



## **RENEWABLE ENERGY FUND ADVISORY COMMITTEE MEETING**

**Two locations via video conference:  
Alaska Energy Authority  
Board Room  
Anchorage, Alaska**

**Legislative Information Office  
Terry Miller Conference Room  
129 6th Street  
Juneau, Alaska**

**Wednesday, January 28, 2015  
4:00 pm – 5:00 pm**

Teleconference: 1-888-585-9008, code 683-021-989#

### **AGENDA**

1. Call to Order
2. Roll Call (committee members, staff, public)
3. Agenda Approval
4. Public Comments
5. REF Regional Distribution Following REFAC Recommendations 1/9/15
6. Next Meeting Date - May 14, 2015 10a-2p
7. Committee Member Comments
8. Adjournment

## Renewable Energy Fund Regional Distribution Approach (DRAFT 1/20/15)

January 28, 2015

At the Renewable Energy Fund Advisory Committee (REFAC) meeting on January 9, 2015, the committee advised the Alaska Energy Authority (AEA) to consider a new approach to the regional distribution of Renewable Energy Fund (REF) projects. Below is the three-step approach developed by AEA to respond to the committee's advice.

1. Use a regional population weighted "burden of energy cost" metric to establish regional funding bands. The burden of energy cost for a household is calculated based on:
  - a. Residential electric costs assuming 500 kWh/month use
  - b. Heating fuel cost for a community assuming regional consumption from CCHRC's recent housing assessment. Consumption levels vary based on a number of factors, most importantly temperature and house size.
  - c. Household income (Census: American Community Survey 3 year average)

$$\text{Burden of energy cost} = (\text{HH cost of electric} + \text{heat energy}) / \text{HH income}$$

This burden of energy cost is calculated for each community and then weighted by population to generate a regional burden of energy number. This burden of energy cost is used to calculate the range of funding that each region should receive, such that regions with high energy cost burden are eligible to receive more funding cumulatively across all years of the REF.

The results indicate that Yukon-Koyukuk/Upper Tanana is considered "under-served".

2. Cap all individual projects at \$1.5 million (10% of Governor's budget).
3. To achieve a better balance of funding across the state, regions that exceed the target funding band will be capped so their share of the overall fund cannot grow. This rule affects the Southeast region in this round. Therefore Southeast projects in the top funding tier are limited to recommended projects that are in communities with the highest burden of energy cost. Once the region's funding equals 22.15% of recommended funding, the remaining projects will be identified as recommended projects, but in a group outside the top tier of \$15M of Round 8 projects.

The following table identifies by energy region: REF funding to date, the burden of energy cost, and Round 8 funding before and after the REFAC-advised criteria are applied.

Energy Region	Total Rounds 1-7 Funding	% of Total Funding	Burden of Energy Cost (HH energy cost / HH income)	Round 8 Funding proposed at 1/9/15 REFAC meeting	Round 8 Funding based on REFAC recommendations
Aleutians	\$17,491,232	7%	12.12%	\$697,120	\$2,197,120
Bering Straits	\$21,429,215	9%	34.98%	\$0	\$100,000
Bristol Bay	\$13,647,042	6%	22.88%	\$859,696	\$1,305,000
Copper River/Chugach	\$21,630,131	9%	15.73%	\$500,000	\$770,807
Kodiak	\$19,499,319	8%	15.58%	\$400,000	\$488,400
Lower Yukon-Kuskokwim	\$27,822,831	11%	26.51%	\$4,857,040	\$2,148,500
North Slope	\$2,185,342	1%	2.44%	\$0	\$1,916,584
Northwest Arctic	\$23,203,362	9%	24.57%	\$579,583	\$694,583
Railbelt	\$30,106,142	12%	7.03%	\$0	\$408,000
Southeast	\$54,830,472	22%	10.64%	\$7,106,561	\$3,323,006
Yukon-Koyukuk/Upper Tanana	\$15,093,379	6%	32.96%	\$0	\$1,648,000
Statewide	\$565,439	0%	9.36%	\$0	\$0
<b>TOTAL</b>	<b>\$247,503,905</b>	<b>100%</b>	<b>215%</b>	<b>\$15,000,000</b>	<b>\$15,000,000</b>

Notes for recommendations lists:

1. \* Funding for Lepquinum Center Ground Source Heat Pump project was reduced to the \$1.5 million cap on all individual projects plus an additional \$18,473 due to regional spreading in stage 4
2. \*\* Funding for these projects was reduced to the \$1.5 million cap on all individual projects
3. Projects in bold are in underserved regions of the state
4. Shading key

	Heat project within \$15M budget
	Standard project within \$15M budget
	Heat project outside \$15M budget
	Standard project outside \$15M budget

REF Recommended Projects Round VIII, Draft for REFAC 1/28/15														
Energy Region	Project Name	Applicant	B/C	Energy Source	Tech / Econ Score	State-wide Rank	Project Cost Through Construction	Applicant Grant Requested	Applicant Match Offered	Recommended Phase(s)	AEA Recomnd	Energy cost burden	Recommend Funding	Cumulative Funding
Southeast	Angoon Low-Income Housing Pellet District Heat	Tlingit Haida Regional Housing Authority	1.79	Biomass	75.8	1	\$292,184	\$240,592	\$266,592	Design/Const	Full SP	10.6%	\$240,592	\$240,592
Southeast	Southeast Island School District Wood Boilers	Southeast Island School District	2.33	Biomass	89.3	2	\$872,635	\$832,635	\$124,708	Construction	Full	10.6%	\$832,635	\$1,073,227
Southeast	Hoonah Biomass District Heating Loop	Hoonah Indian Association	1.67	Biomass	78.0	4	\$0	\$45,000	\$30,000	Feasibility	Full	10.6%	\$45,000	\$1,118,227
Lower Yukon-Kuskokwim	Bethel Heat Recovery Assessment & Conceptual Design	Alaska Village Electric Cooperative, Inc.	3.63	HeatRecovery	71.2	5	\$9,000,000	\$645,613	\$33,980	Feasibility	Partial	26.5%	\$325,000	\$1,443,227
Aleutians	Sand Point Excess Wind Utilization	TDX Power, Sand Point Generating	2.94	HeatWind	75.7	6	\$383,900	\$307,120	\$76,780	Design/Const	Full	12.1%	\$307,120	\$1,750,347
Copper River/Chugach	Crater Lake Power and Water Project	Cordova Electric Cooperative, Inc.	2.30	Hydro, Storage	71.7	8	\$10,000,000	\$500,000	\$350,000	Feas, Design	Full SP	15.7%	\$500,000	\$2,250,347
Southeast	Hydaburg Schools Wood Fired Boiler Project	Hydaburg City School District	1.95	Biomass	86.5	9	\$660,977	\$620,977	\$40,000	Design/Const	Full	10.6%	\$620,977	\$2,871,324
Kodiak	Old Harbor Hydro – Geotechnical Study & Design	Alaska Village Electric Cooperative, Inc.	1.36	Hydro	61.0	10	\$9,200,000	\$1,092,500	\$20,000	Design	Partial	15.6%	\$400,000	\$3,271,324
Aleutians	Adak Hydro Feasibility Phase II	TDX Power, Inc.	1.52	Hydro	61.5	11	\$1,400,000	\$85,000	\$0	Feasibility	Full SP	12.1%	\$390,000	\$3,661,324
Southeast	Lepquinum Center Ground Source Heat Pump	Metlakatla Indian Community	1.80	HeatPump	77.0	12	\$3,479,490	\$3,445,040	\$34,450	Design/Const	Partial*	10.6%	\$1,481,527	\$5,142,851
Northwest Arctic	Kotzebue Paper & Wood Waste to Energy	City of Kotzebue	1.14	Biomass	64.3	14	\$2,692,700	\$2,495,189	\$250,000	Design	Partial	24.6%	\$200,000	\$5,342,851
Northwest Arctic	Ambler Washeteria & City Office Biomass	City of Ambler	1.12	Biomass	47.7	15	\$433,379	\$379,583	\$13,796	Design	Full SP	24.6%	\$379,583	\$5,722,434
Lower Yukon-Kuskokwim	Scammon Bay Community Facilities Heat Recovery	City of Scammon Bay	1.26	HeatRecovery	62.7	16	\$763,898	\$756,335	\$7,563	Design	Partial	26.5%	\$60,000	\$5,782,434
Lower Yukon-Kuskokwim	Goodnews Bay Wind	Alaska Village Electric Cooperative, Inc.	1.17	Wind	59.3	18	\$1,634,500	\$123,500	\$6,500	Feasibility	Full	26.5%	\$123,500	\$5,905,934
Southeast	Klawock Low-Income Housing Pellet	Tlingit Haida Regional Housing Authority	1.09	Biomass	59.0	19	\$102,275	\$102,275	\$314,381	Design/Const	Full SP	10.6%	\$102,275	\$6,008,209
Lower Yukon-Kuskokwim	St. Mary's-Pitka's Point Wind	Alaska Village Electric Cooperative, Inc.	1.00	Wind	56.0	20	\$4,886,000	\$4,348,540	\$537,460	Construction	Partial **	26.5%	\$1,500,000	\$7,508,209
Bristol Bay	Chignik Hydro Design & Permitting	City of Chignik	1.03	Hydro	63.0	22	\$6,610,000	\$1,305,000	\$70,000	Design	Full SP	22.9%	\$1,305,000	\$8,813,209
<b>Yukon-Koyukuk/Upper Tanana</b>	<b>Huslia Water System &amp; Clinic Biomass Boiler</b>	<b>City of Huslia</b>	<b>0.67</b>	<b>Biomass</b>	<b>40.7</b>	<b>23</b>	<b>\$503,990</b>	<b>\$499,000</b>	<b>\$89,990</b>	<b>Design</b>	<b>Partial</b>	<b>33.0%</b>	<b>\$58,000</b>	<b>\$8,871,209</b>
<b>Yukon-Koyukuk/Upper Tanana</b>	<b>Yerrick Creek Hydropower Project</b>	<b>Upper Tanana Energy, LLC (UTE)</b>	<b>1.21</b>	<b>Hydro</b>	<b>47.0</b>	<b>25</b>	<b>\$24,000,000</b>	<b>\$8,000,000</b>	<b>\$16,000,000</b>	<b>Construction</b>	<b>Partial**</b>	<b>33.0%</b>	<b>\$1,500,000</b>	<b>\$10,371,209</b>
Copper River/Chugach	Wood Boiler for the Native Village of Tazlina	Native Village of Tazlina	1.06	Biomass	68.7	26	\$324,807	\$270,807	\$54,000	Design/Const	Full	15.7%	\$270,807	\$10,642,016
Bering Straits	Koyuk Water System Heat Recovery	City of Koyuk	0.70	HeatRecovery	49.3	27	\$729,600	\$729,600	\$92,296	Design	Partial	35.0%	\$50,000	\$10,692,016
North Slope	Atkasuk Transmission Line Design & Permitting	North Slope Borough	2.19	Transmission	79.2	28	\$26,272,407	\$2,017,818	\$201,782	Design	Partial**	2.4%	\$1,500,000	\$12,192,016
Lower Yukon-Kuskokwim	Scammon Bay Hydroelectric Project	City of Scammon Bay	1.71	Hydro	40.8	29	\$4,283,056	\$305,000	\$3,050	Recon	Partial	26.5%	\$90,000	\$12,282,016
Bering Straits	Wales Water System Heat Recovery	City of Wales	0.58	HeatRecovery	49.3	30	\$706,701	\$699,163	\$7,538	Design	Partial	35.0%	\$50,000	\$12,332,016
Lower Yukon-Kuskokwim	Eek Water System Heat Recovery	City of Eek	0.59	HeatRecovery	48.0	31	\$299,754	\$296,786	\$107,968	Design	Partial	26.5%	\$50,000	\$12,382,016
<b>Yukon-Koyukuk/Upper Tanana</b>	<b>Grayling Water System Heat Recovery</b>	<b>City of Grayling</b>	<b>0.75</b>	<b>HeatRecovery</b>	<b>50.0</b>	<b>32</b>	<b>\$458,716</b>	<b>\$454,277</b>	<b>\$26,439</b>	<b>Design</b>	<b>Partial</b>	<b>33.0%</b>	<b>\$50,000</b>	<b>\$12,432,016</b>
Northwest Arctic	Shungnak Wind-Diesel Design	Native Village of Shungnak	0.69	Wind	40.0	33	\$6,000,000	\$525,000	\$27,036	Feasibility	Partial	24.6%	\$95,000	\$12,527,016
Aleutians	Waterfall Creek Hydroelectric Construction Project	City of King Cove	1.25	Hydro	40.0	34	\$5,461,000	\$1,800,000	\$1,061,000	Construction	Partial**	12.1%	\$1,500,000	\$14,027,016
<b>Yukon-Koyukuk/Upper Tanana</b>	<b>Clearwater Creek Hydropower Project</b>	<b>Alaska Power Company</b>	<b>1.23</b>	<b>Hydro</b>	<b>42.8</b>	<b>35</b>	<b>\$15,922,000</b>	<b>\$413,600</b>	<b>\$103,400</b>	<b>Feasibility</b>	<b>Partial</b>	<b>33.0%</b>	<b>\$40,000</b>	<b>\$14,067,016</b>
Northwest Arctic	100 Kilowatt Solar Array for Kotzebue	Kotzebue Electric Association Inc.	1.30	Solar	42.0	36	\$449,178	\$384,730	\$64,448	Feasibility	Partial	24.6%	\$20,000	\$14,087,016
Kodiak	Ouzinkie Hydroelectric Power Project	City of Ouzinkie	0.62	Hydro	42.8	37	\$5,541,549	\$2,516,385	\$8,840	Feasibility	Partial SP	15.6%	\$88,400	\$14,175,416
Railbelt	Grant Lake Hydroelectric Project	Kenai Hydro LLC	1.28	Hydro	45.7	38	\$59,067,808	\$4,000,000	\$36,000	Design	Partial SP	7.0%	\$358,000	\$14,533,416
Railbelt	IRHA Facility Biomass Feasibility Study	Interior Regional Housing Authority	0.97	Biomass	56.0	39	\$50,000	\$50,000	\$19,338	Feasibility	Full	7.0%	\$50,000	\$14,583,416
North Slope	Kaktovik Wind Diesel Design	North Slope Borough	1.02	Wind	48.8	40	\$4,565,200	\$440,000	\$44,000	Design	Full SP	2.4%	\$416,584	\$15,000,000
<b>Sub Total, Recommended Projects within \$15 million budget</b>							<b>\$207,047,704</b>	<b>\$40,727,065</b>	<b>\$20,123,335</b>	<b>\$15,000,000</b>				
North Slope	Kaktovik Wind Diesel Design	North Slope Borough	1.02	Wind	48.8	40	\$4,565,200	\$440,000	\$44,000	Design	Full SP	2.4%	\$23,416	\$15,023,416
<i>The remainder of the list of recommended projects (below) are those that were not recommended for funding within the \$15 million budget as a result of REFAC 1/9/15 recommendations regarding Stage 4 regional spreading. Community cost burden</i>														
Southeast	Craig High School Wood Heat Conversion	Craig City School District	1.98	Biomass	82.5	3	\$679,950	\$493,100	\$186,850	Design/Const	Full	13.5%	\$493,100	\$15,516,516
Southeast	Neck Lake Hydropower Project	Alaska Power Company	0.94	Hydro	63.5	13	\$3,011,475	\$391,200	\$97,800	Feas, Design	Full	13.2%	\$391,200	\$15,907,716
Southeast	Sitka: Wastewater Treatment Plant Effluent Heat Pump	City & Borough of Sitka Public Works Dept.	1.41	HeatPump	83.5	7	\$740,000	\$627,000	\$168,278	Design/Const	Full	10.0%	\$627,000	\$16,534,716
Southeast	Gateway Borough Rec & Schools Central Heating	Ketchikan Gateway Borough	1.97	Biomass	89.3	17	\$2,200,000	\$220,000	\$0	Feas, Design	Full	11.0%	\$220,000	\$16,754,716
Southeast	SEAPA Wind Resource Assessment	The Southeast Alaska Power Agency	1.79	Wind	81.8	21	\$170,583	\$88,742	\$81,842	Recon, Feas	Full	11.0%	\$88,742	\$16,843,458
Southeast	Ketchikan High School Biomass Boiler	Ketchikan Gateway Borough	1.46	Biomass	83.2	24	\$1,408,908	\$1,288,018	\$0	Construction	Full	11.0%	\$1,288,018	\$18,131,476
<b>Total, All Recommended Projects</b>							<b>\$215,258,620</b>	<b>\$43,835,125</b>	<b>\$20,658,105</b>	<b>\$18,131,476</b>				