

2/27/12

ALASKA ENERGY

AUTHORITY:

OVERVIEW OF

ENERGY PROJECTS

<TARGET><BILL></BILL><SUBJECT>2-27-12 ALASKA ENERGY
AUTHORITY OVERVIEW OF ENERGY
PROJECTS</SUBJECT><COMM>SFIN27</COMM></TARGET>

AHFC Energy Programs Update

Weatherization Program

- Assisting homeowners for 30 years
- Income based
- Homeowners and renters may apply
- Services provided at no cost by 17 providers
- Strong history of performance



Weatherization Program

Funding level prior to and after FY2008 appropriation

Average Expense Per Unit

Road & Marine Highway



Air only



FY 2012 100 % OF MEDIAN INCOME LIMITS FOR ALASKA

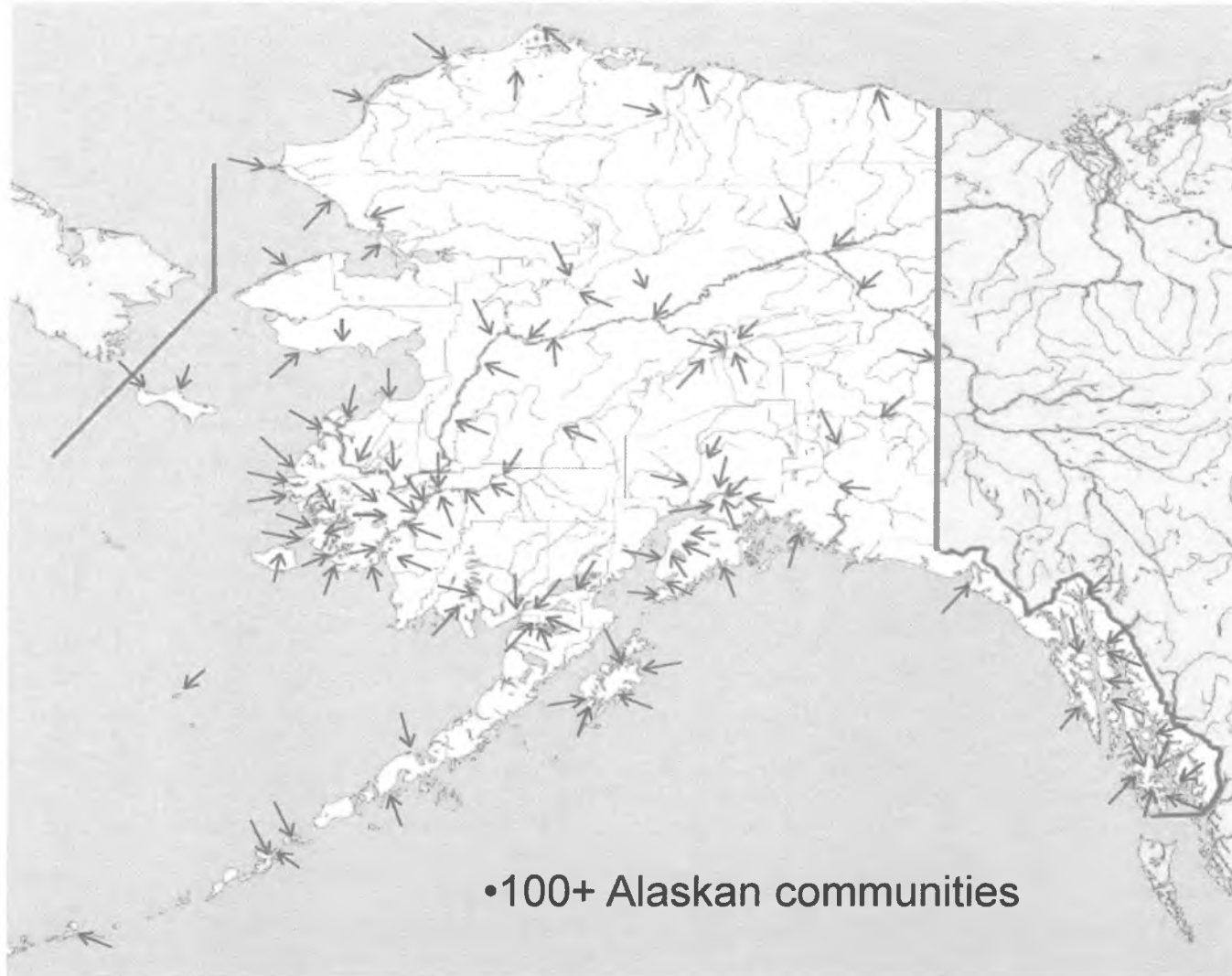
Effective
December 1,
2011

Community Name	INCOME LIMIT - 1 PERSON	INCOME LIMIT - 2 PERSONS	INCOME LIMIT - 3 PERSONS	INCOME LIMIT - 4 PERSONS	INCOME LIMIT - 5 PERSONS	INCOME LIMIT - 6 PERSONS	INCOME LIMIT - 7 PERSONS	INCOME LIMIT - 8 PERSONS	EA ADDED FAMILY MEMBER
Anchorage Municipality Low Income Limit	59,700	68,900	76,700	85,200	92,100	9			
Aleutians East Borough Low Income Limit	49,800	56,900	64,000	71,100	76,800	8			
Aleutians West Census Low Income Limit	60,900	69,600	78,300	87,000	94,000	10			
Bethel Census Area Low Income Limit	55,300	63,200	71,100	79,000	85,400	9			
Bristol Bay Borough Low Income Limit	55,600	63,500	71,400	79,300	85,700	9			
Denali Borough Low Income Limit	68,500	78,300	88,100	97,800	105,700	11			
Dillingham Census Area Low Income Limit	49,800	56,900	64,000	71,100	76,800	8			
Fairbanks North Star Borough Low Income Limit	59,300	67,700	76,200	84,600	91,400	98,200	105,000	111,700	6,788
Haines Borough Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
Hoonah-Angoon Census Area Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
Juneau Borough Low Income Limit	66,000	75,400	84,800	94,200	101,800	10			
Kenai Peninsula Borough Low Income Limit	52,100	59,600	67,000	74,400	80,400	8			
Ketchikan Gateway Borough Low Income Limit	54,600	62,400	70,200	78,000	84,300	9			
Kodiak Island Borough Low Income Limit	49,800	56,900	64,000	71,100	76,800	8			
Lake and Peninsula Borough Low Income Limit	49,800	56,900	64,000	71,100	76,800	8			
Matanuska-Susitna Borough Low Income Limit	59,300	66,600	74,900	83,200	89,900	9			
Nome Census Area Low Income Limit	50,100	57,200	64,400	71,500	77,300	8			
North Slope Borough Low Income Limit	53,700	61,400	69,100	76,700	82,900	89,000	95,200	101,300	6,136
Northwest Arctic Borough Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
Petersburg Census Area Low Income Limit	55,400	63,300	71,200	79,100	85,300	91,800	98,100	104,500	6,328
Prince of Wales-Hyder Census Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
Sitka City & Borough Low Income Limit	53,000	60,600	68,200	75,800	81,800	87,900	93,900	100,000	6,056
Skagway Municipality Low Income Limit	55,400	63,300	71,200	79,100	85,500	91,800	98,100	104,500	6,328
Southeast Fairbanks Census Area Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
Valdez-Cordova Census Low Income Limit	51,800	59,200	66,600	73,900	79,900	85,800	91,700	97,600	5,912
Wade Hampton Census Area Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
Wrangell City and Borough Census Area Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
Yakutat City & Borough Low Income Limit	55,400	63,300	71,200	79,100	85,500	91,800	98,100	104,500	6,328
Yukon-Koyukuk Census Area Low Income Limit	49,800	56,900	64,000	71,100	76,800	82,500	88,200	93,900	5,688
2012 DOE Poverty Income Levels	25,080	33,860	42,640	51,420	60,200	68,980	77,760	86,540	8,780

\$59,700
1 Person in
Anchorage

\$25,080
DOE Income Level

Weatherization Program



•100+ Alaskan communities

Weatherization Program

State Funding Levels

SFY 2008	\$200 million
SFY 2011	\$64 million
<hr/>	
Total	\$264 million



Weatherization Program

Update

Current totals December, 31 2011

Total expended	\$144.6m
Units complete	5,649

Projected totals March 31, 2012

Total expended	\$164.2m
Total units complete	7,681

Projected totals March 31, 2013

Total expended	\$245m
Total units complete	10,500

Weatherization Program



Benefits

- Resident health and safety
- Fire safety
- Improves building stock
- Job creation
- Invests in local communities
- **Energy Savings**

Home Energy Rebate Program

- Open to all Alaskans not participating in the Weatherization program
- No income requirements
- Owner-occupied, year-round residences
- Homeowners pay upfront and are then rebated
- “As-Is & Post” energy ratings



Home Energy Rebate Program

State Funding Levels

SFY 2008	\$100 million
SFY 2009	\$60 million
SFY 2011	\$37.5 million
Total	\$197.5 million



Home Energy Rebate Program

Results

April 2008 – Jan 30, 2012

➤ Rebates	16,098	\$102.6m
➤ As-Is	28,365	\$9.2m
➤ Post	16,158	\$2.8m
➤ 5 Star Plus	1,317	\$9.9m

Total Expended		\$130.5m
----------------	--	----------

Home Energy Rebate Program

First Name* _____
 Middle Name _____
 Last Name* _____

Physical Address

Address 1* _____
 Address 2 _____
 City* _____
 Zip Code* _____

Mailing Address Same as Physical Address

Address 1* _____
 Address 2 _____
 City* _____
 Zip Code* _____

Primary Phone* 907 _____
 Secondary Phone _____
 Email Address _____

Waitlist

All communities

1,746

Dispatch

500/month

Home Energy Rebate Program

Program Snapshot

Average Improvement Costs of 15,906 Homeowners

\$11,009 spent
-\$6,375 rebate
-\$325 As-Is
-\$175 Post

= **\$4,134** homeowner
investment

Home Energy Rebate Program

Savings

Average home energy savings

33 percent

Average home cost savings

\$1,297/year

Home Energy Rebate Program

Home Energy Rebate Program Statewide Annual Outcome Estimates as of 9/30/11

Estimates	Home Energy Rebate Program
Total Energy Savings	1,649,785 MMBTUs
Total CO2 Emissions Reduced	101,906 net tons
Average home energy savings	33%
Average home cost savings	\$1,297/year
Average Home Age	33.6 years
As is rating	2 Star Plus
Post rating	4 Star
Average increase in rating	3 Steps

5 Star Plus New Home Rebate

AHFC provides a \$7,500 rebate for new 5 Star Plus homes.

- Not more than one year old
- For original owner
- Must meet all AHFC property financing requirements
- 5 Star Plus energy rating

Rebates

Total Expended

1,317 rebates

\$9.9 million

Second Mortgage for Energy Conservation

- Second mortgage up to \$30,000
- 15 Year Loan at the Taxable Rate
- Active Loans: **77**
- Loans Paid Off: **59**



Alaska Energy Efficiency Revolving Loan Fund (AEERLF)

\$250m available for energy efficiency improvements for:

- | | |
|-----------------------|-----------------------|
| -Schools | -State facilities |
| -University of Alaska | -Municipal facilities |

Savings from energy efficiency improvements are used to pay off the loan

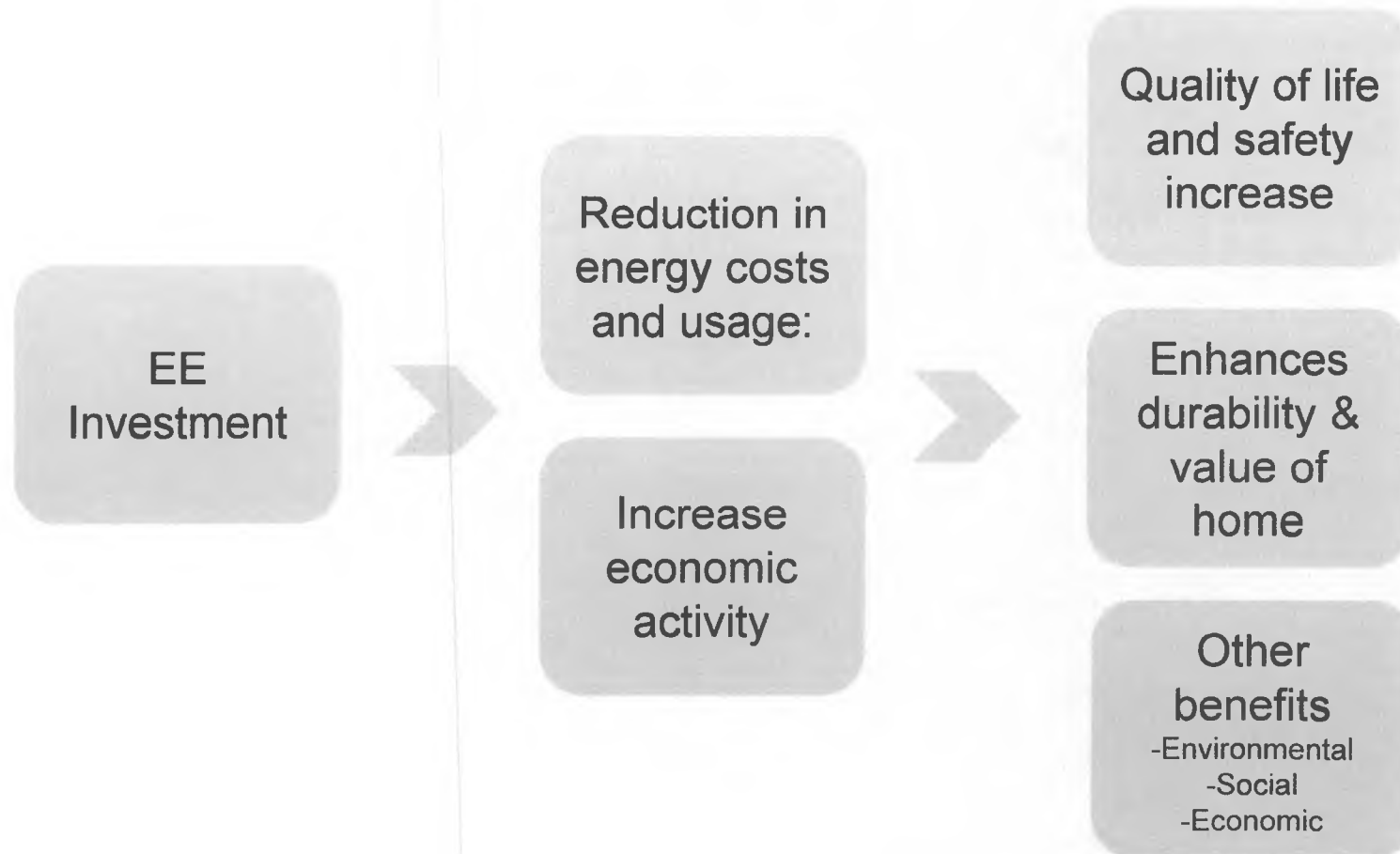


Alaska Energy Efficiency Revolving Loan Fund (AEERLF)

- Benchmarked 1200+ facilities
- Over 300 Investment Grade Audits to be completed
- One loan application submitted to AHFC



Energy Efficiency Benefits







Renewable Energy Fund Program Status



Alaska Legislature
Juneau
February 27, 2012

Renewables and other Projects 5-Year State Funds

Renewable Energy, Emerging Energy Technology & Other Large Energy Development Projects
5 Year Funding Levels - FY2008 thru FY2012
Prepared by the Alaska Energy Authority
February 11, 2012

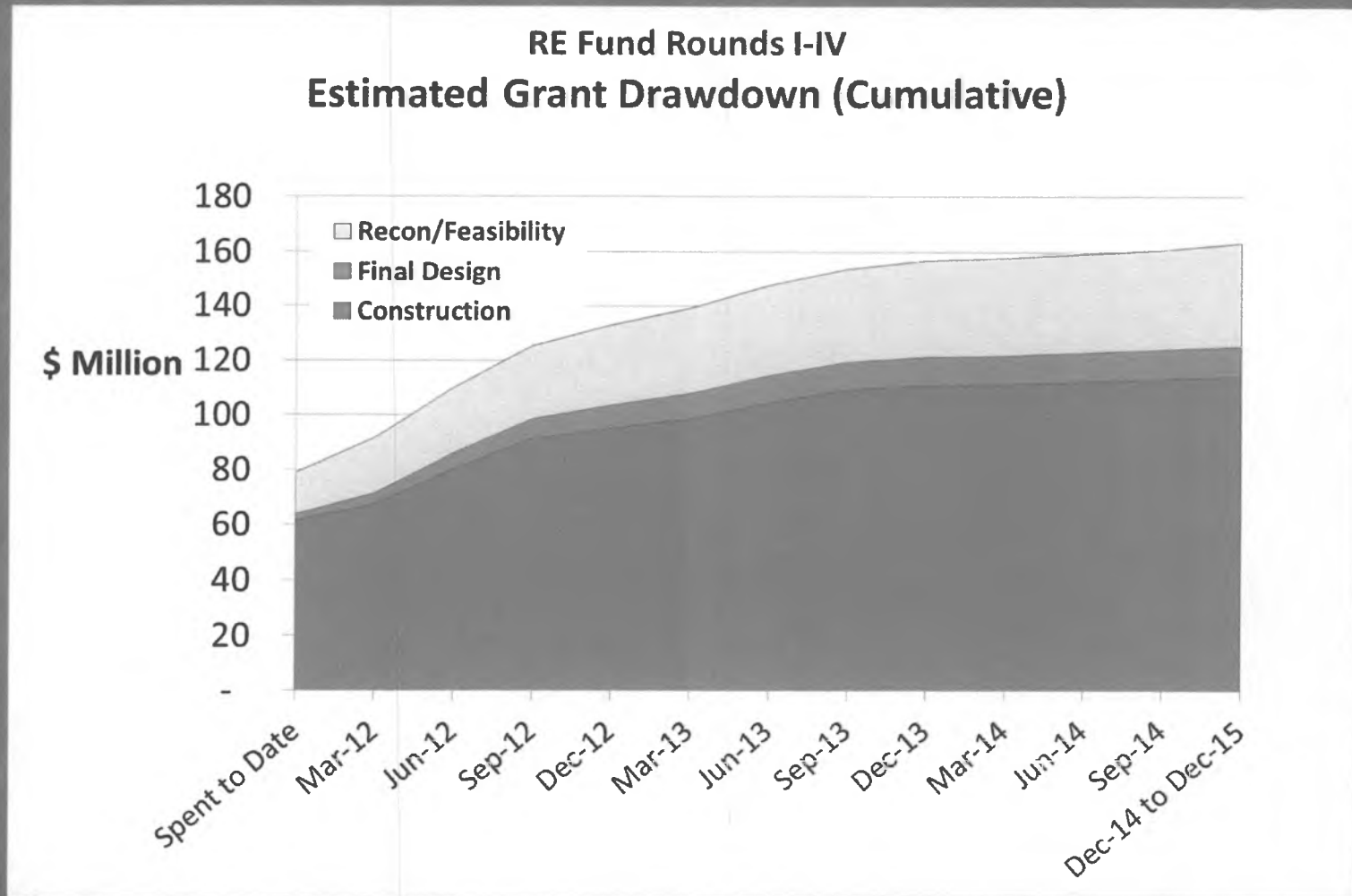
Program Type	No. of Projects	Renewable Energy Funds	Other State Funds	Total State Funding
Renewable Energy Programs:				
Biomass	49	18,279,657	1,398,091	19,677,748
Heat Recovery - Other Diesel	27	8,464,017	1,360,381	9,824,397
Energy Efficiency & Conservation	23	-	3,455,910	3,455,910
Geothermal	16	14,452,219	12,553,038	27,005,257
Hydropower	81	46,139,814	64,211,988	110,351,803
Ocean & River Energy	4	2,718,175	442,347	3,160,522
Energy Generation - Transmission	28	24,869,271	48,342,629	73,211,900
Wind Energy	74	61,351,725	11,183,563	72,535,288
Solar Power	6	325,122	58,747	383,869
Emerging Energy Technology	TBD	-	4,800,000	4,800,000
Large Energy Development Projects:				
Susitna-Watana Hydroelectric Project	1	-	75,970,435	75,970,435
Fire Island Wind Farm T-Lines	1	-	25,000,000	25,000,000
	310	176,600,000	248,777,129	425,377,129

RE Fund Grant Status

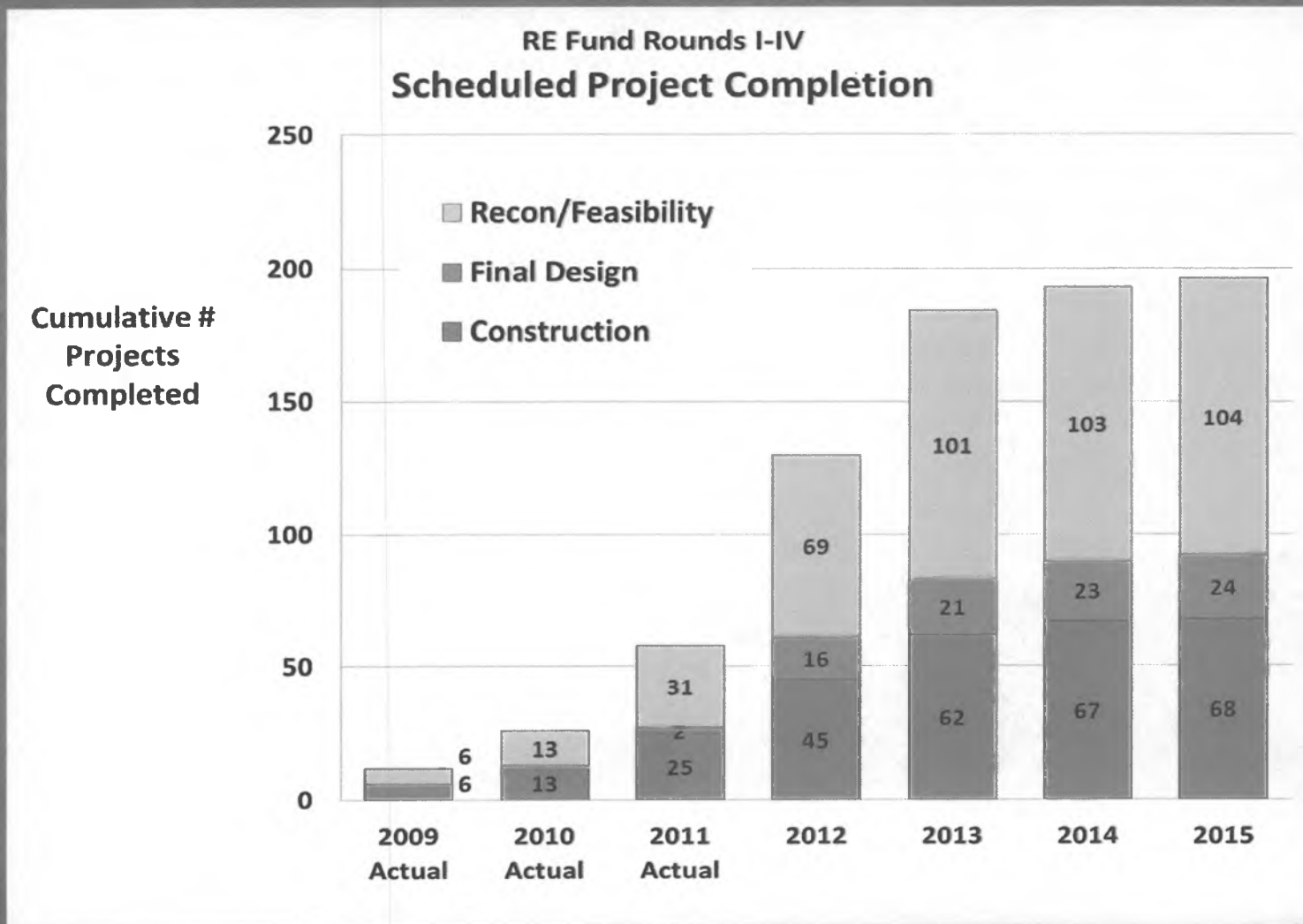
Feb 17, 2012

Round	I	II	III	IV	V	Total
Applications Received	112	118	123	108	97	558
Projects Funded	79	30	25	74	tbd	208
Grants in Place	72	29	19	49	0	165
Grants Completed	23	4	0	0	0	27
Grants Cancelled	5	1	3	0	0	9
Amount Requested (\$M)	\$453.8	\$293.4	\$223.5	\$123.1	\$132.9	\$1,226.7
AEA Recommended (\$M)	\$100.0	\$36.8	\$65.8	\$36.6	\$43.2	\$282.4
Appropriated (\$M)	\$100.0	\$25.0	\$25.0	\$26.6	tbd	\$176.6
Cash Disbursed (\$M)	\$54.9	\$17.1	\$6.2	\$2.6	\$0	\$80.8
Match provided (\$M)	\$20.7	\$22.6	\$10.5	\$34.6	tbd	\$88.4
Other Contributions (\$M)	\$9.2	\$1.6	\$0.8	\$14.5	tbd	\$26.1
Can be reallocated (\$M)	\$0	\$0	\$0.2	\$0	\$0	\$0.2

RE Fund Drawdown Outlook



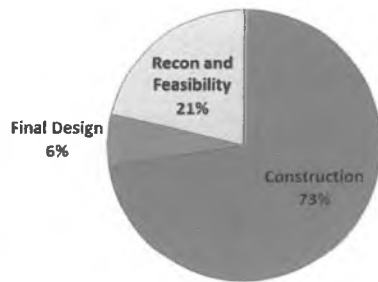
RE Fund Project Completion



Pre-construction Projects (R1-4)

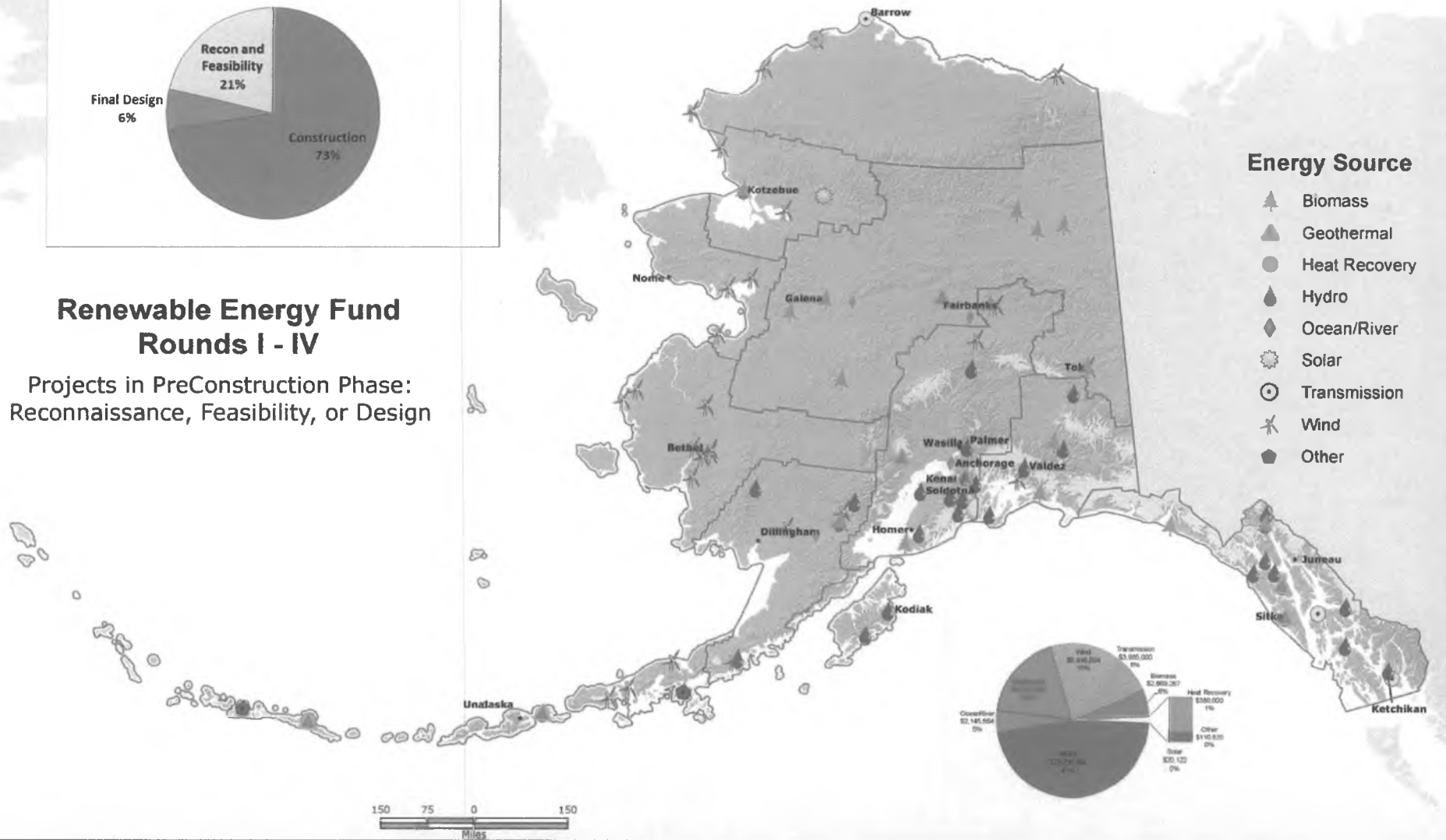


Funding by Project Phase
REF Rounds I-IV



Renewable Energy Fund Rounds I - IV

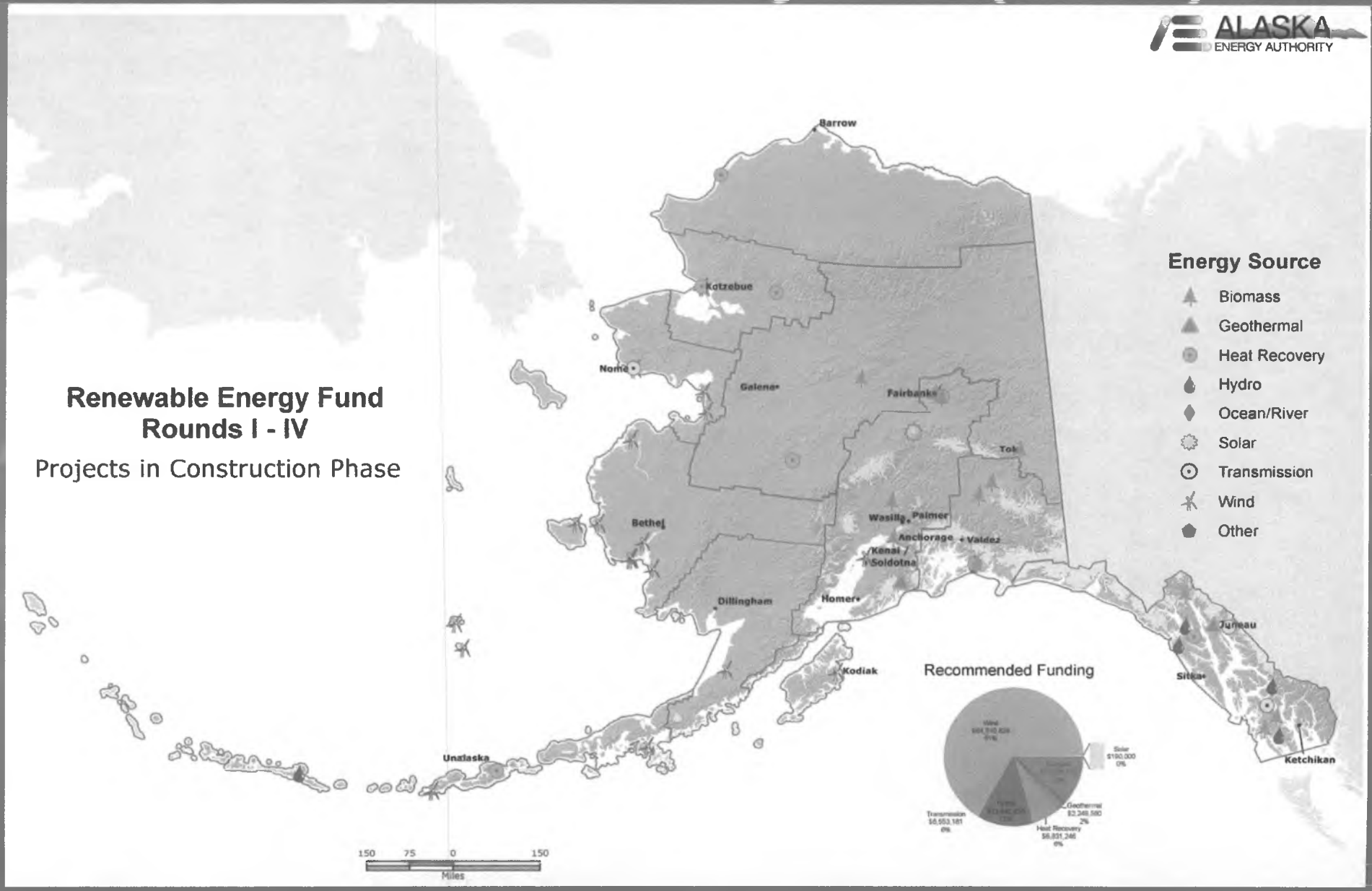
Projects in PreConstruction Phase:
Reconnaissance, Feasibility, or Design



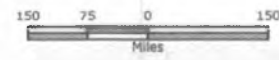
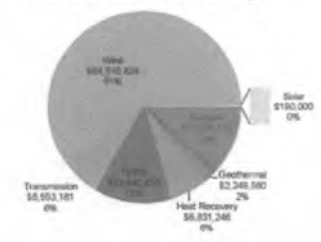
Construction Projects (R1-4)



**Renewable Energy Fund
Rounds I - IV**
Projects in Construction Phase



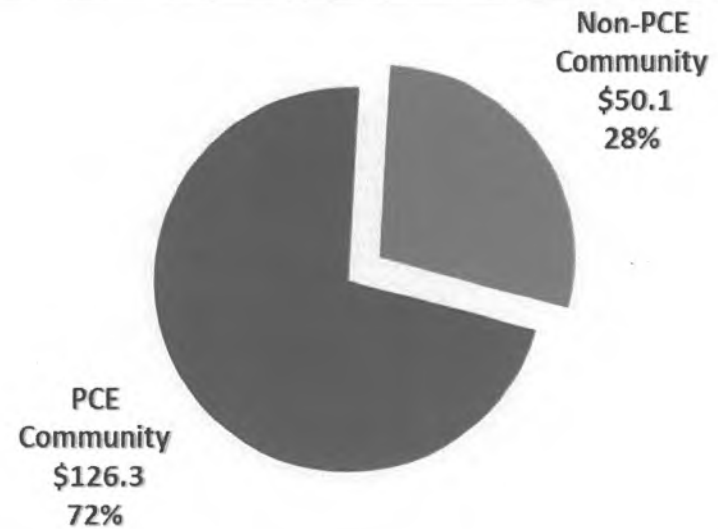
Recommended Funding



Funding Allocation by

(\$ x million, Rounds I – IV)

- PCE vs Non-PCE



- Heat vs Power

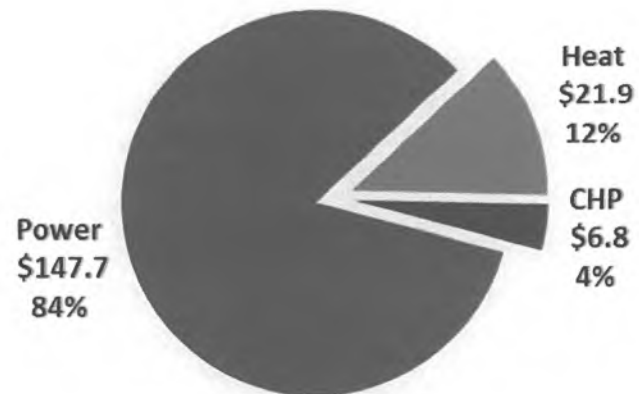
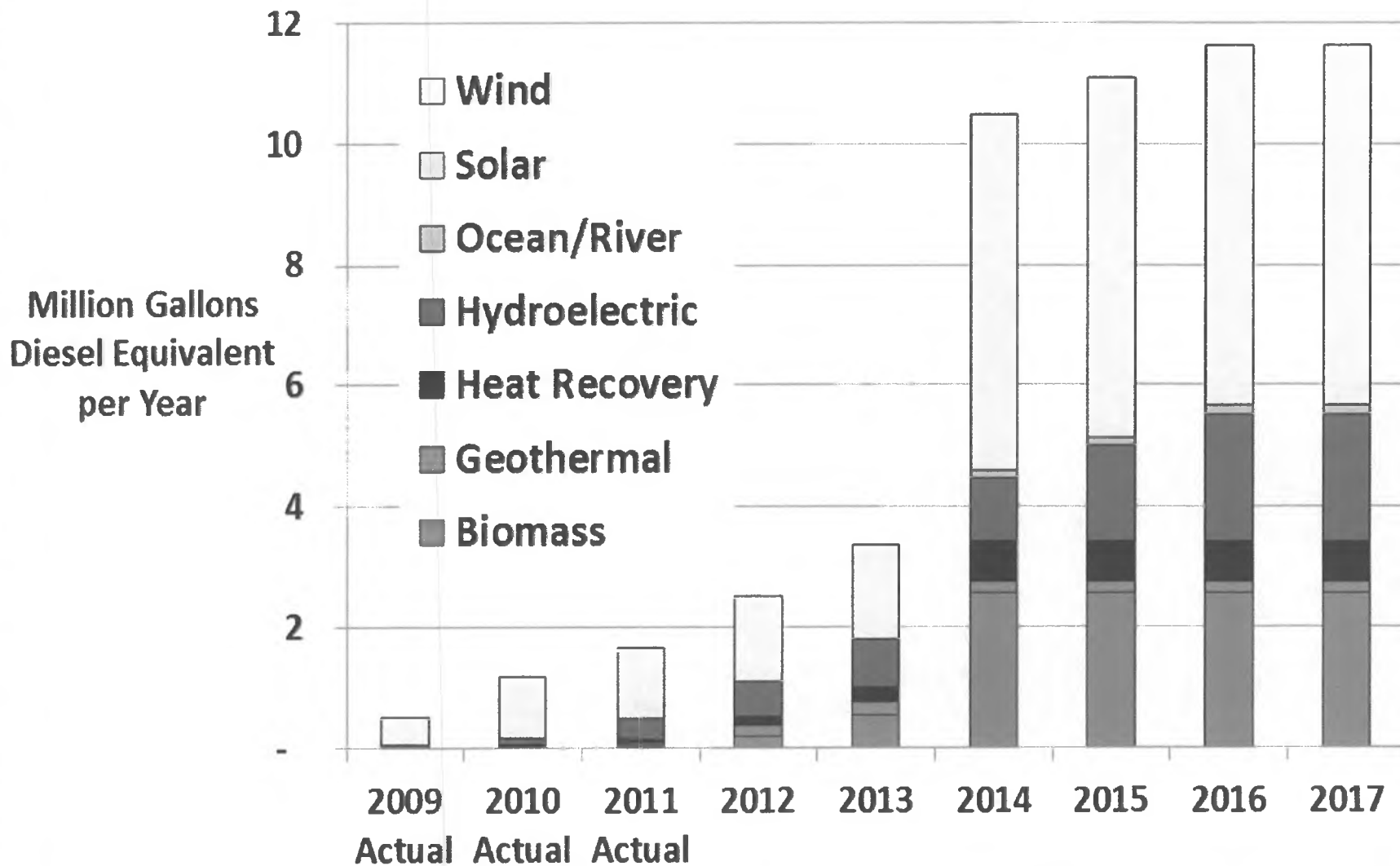


Fig. 3. RE Fund Rounds I-IV

Annual Fuel Savings--Actual and Projected



Cost of Scheduled Construction Projects, Rounds I – IV

	Million
RE Fund Grants	\$123.3
Other State Funds	22.9
Non-state and Local	218.7
TOTAL	\$364.9

Energy production and diesel cost savings-2011

Resource	Grantee	Project Name	Energy Performance					Economic Performance					
			2011 Energy Production		Diesel Displaced (gal x 1000)		Actual / Goal	Project Cost (\$ x 1000)		2011 Fuel Savings (\$ x1000)	Simple Payback (Years) on:		Project Life
			Electrical (MWh)	Thermal (mmBtu)	2011 Actual	Goal		Total Cost	REF Funding		Total Cost	REF Funding	
Biomass	Alaska Gateway School District	Tok Wood Heating	-	3.2	24.4	50.4	48%	3,260	3,245	92	35	35	20
	Native Village of Eyak	Cordova Wood Processor	-	1.5	11.4	88.7	13%	78	75	42	2	2	20
	Gulkana Village Council	Gulkana Central Wood Heating	-	0.8	5.9	14.6	40%	500	500	24	21	21	20
Geothermal	City and Borough of Juneau	Juneau Airport GS Heat Pump	-	5.1	37.1	29.5	126%	1,026	513	131	8	4	20
Heat Recovery	Golden Valley Electric Assoc	North Pole Heat Recovery	-	5.2	61.5	89.6	69%	1,022	817	172	6	5	20
	McGrath Light & Power Co	McGrath Heat Recovery	-	2.9	23.0	32.0	72%	1,179	712	157	8	5	20
Hydro	City and Borough of Wrangell	Wrangell Hydro Electric Boilers	-	6.9	66.0	69.6	95%	2,082	2,000	230	9	9	20
	Gustavus Electric Co	Falls Creek Hydroelectric	1,933	-	138.1	118.3	117%	8,400	750	483	17	2	50
Solar	Golden Valley Electric Assoc	McKinley Village Solar Thermal	-	0.1	1.8	5.7	31%	194	193	7	27	27	20
Wind	Kodiak Electric Association	Pillar Mountain Wind	12,448	-	870.7	852.0	102%	21,400	4,000	2,873	7	1	20
	Alaska Env Power	Delta Area Wind	1,425	-	95.9	117.0	82%	2,802	2,000	256	11	8	20
	Alaska Village Electric Coop	Toksook Wind Farm	187	-	12.6	16.3	77%	1,253	1,038	43	29	24	20
	Nome Joint Utility Systems	Banner Pk Wind Transmission	955	-	53.9	191.3	28%	6,390	801	152	42	5	20
	Unalakleet Valley Electric Co	Unalakleet Wind Farm	958	-	58.2	61.9	94%	6,000	4,000	211	28	19	20
TOTAL			17,907	25.8	1,460.4	1,736.8	84%	55,585	20,645	4,872	11	4	

1. Includes projects in operation in January 2011 or before.
2. Tok Wood Heating project shut down June-Dec for steam turbine installation.
3. Nome Banner Peak wind project is privately owned. The RE Fund paid only for the intertie. 11

Challenges/Opportunities

Focus on the entire energy system

- Reliable, efficient diesel systems first
- Reduce demand through EE

Deliverables

- Reduce and stabilize costs to residents
- Displace diesel
- Assist in project development

Monitor technical and economic performance

Thank you.

Alaska Energy Authority
813 West Northern Lights Boulevard
Anchorage, Alaska 99503

www.akenergyauthority.org