750	$18,946,730
23	H	Southeast	1053	Yakutat Biomass District Heating Loop	City and Borough of Yakutat	Local Government	Biomass	67.67	1.45	2.31	$0.50	$5.05	22.09	11.00	13.53	2.00	8.88	5.00	4.17	66.67	23	$335,456	$286,166	$49,290	DesignConstruction	PARTIAL SP	Y	$103,000	$19,049,730
24	H	Lower Yukon-Kuskokwim	1073	Kongiganak Wind Heat Electrical Thermal Storage	Puvurnaq Power Company	Utility	Wind to Heat	74.17	1.70	2.55	$0.56	$6.21	27.17	6.00	14.83	2.83	12.38	0.00	3.00	66.21	24	$320,456	$311,456	$9,000	Construction	FULL SP		$311,456	$19,361,186
25	S	Bristol Bay	1072	Igiugig Wind Resource Feasibility/Conceptual Design	Igiugig Village Council	Government Entity	Wind	47.00	0.86	1.40	$0.80		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	$19,441,186
26	H	Lower Yukon-Kuskokwim	1041	Chevak Water and Vacuum Plant Heat Recovery	City of Chevak	Government Entity	Heat Recovery	85.33	1.83	2.44	$0.48	$4.30	18.81	6.00	17.07	3.00	12.50	5.00	2.83	65.21	26	$558,814	$558,814	$16,765	DesignConstruction	FULL SP		$558,814	$20,000,000
	SubTotal - Top Ranking $20 million post stage 4 regional spreading and REFAC committee recommendations																					$118,224,724	$29,972,868	$36,760,109				$20,000,000	SubTotal
	S	Railbelt	1082**	Stetson Creek Diversion Cooper Lake Dam Facilities Project	Chugach Electric Association, Inc.	Utility	Hydro														15				Construction	FULL**		$1,693,901	$21,693,901
	S	Copper River/Chugach	1015++	Allison Creek Hydroelectric Project Construction	Copper Valley Electric Association, Inc.	Utility	Hydro														16				Construction	FULL++		$1,149,839	$22,843,740
27	H	Southeast	1017	Southeast Island School District Wood Boilers	Southeast Island School District	Government Entity	Biomass	76.67	1.47	2.32	$0.41	$3.80	16.63	11.00	15.33	3.00	9.75	5.00	4.00	64.71	27	$1,058,775	$940,950	$177,825	Construction	FULL SP		$940,950	$23,784,690
28	H	Yukon-Koyukok/Upper Tan	1045	Grayling Heat Recovery System	City of Grayling	Government Entity	Heat Recovery	80.17	1.47	2.02	$0.56	$5.00	21.88	6.00	16.03	3.83	9.00	4.00	3.50	64.25	28	$332,590	$322,903	$19,374	DesignConstruction	FULL		$322,903	$24,107,593
29	H	Southeast	1016	Hydaburg Schools Wood Fired Boiler Project	Hydaburg City School District	Government Entity	Biomass	77.83	1.91	2.45	$0.24	$4.20	18.38	7.00	15.57	3.00	13.50	3.00	3.50	63.95	29	$627,900	$583,900	$44,000	DesignConstruction	PARTIAL SP	Y	$125,000	$24,232,593
30	S	Lower Yukon-Kuskokwim	1057	Mertarvik Renewable Energy Feasibility and Conceptual Desig	Ungusraq Power Company (UPC) / Newtok	IPP	Wind	53.00	1.14		$0.80		35.00	7.00	10.60	2.00	4.50	2.00	1.67	62.77	30	$8,000,000	$375,000	$25,000	ReconFeasibility	PARTIAL		$75,000	$24,307,593
31	S	Lower Yukon-Kuskokwim	1069	St Marys Pitkas Point Wind Energy Construction Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	65.00	1.19	1.47	$0.49		21.60	9.00	13.00	5.00	4.50	5.00	4.33	62.43	31	$4,782,528	$4,274,575	$507,953	Construction	FULL SP		$4,274,575	$28,582,168
32	H	Lower Yukon-Kuskokwim	1071	Kwigillingok Wind Heat Electrical Thermal Storage	Kwig Power Company	Utility	Wind to Heat	64.17	1.53	1.73	$0.60	$5.95	26.03	6.00	12.83	2.83	10.00	2.00	2.50	62.20	32	$302,737	$293,737	$9,000	Construction	FULL SP		$293,737	$28,875,905
33	H	Northwest Arctic	1038	Kotzebue Paper and Wood Waste to Energy Project	City of Kotzebue	Local Government	Biomass	62.83	1.12	1.16	$0.42	$6.07	26.56	7.00	12.57	2.00	6.00	5.00	3.00	62.13	33	$2,692,700	$2,495,189	$95,000	DesignConstruction	PARTIAL SP	Y	$270,000	$29,145,905
34	S	Aleutians	1083	Waterfall Creek Hydroelectric Project	City of King Cove	Local Government	Hydro	71.17	1.37	1.87	$0.28		12.26	15.00	14.23	2.83	7.63	5.00	5.00	61.95	34	$5,500,000	$800,000	$1,900,000	Construction	FULL SP		$800,000	$29,945,905
35	H	Yukon-Koyukok/Upper Tan	1060	Holy Cross Water System Heat Recovery	City of Holy Cross	Government Entity	Heat Recovery	57.67	0.55	0.74	$0.53	$7.15	31.28	6.00	11.53	4.00	1.25	5.00	2.83	61.90	35	$497,773	$497,773	$14,933	DesignConstruction	FULL		$497,773	$30,443,678
36	S	Kodiak	1065	Old Harbor Hydroelectric Project Final Design and Permitting	Alaska Village Electric Cooperative, Inc.	Utility	Hydro	56.33	1.11	1.79	$0.58		25.21	7.00	11.27	2.00	5.38	5.00	4.50	60.35	36	$8,155,000	$1,092,500	$57,500	Design	PARTIAL		$400,000	$30,843,678
37	S	Southeast	1023	Swan Lake Reservoir Expansion Project	The Southeast Alaska Power Agency	Government Entity	Hydro	81.17	4.07	4.07	$0.10		4.47	15.00	16.23	3.00	11.25	5.00	5.00	59.95	37	$13,391,869	$4,000,000	$8,813,869	DesignConstruction	PARTIAL SP		$560,488	$31,404,166
38	H	Southeast	1013	Sitka Kettleson Library Air Source Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	61.17	0.91	1.87	$0.09	$3.59	15.71	15.00	12.23	5.00	1.75	5.00	4.83	59.53	38	$230,200	$230,200	$192,891	DesignConstruction	FULL		$230,200	$31,634,366
39	S	Railbelt	1084	Juniper Creek Hydroelectric Reconnaissance Study	Ram Valley, LLC	IPP	Hydro	73.17	2.45	3.49	$0.15		6.61	15.00	14.63	2.00	11.25	4.00	3.83	57.33	39	$2,350,000	$35,750	$35,750	Recon	FULL		$35,750	$31,670,116
40	H	Southeast	1010	Craig High School Wood Heat Conversion	Craig City School District	Government Entity	Biomass	66.33	1.12	1.54	$0.29	$3.80	16.63	11.00	13.27	3.00	6.38	2.00	3.50	55.77	40	$585,450	$492,850	$82,550	DesignConstruction	PARTIAL SP	Y	$125,000	$31,795,116
41	H	Lower Yukon-Kuskokwim	1042	Eek Water System Heat Recovery	City of Eek	Government Entity	Heat Recovery	70.17	1.01	1.35	$0.60	$3.89	17.02	6.00	14.03	5.00	4.50	5.00	3.83	55.39	41	$297,408	$288,745	$8,663	DesignConstruction	FULL		$288,745	$32,083,861
42	H	Southeast	1033	Sitka Sea Water Source Heat Pump Project	City and Borough of Sitka		Heat Pumps	54.83	0.50	0.52	$0.09	$3.59	15.71	15.00	10.97	4.00	0.50	5.00	4.17	55.34	42	$388,838	$373,838	$825,000	DesignConstruction	PARTIAL SP	Y	$56,841	$32,140,702
43	S	Aleutians	1062	False Pass Hydrokinetic Feasibility Study	City of False Pass	Local Government	Hydrokinetic	42.83	0.22	0.22	$0.51		22.45	13.00	8.57	2.50	0.75	5.00	2.50	54.77	43	$5,000,000	$428,646	$137,820	Feasibility	FULL		$428,646	$32,569,348
44	H	Lower Yukon-Kuskokwim	1074	Tuntutuliak Wind Heat Electrical Thermal Storage	TCSA Electrical Services	Utility	Wind to Heat	46.67	1.00	0.96	$0.65	$6.80	29.75	6.00	9.33	2.83	2.13	2.00	2.50	54.54	44	$259,817	$250,817	$9,000	Construction	FULL SP		$250,817	$32,820,165
45	S	Aleutians	1070	Sand Point Energy Storage Project	TDX Sand Point Generating, LLC	Utility	Storage of Renew	47.50	1.08	1.01	$0.58		22.55	9.00	9.50	3.00	4.125	2.00	4.00	54.18	45	$1,397,403	$1,256,403	$141,000	DesignConstruction	PARTIAL SP	Y	$200,000	$33,020,165
46	H	Copper River/Chugach	1014	Wood Chip Boiler for The Native Village of Tazlina	Native Village of Tazlina	Government Entity	Biomass	64.50	1.19	1.84	$0.28	$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	DesignConstruction	PARTIAL SP	Y	$125,000	$33,145,165
47	S	Southeast	1022	SEAPA Wind Resource Assessment Phase I and II	The Southeast Alaska Power Agency	Government Entity	Wind	90.33	1.84		$0.10		4.47	7.00	18.07	2.00	13.13	5.00	3.67	53.33	47	$170,583	$158,771	$11,812	ReconFeasibility	FULL		$158,771	$33,303,936
48	S	Kodiak	1030	Flywheels ESS for Kodiak Pier Electric Crane	Kodiak Electric Association, Inc.	Utility	Storage of Renew	66.83	0.51	1.02	$0.19		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	$34,774,484
49	S	Lower Yukon-Kuskokwim	1086	Marshall Wind Energy Final Design and Permitting Project	Alaska Village Electric Cooperative, Inc.	Utility	Wind	52.17	0.98	1.60	$0.50		22.05	7.00	10.43	2.50	1.50	5.00	3.83	52.32	49	$3,214,875	$353,400	$18,600	Design	FULL SP		$353,400	$35,127,884
50	S	North Slope	1049	Atqasuk Transmission Line Design and Permitting Project	North Slope Borough	Local Government	Transmission	74.17	3.30	3.55	$0.15		6.56	9.00	14.83	2.50	12.38	2.00	5.00	52.27	50	$17,342,837	$2,017,818	$201,782	Design	FULL SP		$2,017,818	$37,145,702
51	S	Railbelt	1028	Carlo Creek Hydroelectric Project Reconnaissance Study	Native Village of Cantwell	Government Entity	Hydro	61.00	1.90	1.88	$0.22		9.81	9.00	12.20	1.50	11.63	5.00	3.00	52.14	51	$8,340,000	$54,000	$6,000	Recon	PARTIAL		$35,000	$37,180,702
52	H	Southeast	1007	Mendenhall Valley Library Geothermal HVAC System	City & Borough of Juneau	Local Government	Heat Pumps	49.33	0.86	0.74	$0.12	$4.12	18.03	11.00	9.87	4.00	0.63	4.00	4.50	52.02	52	$625,000	$660,000	$165,000	DesignConstruction	FULL		$660,000	$37,840,702
53	H	Southeast	1012	Sitka Wastewater Treatment Plant Effluent Heat Pump	City and Borough of Sitka	Local Government	Heat Pumps	57.67	0.73	1.06	$0.09	$3.59	15.71	9.00	11.53	5.00	0.75	5.00	4.83	51.83	53	$962,984	$849,984	$113,000	DesignConstruction	FULL		$849,984	$38,690,686
54	S	Bristol Bay	1079	Koliganek Wind Diesel and Heat Recovery	New Koliganek Village Council	Government Entity	Wind	52.33	1.05	1.60	$0.51		22.09	6.00	10.47	3.83	4.13	2.00	3.17	51.68	54	$2,566,000	$306,000	$10,000	Design	FULL SP	Y	$306,000	$38,996,686
55	S	Aleutians	1080	False Pass Wind Energy Project	City of False Pass Electric Utility	Local Government	Wind	46.33	0.67	0.61	$0.51		22.45	9.00	9.27	2.50	0.38	4.00	1.67	49.26	55	$52,050	$47,050	$5,000	Feasibility	FULL SP		$47,050	$39,043,736
56	H	Railbelt	1009	Nenana Collaborative Biomass Heating System Project	Nenana School District	Government Entity	Biomass	54.67	0.66	1.11	$0.22	$4.06	17.76	7.00	10.93	3.00	1.00	5.00	4.00	48.69	56	$3,244,225	$367,965	$25,800	Design	FULL	Y	$367,965	$39,411,701
57	S	Railbelt	1081	Waste to Energy Reconnaissance Study	Chugach Electric Association, Inc.	Utility	Biomass	61.50	1.31	1.34	$0.15		6.78	15.00	12.30	0.00	8.25	2.00	4.00	48.33	57	TBD	$150,000	$100,000	Recon	PARTIAL		$50,000	$39,461,701
58	S	Copper River/Chugach	1075	Cascade Creek Hydroelectric Project Feasibility Study	Blue Hole Properties, LLC (BHP)	IPP	Hydro	45.83	1.30	3.46	$0.28		12.44	11.00	9.17	3.00	6.38	5.00	1.33	48.32	58	$2,250,000	$170,000	$30,000	Feasibility	FULL		$170,000	$39,631,701
59	H	Yukon-Koyukok/Upper Tan	1051	AGSD Extension of Heating Loop	Alaska Gateway School District	Government Entity	Heat Recovery	59.83	0.97	1.45	$0.49	$3.79	16.58	6.00	11.97	4.00	3.38	2.00	4.00	47.92	59	$629,000	$625,000	$4,000	DesignConstruction	FULL		$625,000	$40,256,701
60	H	Railbelt	1078	Chickaloon Solar Thermal and Biomass Project	Chickaloon Native Village	Government Entity	Biomass	43.67	0.74	0.79	$0.15	$3.71	16.23	11.00	8.73	3.00	0.75	2.00	4.17	45.88	60	$152,867	$127,065	$25,802	DesignConstruction	PARTIAL SP		$97,000	$40,353,701
61	S	Northwest Arctic	1001	Northwest Arctic Borough Solar PV Project	Northwest Arctic Borough	Local Government	Solar PV	46.00	0.68	0.83	$0.42		18.27	6.00	9.20	4.50	0.38	3.00	4.50	45.85	61	$77,000	$76,000	$1,000	Construction	FULL SP		$75,000	$40,428,701
62	H	Railbelt	1055	Alaska SeaLife Center Heat Recovery Project	City of Seward	Local Government	Heat Recovery	57.67	1.13	4.41	$0.11		4.59	9.00	11.53	4.50	4.88	5.00	5.00	44.50	62	$250,000	$225,000	$25,000	Construction	FULL		$225,000	$40,653,701
63	S	Bristol Bay	1018	Chignik Hydroelectric Project Design and Permitting	City of Chignik	Local Government	Hydro	52.17	1.02	1.60	$0.48		20.81	0.00	10.43	3.50	4.88	0.00	4.00	43.62	63	BLANK	$1,375,000	$0	Design	PARTIAL SP		$500,000	$41,153,701
64	S	North Slope	1048	Kaktovik Wind Diesel Design and Permitting	North Slope Borough	Local Government	Wind	65.83	1.03	1.37	$0.15		6.56	9.00	13.17	3.00	4.00	2.00	4.50	42.23	64	$4,565,200	$440,000	$44,000	Design	FULL		$440,000	$41,593,701
	SubTotal - All AEA Recommended Projects																					$222,796,483	$59,176,847	$52,555,033				$41,593,701	SubTotal

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

Count		Energy Region	ID	Project Name	Applicant	Applicant Type	Energy Source	Total Stage 2 Score	Ben / Cost				Stage 3 Review Scores (max)									Project Cost				Recommendation			
									AEA B/C	Appl B/C	Cost of Energy $/kWh	Fuel Price Sigal.	1. Cost of Energy (35)	2. Match (15)	3. Tech & Econ Feas (20)	4. Readi-ness (5)	5. Benefit (15)	6. Local Supt. (5)	7. Sustain-ability (5)	Total (100)	State-wide Rank	Project Cost	Grant Requested	Match Offered	Phase	AEA Recomnd	Entry	Recommend Funding	Cumulative Funding
	Not Recommended Projects:																											
65	S	Southeast	1019	Survey Creek Hydroelectric Project	Edna Bay Community	Local Government	Hydro	39.33	1.48	1.37	N/A											$3,562,772	$62,272	$3,500	Recon	Did Not Pass Stage 2			
66	S	Railbelt	1002	Poncelet Kinetics RHK100 Prototype Demonstration	Whitestone Power and Communications	IPP	Hydrokinetic	39.17	0.16	0.16	$0.22											$1,940,558	$1,560,558	$120,000	Construction	Did Not Pass Stage 2			
67	S	Southeast	1024	Walker Lake Hydro Project Feasibility	Tlingit-Haida Regional Electrical Authority	Utility	Hydro	39.00	1.05		$0.62											$825,000	$700,000	$125,000	ReconFeasibility	Did Not Pass Stage 2			
68	S	Railbelt	1029	Jack River Hydroelectric Project Feasibility Study	Native Village Of Cantwell	Government Entity	Hydro	35.33	0.79	1.21	$0.22											$31,500,000	$213,750	$11,250	Feasibility	Did Not Pass Stage 2			
69	S	Aleutians	1056	Adak Wind Data Collection Analysis and Preliminary Design	City of Adak, Alaska	Local Government	Wind	35.33	0.47	0.27	$0.81											$72,400,000	$160,000	$0	Feasibility	Did Not Pass Stage 2			
70	S	Northwest Arctic	1059	Cosmos Hills Hydroelectric Design and Permitting	Alaska Village Electric Cooperative	Utility	Hydro	27.50	0.71	1.05	$0.74											$38,660,000	$2,922,000	$150,000	Design	Did Not Pass Stage 2			
71	S	Kodiak	1004	Karluk Tribal Council Wind Energy System	Karluk Tribal Council	Government Entity	Wind	21.17	0.76	1.83	$0.60											$1,300,000	$81,000	$300	FeasibilityDesign	Did Not Pass Stage 2			
72	S	Southeast	1003	Mahoney Lake Hydroelectric Phase III and IV	City of Saxman	Local Government	Hydro		1.79	6.91	$0.10											$51,000,000	$4,000,000	$4,000,000	DesignConstruction	Not Recommended			
73	H	Bristol Bay	1006	NEA Stack Heat to Power Project	Naknek Electric Association, Inc.	Utility	Heat Recovery		1.39	6.44	$0.50											$1,940,379	$1,843,379	$97,000	FeasDesignConstr.	Not Recommended			
74	H	Lower Yukon-Kuskokwim	1008	Chuathbaluk Water System Heat Recovery	City of Chuathbaluk	Government Entity	Heat Recovery		0.97	0.98	$0.85											$232,430	$225,660	$6,770	DesignConstruction	Not Recommended			
75	S	Southeast	1020	Excursion Inlet Hydro Project Feasibility and Conceptual Des	Haines Borough	Local Government	Hydro		0.09	3.93	N/A											$14,500,000	$213,536	$10,000	Feasibility	Not Recommended			
76	S	Southeast	1034	Metlakatla to Ketchikan Intertie	Metlakatla Indian Community	Government Entity	Transmission		1.77	1.28	$0.10											$14,510,599	$9,281,615	$0	DesignConstruction	Not Recommended			
77	S	Southeast	1035	Feasibility Study of Tenakee Inlet Geothermal Resource	Inside Passage Electric Cooperative	Utility	Geothermal		0.44	1.24	$0.65											$49,000,000	$3,378,500	$0	Feasibility	Not Recommended			
78	S	Bristol Bay	1046	Port Alsworth Hydropower PreConstruction Phase	Port Alsworth Improvement Corporation	Government Entity	Hydro		1.52		$0.68											$7,224,213	$159,000	$10,000	ReconFeasibility	Not Recommended			
79	S	Bristol Bay	1050	Bristol Bay Borough School District Solar PV Project	Bristol Bay Borough School District	Government Entity	Solar PV		0.96	1.28	$0.50											$235,000	$230,000	$5,000	DesignConstruction	Not Recommended			
80	S	Northwest Arctic	1058	Noatak Utility Size Photovoltaic Array Construction Project	Northwest Arctic Borough	Local Government	Solar PV		1.24	1.22	$0.74											$447,800	$447,800	$0	Construction	Not Recommended			
81	S	Bristol Bay	1063	Iliamna Solar Ground Mounted Energy System	Iliamna Village Council	Government Entity	Solar PV		0.01	0.40	$0.59											$2,000,000	$800,000	$120,000	ReconFeasibility	Not Recommended			
82	S	Copper River/Chugach	1064	Chenega Bay Hydroelectric Construction	Native Village of Chenega	Government Entity	Hydro		1.14	1.02	$0.44											$1,650,000	$1,400,000	$0	DesignConstruction	Not Recommended			
83	H	Northwest Arctic	1076	NWAB School District Solar Thermal Systems	Northwest Arctic Borough School District	Government Entity	Solar Thermal		1.48	3.14	$0.63											$467,252	$456,252	$11,000	Construction	Not Recommended			
84	S	Lower Yukon-Kuskokwim	1039	Four Villages Intertie Design	Nuvista Light and Electric Cooperative	Government Entity	Transmission															$1,250,000	$1,250,000	$0	Feasibility	Did Not Pass Stage 1			
85	S	Lower Yukon-Kuskokwim	1054	Multiple Alternative Energy Sources for Napakiak	Napakiak Ircinraq Power Company	Utility	Wind															$2,284,000	$141,000	$20,000	DesignConstruction	Did Not Pass Stage 1			
86	S	Lower Yukon-Kuskokwim	1086	Chefornak High Penetration Wind Diesel System	Natergak Light Plant, City of Chefornak	Local Government	Wind															$4,358,784	$4,308,784	$50,000	DesignConstruction	Did Not Pass Stage 1			
	Sub Total - Not Recommended Projects																					$301,268,787	$33,835,106	$4,739,820					SubTotal
	Grand Total - All Applications																					$524,085,270	$93,011,953	$57,294,853				$41,593,701	GrandTotal

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 of Renewable Energy Fund Projects in Operation

				2011				2012				Note: 9 months only for 2013 Jan - Sep, 2013				Cumulative Total (2009-Sep,2013)			
				Energy Production		Fuel Displaced		Energy Production		Fuel Displaced		Energy Production		Fuel Displaced		Energy Production		Fuel Displaced	
Technology Type	Grantee	Project Name	Operation Start Date	Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value ($ x 1000)	Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value ($ x 1000)	Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value ($ x 1000)	Electrical (MWh)	Thermal (MMBtu)	Diesel (Galx1000)	Value ($ x 1000)
LANDFILL GAS	Municipality of Anchorage	Anchorage Landfill Gas Electricity	2012 Aug	-	-	-	$ -	-	-	-	$ -	33,834	-	3,224.0	$ 1,602.0	33,834	-	3,224.0	$ 1,079.0
HYDRO	City of Atka	Chuniisax Creek Hydroelectric	2012 Dec	-	-	-	$ -	-	-	-	$ -	285	-	21.9	$ 118.4	285	-	21.9	$ 118.4
HYDRO	Cordova Electric Cooperative	Humpback Creek Hydroelectric Project Rehabilitation	2011 Jul	1,563	-	114.9	$ 410.3	3,510	-	270.0	$ 1,050.6	2,933	-	225.6	$ 809.6	8,006	-	610.5	$ 2,270.5
HYDRO	Gustavus Electric Company	Falls Creek Hydroelectric Construction	2009 Jul	1,933	-	138.1	$ 483.3	1,956	-	150.4	$ 645.3	1,490	-	114.6	$ 481.1	8,044	-	583.8	$ 2,143.7
HYDRO	City of Pelican	Pelican Hydroelectric Upgrade Project	2013 Mar									711		57.8	$ 257.6	711		57.8	$ 257.6
SOLAR	Alaska Village Electric Cooperative	Kaltag Solar Construction	2012 Oct	-	-	-	$ -	-	-	-	$ -	9	-	0.6	$ 2.3	9	-	0.6	$ 2.3
TRANSMISSION	Alaska Power and Telephone	North Prince of Wales Island Intertie Project	2011 Sep	311	-	16.4	$ 67.0	589	-	44.3	$ 161.7	644	-	48.4	$ 175.0	1,544	-	109.1	$ 403.7
TRANSMISSION	Nome Joint Utility System	Nome Banner Peak Wind Farm Transmission	2010 Oct	955	-	53.9	$ 151.6	995	-	61.2	$ 193.3	700	-	43.1	$ 138.2	4,040	-	236.0	$ 730.2
WIND	Alaska Environmental Power	Delta Area Wind Turbines	2010 Sep	1,641	-	95.9	$ 256.1	989	-	63.9	$ 132.9	210	-	13.6	$ 36.4	3,429	-	202.8	$ 482.5
WIND	Alaska Village Electric Cooperative	Toksook Wind Farm	2009 Aug	560	-	37.7	$ 129.1	131	-	9.6	$ 38.5	96	-	7.0	$ 26.1	922	-	64.2	$ 238.6
WIND	Alaska Village Electric Cooperative	Mekoryuk Wind Farm	2010 Nov	239	-	13.7	$ 49.5	147	-	10.4	$ 41.1	123	-	8.7	$ 32.5	513	-	33.2	$ 123.9
WIND	Alaska Village Electric Cooperative	Quinhagak Wind Farm	2010 Nov	409	-	28.9	$ 105.6	500	-	38.1	$ 161.4	391	-	29.8	$ 116.7	1,372	-	101.9	$ 398.0
WIND	Alaska Village Electric Cooperative	Emmonak/Alakanuk Wind	2011 Sep	63	-	4.5	$ 17.7	505	-	35.8	$ 142.0	406	-	28.8	$ 111.0	975	-	69.1	$ 270.7
WIND	Alaska Village Electric Cooperative	Shaktoolik Wind Construction	2012 Apr	-	-	-	$ -	116	-	8.9	$ 35.7	119	-	9.2	$ 35.1	235	-	18.1	$ 70.8
WIND	Golden Valley Electric Association	GVEA Eva Creek Wind Turbine Purchase	2012 Oct	-	-	-	$ -	13,091	-	921.9	$ 1,972.9	50,496	-	3,556.1	$ 9,530.3	63,588	-	4,478.0	$ 11,503.2
WIND	Kodiak Electric Association, Inc.	Pillar Mountain Wind Project	2010 Sep	12,448	-	870.7	$ 2,873.3	16,201	-	1,140.9	$ 4,211.8	18,085	-	1,273.6	$ 4,385.3	65,185	-	4,584.6	$ 15,849.5
WIND	Kotzebue Electric Association	Kotzebue High Penetration Wind-Battery-Diesel Hybrid	2012 May	-	-	-	$ -	2,177	-	148.1	$ 549.9	1,941	-	132.0	$ 468.7	4,118	-	280.1	$ 1,018.5
WIND	Nome Joint Utility System	Banner Peak Wind Farm Expansion	2013 Jul	-	-	-	$ -	-	-	-	$ -	635	-	38.8	$ 124.6	635	-	38.8	$ 124.6
SubTotal				20,122	-	1,375	$ 4,543.5	40,908	-	2,904	$ 9,337.1	113,106	-	8,834	$ 18,450.9	197,443	-	14,715	$ 37,085.7
WIND	Aleutian Wind Energy	Sand Point Wind	2011 Aug	196	-	14.3	$ 64.9	792	-	58.1	$ 266.2	950	15	69.7	$ 321.9	1,937	15	142.2	$ 653.0
WIND	Kwigillingok Power Company	Kwigillingok High Penetration Wind-Diesel Smart Grid	2012 Feb	-	-	-	$ -	-	-	-	$ -	46	66	4.1	$ 19.4	46	66	4.1	$ 19.4
WIND	Puvurnaq Power Company	Kongiganak High Penetration Wind-Diesel Smart Grid	2010 Dec	88	-	6.6	$ 30.1	185	-	14.0	$ 63.4	232	454	21.9	$ 105.0	504	454	42.5	$ 198.5
WIND	Tuntutuliak Comm Svcs Assoc	Tuntutuliak High Penetration Wind-Diesel Smart Grid	2013 Jan	-	-	-	$ -	-	-	-	$ -	136	221	10.4	$ 47.4	136	221	10.4	$ 47.4
WIND	Unalakleet Valley Electric Co	Unalakleet Wind Farm	2009 Dec	958	-	58.2	$ 211.2	938	-	67.8	$ 247.6	626	204	47.2	$ 179.8	3,250	204	226.4	$ 777.2
SubTotal				1,242	-	79	$ 306.2	1,914	-	140	$ 577.2	1,988	960	153	$ 673.5	5,873	960	426	$ 1,695.5
BIOMASS	Alaska Gateway School District	Tok Wood Heating	2010 Oct	-	3,217	24.4	$ 92.0	-	4,595	44.0	$ 147.0	-	7,141	68.7	$ 250.6	-	16,371	152.1	$ 540.6
BIOMASS	Chilkoot Indian Association	Haines (Chilkoot) Central Wood Heating System Construction	2011 Oct	-	-	-	$ -	-	212	1.7	$ 6.8	-	231	2.4	$ 10.4	-	453	4.2	$ 17.3
BIOMASS	Delta/Greely School District	Delta Junction Wood Chip Heating	2011 Sep	-	-	-	$ -	-	3,977	38.2	$ 133.5	-	3,458	33.2	$ 132.6	-	7,435	71.5	$ 266.2
BIOMASS	Gulkana Village Council	Gulkana Central Wood Heating	2010 Oct	-	780	5.9	$ 23.5	-	780	7.0	$ 28.9	-	-	-	$ -	-	1,840	15.9	$ 63.3
BIOMASS	Native Village of Eyak	Cordova Wood Processing Plant	2011 Dec	-	1,500	11.4	$ 42.0	-	600	5.4	$ 25.3	-	-	-	$ -	-	2,820	24.4	$ 95.4
HEAT PUMPS	City and Borough of Juneau	Juneau Airport Ground Source Heat Pump	2011 May	-	5,117	37.1	$ 130.5	-	5,400	45.0	$ 159.0	-	5,400	45.0	$ 159.0	-	15,917	127.1	$ 448.5
HEAT PUMPS	City and Borough of Juneau	Juneau Aquatic Ctr. Ground Source Heat Pump	2011 Apr	-	-	-	$ -	-	1,740	16.7	$ 61.4	-	3,068	29.5	$ 124.8	-	4,808	46.2	$ 186.2
HEAT PUMPS	City of Seward	Alaska Sealife Center Ph II Seawater Heat Pump Project	2011 Nov	-	-	-	$ -	-	-	-	$ -	-	2,892	27.8	$ 106.2	-	2,892	27.8	$ 106.2
HEAT RECOVERY	Golden Valley Electric Association	North Pole Heat Recovery	2009 Nov	-	5,249	61.5	$ 171.5	-	3,349	32.8	$ 90.6	-	-	-	$ -	-	9,595	106.0	$ 285.2
HEAT RECOVERY	Inside Passage Electric Cooperative	Hoonah Heat Recovery Project	2012 Aug	-	-	-	$ -	-	-	-	$ -	-	4,119	36.7	$ 178.7	-	4,119	36.7	$ 178.7
HEAT RECOVERY	McGrath Light & Power Company	McGrath Heat Recovery	2010 May	-	2,896	23.0	$ 156.7	-	2,617	25.2	$ 97.1	-	1,681	16.2	$ 120.1	-	8,356	76.6	$ 419.5
HEAT RECOVERY	City and Borough of Wrangell	Wrangell Hydro Based Electric Boilers	2011 Feb	-	6,889	66.0	$ 230.3	-	7,711	79.4	$ 134.5	-	4,998	51.5	$ 82.6	-	19,597	196.9	$ 447.4
SOLAR	Golden Valley Electric Association	McKinley Village Solar Thermal	2010 Jun	-	134	1.8	$ 7.1	-	130	1.9	$ 7.6	-	108	0.8	$ 6.8	-	433	5.0	$ 23.0
Sub Total					25,782	231	$ 853.6	-	31,111	297	$ 891.7	-	33,096	312	$ 1,171.8	-	94,636	890	$ 3,077.5
TOTAL				21,364	25,782	1,684.9	$ 5,703.3	42,821	31,111	3,341.0	$ 10,806.1	115,095	34,056	9,299	$ 20,296.2	203,316	95,596	16,030	$ 41,858.7
												2013 Estimated Annualized Total							
												153,460	45,408	12,398.3	$ 27,061.6				

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 City of Pelican was pulled directly from the SCADA system installed by the AEA Energy System Upgrade

Data for the following projects in operation is not reported:
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- Cordova Electric Cooperative Cordova Heat Recovery was commercialized but shut down one week after it started-up. The Organic Rankine Cycle commenced the start-up process on June 1, 2012.

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

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.

Performance of Renewable Energy Fund Projects in Operation

Note: 9 months only for 2013

Technology Type	Grantee	Project Name	Operation Start Date	2011 Energy Production Electrical (MWh)	2011 Energy Production Thermal (MMBtu)	2011 Fuel Displaced Diesel (Galx1000)	2011 Fuel Displaced Value ($ x 1000)	2012 Energy Production Electrical (MWh)	2012 Energy Production Thermal (MMBtu)	2012 Fuel Displaced Diesel (Galx1000)	2012 Fuel Displaced Value ($ x 1000)	Jan - Sep, 2013 Energy Production Electrical (MWh)	Jan - Sep, 2013 Energy Production Thermal (MMBtu)	Jan - Sep, 2013 Fuel Displaced Diesel (Galx1000)	Jan - Sep, 2013 Fuel Displaced Value ($ x 1000)	Cumulative Total (2009-Sep,2013) Energy Production Electrical (MWh)	Cumulative Total (2009-Sep,2013) Energy Production Thermal (MMBtu)	Cumulative Total (2009-Sep,2013) Fuel Displaced Diesel (Galx1000)	Cumulative Total (2009-Sep,2013) Fuel Displaced Value ($ x 1000)
LANDFILL GAS	Municipality of Anchorage	Anchorage Landfill Gas Electricity	2012 Aug	-	-	-	$ -	-	-	-	$ -	33,834	-	3,224.0	$ 1,602.0	33,834	-	3,224.0	$ 1,079.0
HYDRO	City of Atka	Chuniisax Creek Hydroelectric	2012 Dec	-	-	-	$ -	-	-	-	$ -	285	-	21.9	$ 118.4	285	-	21.9	$ 118.4
HYDRO	Cordova Electric Cooperative	Humpback Creek Hydroelectric Project Rehabilitation	2011 Jul	1,563	-	114.9	$ 410.3	3,510	-	270.0	$ 1,050.6	2,933	-	225.6	$ 809.6	8,006	-	610.5	$ 2,270.5
HYDRO	Gustavus Electric Company	Falls Creek Hydroelectric Construction	2009 Jul	1,933	-	138.1	$ 483.3	1,956	-	150.4	$ 645.3	1,490	-	114.6	$ 481.1	8,044	-	583.8	$ 2,143.7
HYDRO	City of Pelican	Pelican Hydroelectric Upgrade Project	2013 Mar									711		57.8	$ 257.6	711		57.8	$ 257.6
SOLAR	Alaska Village Electric Cooperative	Kaltag Solar Construction	2012 Oct	-	-	-	$ -	-	-	-	$ -	9	-	0.6	$ 2.3	9	-	0.6	$ 2.3
TRANSMISSION	Alaska Power and Telephone	North Prince of Wales Island Intertie Project	2011 Sep	311	-	16.4	$ 67.0	589	-	44.3	$ 161.7	644	-	48.4	$ 175.0	1,544	-	109.1	$ 403.7
TRANSMISSION	Nome Joint Utility System	Nome Banner Peak Wind Farm Transmission	2010 Oct	955	-	53.9	$ 151.6	995	-	61.2	$ 193.3	700	-	43.1	$ 138.2	4,040	-	236.0	$ 730.2
WIND	Alaska Environmental Power	Delta Area Wind Turbines	2010 Sep	1,641	-	95.9	$ 256.1	989	-	63.9	$ 132.9	210	-	13.6	$ 36.4	3,429	-	202.8	$ 482.5
WIND	Alaska Village Electric Cooperative	Toksook Wind Farm	2009 Aug	560	-	37.7	$ 129.1	131	-	9.6	$ 38.5	96	-	7.0	$ 26.1	922	-	64.2	$ 238.6
WIND	Alaska Village Electric Cooperative	Mekoryuk Wind Farm	2010 Nov	239	-	13.7	$ 49.5	147	-	10.4	$ 41.1	123	-	8.7	$ 32.5	513	-	33.2	$ 123.9
WIND	Alaska Village Electric Cooperative	Quinhagak Wind Farm	2010 Nov	409	-	28.9	$ 105.6	500	-	38.1	$ 161.4	391	-	29.8	$ 116.7	1,372	-	101.9	$ 398.0
WIND	Alaska Village Electric Cooperative	Emmonak/Alakanuk Wind	2011 Sep	63	-	4.5	$ 17.7	505	-	35.8	$ 142.0	406	-	28.8	$ 111.0	975	-	69.1	$ 270.7
WIND	Alaska Village Electric Cooperative	Shaktoolik Wind Construction	2012 Apr	-	-	-	$ -	116	-	8.9	$ 35.7	119	-	9.2	$ 35.1	235	-	18.1	$ 70.8
WIND	Golden Valley Electric Association	GVEA Eva Creek Wind Turbine Purchase	2012 Oct	-	-	-	$ -	13,091	-	921.9	$ 1,972.9	50,496	-	3,556.1	$ 9,530.3	63,588	-	4,478.0	$ 11,503.2
WIND	Kodiak Electric Association, Inc.	Pillar Mountain Wind Project	2010 Sep	12,448	-	870.7	$ 2,873.3	16,201	-	1,140.9	$ 4,211.8	18,085	-	1,273.6	$ 4,385.3	65,185	-	4,584.6	$ 15,849.5
WIND	Kotzebue Electric Association	Kotzebue High Penetration Wind-Battery-Diesel Hybrid	2012 May	-	-	-	$ -	2,177	-	148.1	$ 549.9	1,941	-	132.0	$ 468.7	4,118	-	280.1	$ 1,018.5
WIND	Nome Joint Utility System	Banner Peak Wind Farm Expansion	2013 Jul	-	-	-	$ -	-	-	-	$ -	635	-	38.8	$ 124.6	635	-	38.8	$ 124.6
SubTotal				20,122	-	1,375	$ 4,543.5	40,908	-	2,904	$ 9,337.1	113,106	-	8,834	$ 18,450.9	197,443	-	14,715	$ 37,085.7
WIND	Aleutian Wind Energy	Sand Point Wind	2011 Aug	196	-	14.3	$ 64.9	792	-	58.1	$ 266.2	950	15	69.7	$ 321.9	1,937	15	142.2	$ 653.0
WIND	Kwigillingok Power Company	Kwigillingok High Penetration Wind-Diesel Smart Grid	2012 Feb	-	-	-	$ -	-	-	-	$ -	46	66	4.1	$ 19.4	46	66	4.1	$ 19.4
WIND	Puvurnaq Power Company	Kongiganak High Penetration Wind-Diesel Smart Grid	2010 Dec	88	-	6.6	$ 30.1	185	-	14.0	$ 63.4	232	454	21.9	$ 105.0	504	454	42.5	$ 198.5
WIND	Tuntutuliak Comm Svcs Assoc	Tuntutuliak High Penetration Wind-Diesel Smart Grid	2013 Jan	-	-	-	$ -	-	-	-	$ -	136	221	10.4	$ 47.4	136	221	10.4	$ 47.4
WIND	Unalakleet Valley Electric Co	Unalakleet Wind Farm	2009 Dec	958	-	58.2	$ 211.2	938	-	67.8	$ 247.6	626	204	47.2	$ 179.8	3,250	204	226.4	$ 777.2
SubTotal				1,242	-	79	$ 306.2	1,914	-	140	$ 577.2	1,988	960	153	$ 673.5	5,873	960	426	$ 1,695.5
BIOMASS	Alaska Gateway School District	Tok Wood Heating	2010 Oct	-	3,217	24.4	$ 92.0	-	4,595	44.0	$ 147.0	-	7,141	68.7	$ 250.6	-	16,371	152.1	$ 540.6
BIOMASS	Chilkoot Indian Association	Haines (Chilkoot) Central Wood Heating System Construction	2011 Oct	-	-	-	$ -	-	212	1.7	$ 6.8	-	231	2.4	$ 10.4	-	453	4.2	$ 17.3
BIOMASS	Delta/Greely School District	Delta Junction Wood Chip Heating	2011 Sep	-	-	-	$ -	-	3,977	38.2	$ 133.5	-	3,458	33.2	$ 132.6	-	7,435	71.5	$ 266.2
BIOMASS	Gulkana Village Council	Gulkana Central Wood Heating	2010 Oct	-	780	5.9	$ 23.5	-	780	7.0	$ 28.9	-	-	-	$ -	-	1,840	15.9	$ 63.3
BIOMASS	Native Village of Eyak	Cordova Wood Processing Plant	2011 Dec	-	1,500	11.4	$ 42.0	-	600	5.4	$ 25.3	-	-	-	$ -	-	2,820	24.4	$ 95.4
HEAT PUMPS	City and Borough of Juneau	Juneau Airport Ground Source Heat Pump	2011 May	-	5,117	37.1	$ 130.5	-	5,400	45.0	$ 159.0	-	5,400	45.0	$ 159.0	-	15,917	127.1	$ 448.5
HEAT PUMPS	City and Borough of Juneau	Juneau Aquatic Ctr. Ground Source Heat Pump	2011 Apr	-	-	-	$ -	-	1,740	16.7	$ 61.4	-	3,068	29.5	$ 124.8	-	4,808	46.2	$ 186.2
HEAT PUMPS	City of Seward	Alaska Sealife Center Ph II Seawater Heat Pump Project	2011 Nov	-	-	-	$ -	-	-	-	$ -	-	2,892	27.8	$ 106.2	-	2,892	27.8	$ 106.2
HEAT RECOVERY	Golden Valley Electric Association	North Pole Heat Recovery	2009 Nov	-	5,249	61.5	$ 171.5	-	3,349	32.8	$ 90.6	-	-	-	$ -	-	9,595	106.0	$ 285.2
HEAT RECOVERY	Inside Passage Electric Cooperative	Hoonah Heat Recovery Project	2012 Aug	-	-	-	$ -	-	-	-	$ -	-	4,119	36.7	$ 178.7	-	4,119	36.7	$ 178.7
HEAT RECOVERY	McGrath Light & Power Company	McGrath Heat Recovery	2010 May	-	2,896	23.0	$ 156.7	-	2,617	25.2	$ 97.1	-	1,681	16.2	$ 120.1	-	8,356	76.6	$ 419.5
HEAT RECOVERY	City and Borough of Wrangell	Wrangell Hydro Based Electric Boilers	2011 Feb	-	6,889	66.0	$ 230.3	-	7,711	79.4	$ 134.5	-	4,998	51.5	$ 82.6	-	19,597	196.9	$ 447.4
SOLAR	Golden Valley Electric Association	McKinley Village Solar Thermal	2010 Jun	-	134	1.8	$ 7.1	-	130	1.9	$ 7.6	-	108	0.8	$ 6.8	-	433	5.0	$ 23.0
SubTotal					25,782	231	$ 853.6	-	31,111	297	$ 891.7	-	33,096	312	$ 1,171.8	-	94,636	890	$ 3,077.5
TOTAL				21,364	25,782	1,684.9	$ 5,703.3	42,821	31,111	3,341.0	$ 10,806.1	115,095	34,056	9,299	$ 20,296.2	203,316	95,596	16,030	$ 41,858.7
									2013 Estimated Annualized Total			153,460	45,408	12,398.3	$ 27,061.6				

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- 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.

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.

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