

Round 14 (FY2023) Renewable Energy Fund (REF) Status Report

Alaska Energy Authority —
Renewable Energy Fund – Round XIV

Alaska State Legislature
April 2022



SAFE,
RELIABLE, &
AFFORDABLE
ENERGY
SOLUTIONS

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REF Overview

The Alaska Renewable Energy Fund (REF) is a competitive grant program that was established by the Alaska State Legislature in 2008 and is now in its fourteenth annual funding cycle (i.e. Round). The program was established to help fund cost-effective renewable energy projects throughout the state. These projects are intended to help communities reduce their dependence on fossil fuels in order to stabilize their costs of both heat and electricity. The program also creates jobs, promotes renewable energy technology transfer within Alaskan communities, utilizes local energy resources, keeps money in local economies, and fosters economic development. As December 31, 2021, the REF has funded \$284 million worth of projects since its inception.



REF Statutory Guidance (AS 42.45.045)

Eligible projects must:

Be a new project not in operation in 2008, and

- be a hydroelectric facility;
- direct use* of renewable energy resources;
- a facility that generates electricity from fuel cells that use hydrogen from renewable energy sources or natural gas** (subject to additional conditions); or
- be a facility that generates electricity using renewable energy.
- natural gas** applications must also benefit a community that
 - Has a population of 10,000 or less, and
 - Does not have economically viable renewable energy resources it can develop.

*3 AAC 107.615 a project is a "direct use" of RE resources if it uses renewable energy resources to generate or to make a fuel used to generate energy

Evaluation process

Develop a methodology for determining the order of projects that may receive assistance,

- most weight being given to projects that serve any area in which the average cost of energy to each resident of the area exceeds the average cost to each resident of other areas of the state,
- significant weight given to a statewide balance of grant funds and to the amount of matching funds an applicant is able to make available
- The REF evaluation process is comprised of four stages.



Request for Applications Schedule – REF Round XIV

DATE / ANTICIPATED DATE	ACTION
Nov 16, 2021	Request for Applications posted
Jan 18, 2022	Application submission deadline
Jan - Apr 2022	Evaluation of Applications
Apr 15, 2022	REFAC Meeting
Apr 19, 2022	Submission of recommendations to Legislature
July 1, 2022	Capital funds appropriated by Legislature – Grants could begin



REF Evaluation Process - Stage 1 – Eligibility and Completeness

The REF evaluation process is comprised of four stages. Stage one is an evaluation of applicant and project eligibility and application completeness, as per 3 AAC 107.635. This portion of the evaluation process is conducted by AEA staff.

- Applicant eligibility is defined as per AS 42.45.045 (l).
 - *“electric utility holding a certificate of public convenience and necessity under AS 42.05, independent power producer, local government, or other governmental utility, including a tribal council and housing authority;”*
- Project eligibility is defined as per AS 42.45.045 (f)-(h) and is provided on the preceding page.
- Project completeness
 - An application is complete in that the information provided is sufficiently responsive to the RFA to allow AEA to consider the application in the next stage (stage two) of the evaluation.
 - The application must provide a detail description of the phase(s) of project proposed.

STAGE 1 CRITERIA	PASS/FAIL
Applicant eligibility, including formal authorization and ownership, site control, and operation	PASS/FAIL
Project Eligibility	PASS/FAIL
Complete application, including Phase description(s)	PASS/FAIL

Applications which fail to meet the requirements of stage one will be rejected by the authority, and will notify each applicant whose application is rejected of the authority's decision.



REF Evaluation Process - Stage 2 – Technical and Economic Feasibility

Stage two is an evaluation concerning technical and economic feasibility. This portion of the evaluation process is conducted by AEA staff, Alaska Department of Natural Resources, and contracted third-party vendors.

The following items are evaluated as part of the stage two evaluation, as required per 3 AAC 107.645:

- Project management, development, and operations
- Qualifications and experience of project management team, including on-going maintenance and operation
- Technical feasibility – including but not limited to sustainable current and future availability of renewable resource, site availability and suitability, technical and environmental risks, and reasonableness of proposed energy system
- Economic feasibility and benefits – including but not limited to project benefit-cost ratio, project financing plan, and other public benefits owing to the project

All stage 2 criteria are weighted as follows as part of the evaluation process. Those applications that score below 40 points in this stage will be automatically rejected by the authority, however, those projects scoring above 40 can also be rejected as under 3 AAC 107.645(b) has the authority to reject applications that it determines to be not technically and economically feasible, or do not provide sufficient public benefit.

CRITERIA	CRITERIA DESCRIPTION	WEIGHT
1	Project management, development, and operation	25%
2	Qualifications and experience	20%
3	Technical feasibility	20%
4.a	Economic benefit-cost ratio	25%
4.b	Financing plan	5%
4.c	Other public benefit	5%



REF Evaluation Process - Stage 3 – Project Ranking

Stage three is an evaluation concerning the ranking of eligible projects. This portion of the evaluation process is conducted by AEA staff in conjunction with solicitation from the Renewable Energy Fund Advisory Committee (REFAC) .

The following items are evaluated as part of the stage three evaluation, as required per 3 AAC 107.655-660:

- Cost of energy
- Applicant matching funds
- Project feasibility (levelized score from stage 2)
- Project readiness
- Public benefits (evaluated through stage 2 benefits)
- Sustainability
- Local Support
- Regional Balance
- Compliance

All stage 3 criteria are weighted as follows as part of the evaluation process. The stage 3 scoring is used to determine the ranking score.

CRITERIA	CRITERIA DESCRIPTION	WEIGHT
1	Cost of Energy	30%
2	Matching Funds	15%
3	Project Feasibility (levelized score from stage 2)	25%
4	Project Readiness	5%
5	Public Benefits	10%
6	Sustainability	10%
7	Local Support	5%
8	Regional Balance	Pass/Fail
9	Compliance	Pass/Fail



REF Evaluation Process - Stage 4 – Regional Spreading

Stage four is a final ranking of eligible projects, as required per 3 AAC 107.660, which gives “significant weight to providing a statewide balance of grant money, taking into consideration the amount of money available, number and types of projects within each region, regional rank, and statewide rank.” This portion of the evaluation process is conducted by AEA staff in conjunction with solicitation from the Renewable Energy Fund Advisory Committee (REFAC) .

The following items are evaluated as part of the stage four evaluation, as required per 3 AAC 107.660:

- Cost of energy burden = [HH cost of electric + HH heat cost] ÷ [HH income] – this is used to determine target funding allocation by region – for regional spreading

Stage 4 cost of energy burden given below. The below table indicates target funding, as has been allocated, by region, this will be applied to stage 3 statewide ranking to determine the regionally-spread rank.

Cumulative through Round 13									
Energy Region	Total Round 1-13 Funding		Cost of Power Allocation				Population		Even Split
	Grant Funding	% Total	Cost burden (HH cost/HH income)	Allocation cost of energy basis	Additional funding needed to reach 50%	% of target allocation	% Total	Allocation per capita basis	Allocation per region basis
Aleutians	\$17,565,348	7%	9.26%	\$18,857,207	(\$8,136,744)	93%	1%	\$3,036,869	\$23,418,114
Bering Straits	\$20,906,582	8%	15.43%	\$31,398,914	(\$5,207,125)	67%	1%	\$3,516,125	\$23,418,114
Bristol Bay	\$12,270,130	5%	14.40%	\$29,312,927	\$2,386,333	42%	1%	\$2,660,674	\$23,418,114
Copper River/Chugach	\$27,663,273	11%	6.93%	\$14,096,383	(\$20,615,081)	196%	1%	\$3,291,064	\$23,418,114
Kodiak	\$16,486,919	6%	5.83%	\$11,866,689	(\$10,553,574)	139%	1%	\$3,143,209	\$23,418,114
Lower Yukon-Kuskokwim	\$37,273,384	14%	17.83%	\$36,284,058	(\$19,131,355)	103%	4%	\$9,553,810	\$23,418,114
North Slope	\$2,069,151	1%	3.87%	\$7,881,335	\$1,871,517	26%	1%	\$2,653,027	\$23,418,114
Northwest Arctic	\$24,839,198	10%	15.99%	\$32,555,160	(\$8,561,618)	76%	1%	\$2,675,970	\$23,418,114
Railbelt	\$21,838,458	8%	5.05%	\$10,271,915	(\$16,702,501)	213%	78%	\$200,670,431	\$23,418,114
Southeast	\$60,696,587	24%	5.48%	\$11,159,454	(\$55,116,860)	544%	9%	\$24,030,924	\$23,418,114
Yukon-Koyukuk/Upper Tanana	\$14,954,332	6%	26.49%	\$53,915,209	\$12,003,272	28%	1%	\$2,367,148	\$23,418,114
Statewide	\$1,035,888	0%	0.00%						
TOTAL	\$257,599,251	100%		\$257,599,251			100%	\$257,599,251	\$257,599,251



REF Funding Limits

REF Round XIV Grant Funding Limits

Phase	Grant Limits by Location	
	Low Energy Cost Areas*	High Energy Cost Areas**
Total project grant limit	\$1M	\$2M
Phase I, Reconnaissance	The per project total of Phase I and II is limited to 20% of anticipated construction cost (Phase IV), not to exceed \$1M.	
Phase II, Feasibility and Conceptual Design		
Phase III, Final Design and Permitting	20% of anticipated construction cost (Phase IV), and counting against the total construction grant limit below.	
Phase IV, Construction and Commissioning	\$1M per project, including final design and permitting (Phase III) costs, above.	\$2M per project, including final design and permitting (Phase III) costs, above.
Exceptions		
Biofuel projects	Biofuel projects where the applicant does not intend to generate electricity or heat for sale to the public are limited to reconnaissance and feasibility phases only at the limits expressed above. Biofuel is a solid, liquid or gaseous fuel produced from biomass, excluding fossil fuels.	
Geothermal projects	The per-project total of Phase I and II for geothermal projects is limited to 20% of anticipated construction costs (Phase IV), not to exceed \$1M/\$2M (low/high cost areas). Any amount above the usual \$1M cap spent on these two phases combined shall reduce the total Phase III and IV grant limit by the same amount, thereby keeping the same total grant dollar cap as all other projects. This exception recognizes the typically increased cost of the feasibility stage due to test well drilling.	

REF Round XIV funding limits are limited by the requested phase(s) in the application and the technology type applied.

Low vs High Cost Energy Areas:

- *Low Energy Cost Areas* are defined as communities with a residential retail electric rate of below \$0.20 per kWh, before Power Cost Equalization (PCE) reimbursement is applied. For heat projects, low energy cost areas are communities with natural gas available as a heating fuel to at least 50% of residences, or availability expected by the time the proposed project is constructed.
- *High Energy Cost Areas* are defined as communities with a residential retail electric rate of \$0.20 per kWh or higher, before PCE funding is applied. For heat projects, high energy cost areas are communities that do not have natural gas available as a heating fuel.



Proposed REF Capitalization for FY2023 / Rd 14

The State of Alaska FY2023 proposed capital budget has allocated \$15 million for REF Round 14 grant funding of recommended projects.

As recommended, the current list of 27 recommended applications yields a total grant request of \$14.9 million. With an anticipated REF budget of \$15 million, this is sufficient to cover the current round 14 recommendations.

The table to the right indicates historical REF program funding from the inception of the REF program to the anticipated \$15 million for FY2023.

The proposed \$15M would be the largest REF capitalization since FY2014.

Fiscal Year	Legislative Appropriation/Award	
FY2008	\$	100,000,000
FY2009	\$	25,013,014
FY2010	\$	25,000,000
FY2011	\$	26,620,231
FY2012	\$	25,870,659
FY2013	\$	25,000,000
FY2014	\$	22,843,900
FY2015	\$	11,512,659
FY2016	\$	-
FY2017	\$	-
FY2018	\$	-
FY2019	\$	11,000,000
FY2020	\$	-
FY2021	\$	-
FY2022	\$	4,750,973
FY2023 (Proposed)	\$	15,000,000
Total (Excl. FY2023)	\$	277,611,436
Total	\$	292,611,436

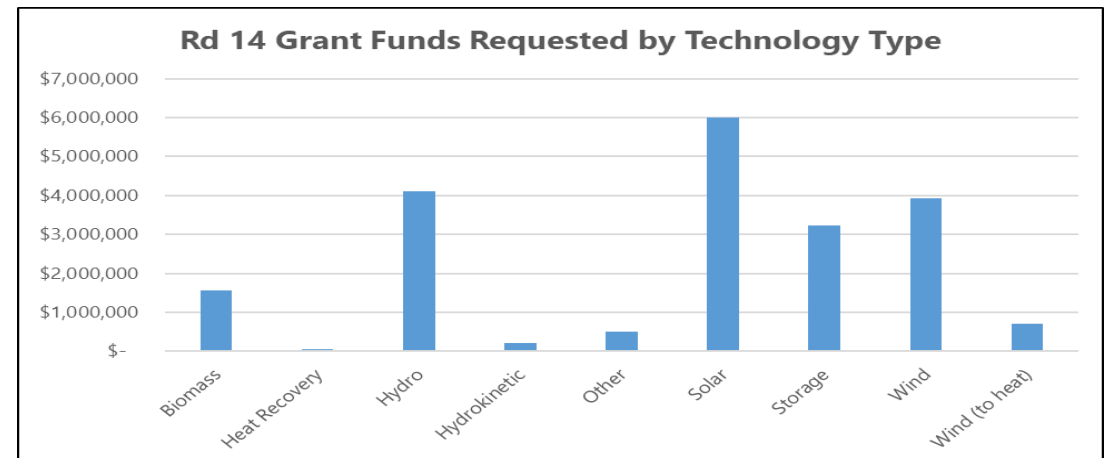
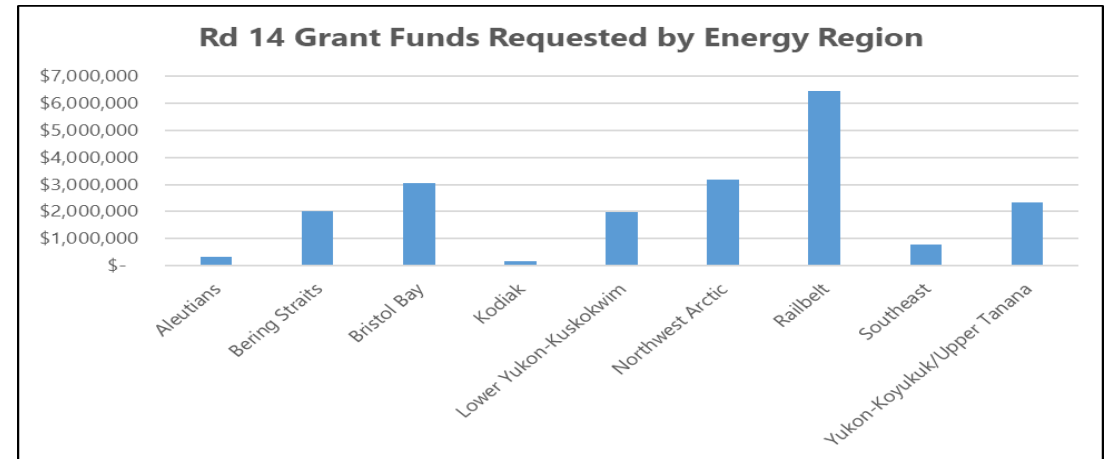


Round XIV – Received Applications Summary

For REF Round 14, AEA received a total of 39 applications, with a corresponding total grant request of \$20.2 million.

Energy Region	No. of Applications	REF Funding Requested (\$)	% of Total
Aleutians	1	\$ 321,000	2%
Bering Straits	1	\$ 2,000,000	10%
Bristol Bay	5	\$ 3,063,025	15%
Kodiak	1	\$ 172,600	1%
Lower Yukon-Kuskokwim	7	\$ 1,965,932	10%
Northwest Arctic	3	\$ 3,192,435	16%
Railbelt	13	\$ 6,464,707	32%
Southeast	5	\$ 779,868	4%
Yukon-Koyukuk/Upper Tanana	3	\$ 2,330,000	11%
Total	39	\$ 20,289,567	

Technology Type	No. of Applications	REF Funding Requested (\$)
Biomass	2	\$ 1,561,107
Heat Recovery	1	\$ 50,000
Hydro	6	\$ 4,100,868
Hydrokinetic	1	\$ 207,500
Other	3	\$ 510,000
Solar	9	\$ 6,003,500
Storage	4	\$ 3,222,500
Wind	12	\$ 3,931,657
Wind (to heat)	1	\$ 702,435
Total	39	\$ 20,289,567



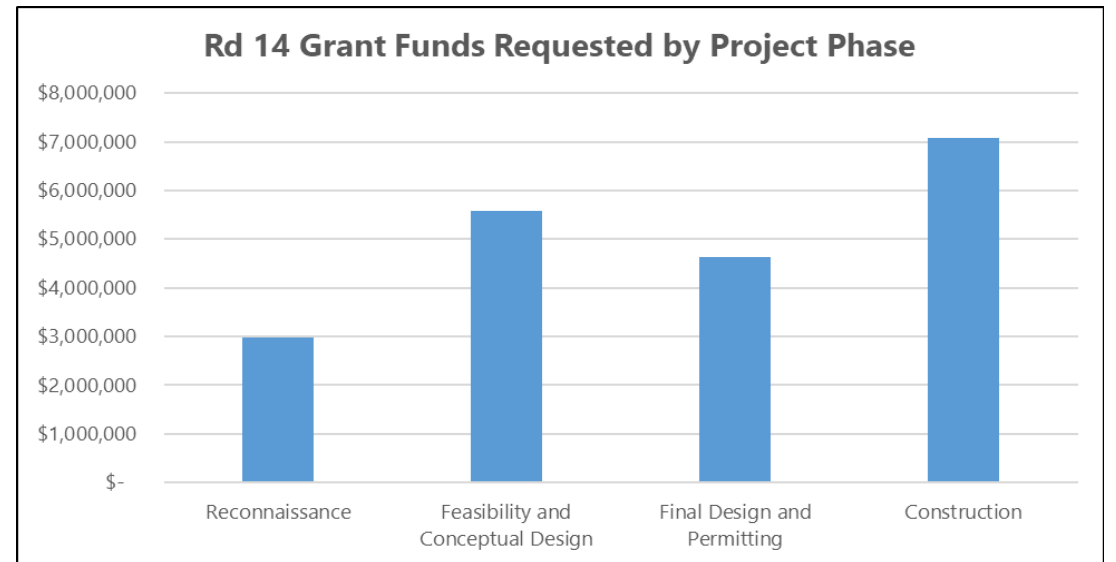
Round XIV – Received Applications Summary

The table to the right indicates the number of applications received by requested phase*, along with the corresponding grant request totals. Per the current RFA, there are four phases, listed below in chronological order, for which an applicant may request funding:

- (1) Reconnaissance
- (2) Feasibility and Conceptual Design
- (3) Final Design and Permitting
- (4) Construction

*For purposes of tabulation, if an applicant applied for more than one phase, the first chronological phase was counted, with the latter phases being excluded.

Requested Phase	No. of Applications	REF Funding Requested (\$)
Reconnaissance	6	\$ 2,989,368
Feasibility and Conceptual Design	14	\$ 5,578,135
Final Design and Permitting	7	\$ 4,631,011
Construction	12	\$ 7,091,053
Total	39	\$ 20,289,567



Stage 1 Non-Recommended Applications – Summary

In AEA's stage one evaluation, as per 3 AAC 107.635, it was determined by AEA evaluation staff that twelve applications did not meet the eligibility and/or completeness requirements and were rejected. Two applicants appealed their rejections as per 3 AAC 107.650 – "Requests for reconsideration". Upon AEA's due consideration and review of the appeals, both rejections were upheld, and final written notices were issued to the applicants.

No additional applications were rejected as per 3 AAC 107.645, stage two evaluations.

With an initial receipt of 39 applications and 12 being rejected owing to stage 1 evaluations, there are 27 remaining applications which are thus recommended. With respect to grant funding requests, a total of \$2.3 million was rejected in stage one.

AEA received 39 initial applications. Owing to AEA's stage 1 review, 12 applications were rejected, reducing the total grant funds requested by (\$2.3) million. The remaining 27 applications, totaling a grant request of \$17.9 million, were then evaluated according to stage 2, stage 3, and stage 4 criteria. With an anticipated REF fund allocation of \$15 million for FY2023, there are insufficient REF funds to cover one-hundred percent of the Round 14 requests, as initially requested. Partial funding recommendations, which are discussed further along in the presentation, were made in full consideration of project phases applied for, application scoring, project scope eligibility, and household cost of energy.



Stage 1 Non-Recommended Applications

Below are the 12 identified applications which were rejected owing to stage 1 evaluation:

Count	App Number	Applicant Name	Project Title	Technology	Project Phase(s)	Applicant Type	Energy Region	Election District	Community (Nearest)	Grant Funds Requested	Matching Funds (\$)	Match Type (Cash/In-Kind)	Stage 1 Rejection Reasoning
1	14013	State of Alaska Department of Transportation & Public Facilities	Galena Maintenance Station Solar	Solar	Feasibility and Conceptual Design; Final Design and Permitting; Construction	State Government	Yukon-Koyukuk/Upper Tanana	39-T	Galena	\$ 195,000.00	\$ 5,000.00	Cash	Ineligible Applicant - State Govt
2	14014	State of Alaska Department of Fish and Game, Division of Sport Fish	Ruth Barnett Sport Fish Hatchery - Heat Recovery	Heat Recovery	Reconnaissance; Feasibility and Conceptual Design	State Government	Railbelt	1-A	Fairbanks	\$ 50,000.00	\$ 2,500.00	Cash	Ineligible Applicant - State Govt
3	14023	State of Alaska Department of Transportation & Public Facilities	Fairbanks Regional Office Building Solar	Solar	Feasibility and Conceptual Design; Final Design and Permitting	State Government	Railbelt	1-A	Fairbanks	\$ 80,000.00	\$ -	N/A	Ineligible Applicant - State Govt
4	14024	Naterkaq Light Plant	Naterkaq Light Plant Battery Installation and Integration	Storage	Construction	Utility	Lower Yukon-Kuskokwim	38-S	Chefornak	\$ 352,000.00	\$93,960 / \$844,164	Cash/In-Kind	Ineligible Project
5	14030	Levelock Village Council	Levelock Renewables Final Design and Permitting	Wind	Final Design and Permitting	Tribal Council	Bristol Bay	37-S	Levelock	\$ 201,500.00	\$ 12,000.00	In-Kind	Substantially Incomplete
6	14031	Atmautluak Tribal Utilities	Atmautluak Light Plant Battery, Thermal Stove, and Metering Installation	Storage	Construction	Utility	Lower Yukon-Kuskokwim	38-S	Atmautluak	\$ 375,000.00	\$ 40,000.00	Cash	Ineligible Project
7	14032	CalWave Power Technologies	Yakutat Wave Feasibility and Design Project	Hydrokinetic	Feasibility and Conceptual Design	IPP	Southeast	32-P	Yakutat	\$ 207,500.00	\$ 199,100.00	Cash/In-Kind	Ineligible Applicant - Not an AK registered business, does not have nor maintain a physical presence in AK, does not meet definition of IPP
8	14033	Levelock Village Council	Levelock Feasibility Assessment & Conceptual Design	Wind	Final Design and Permitting	Tribal Council	Bristol Bay	37-S	Levelock	\$ 141,025.00	\$ -	N/A	Substantially Incomplete
9	14036	Tlingit Haida Regional Housing Authority	Emergency Renewable Energy Sources for Southeast Alaska - Saxman	Other	Construction	Tribal Housing Authority	Southeast	36-R	Saxman	\$ 170,000.00	\$ 33,000.00	Cash	Late Application
10	14037	Tlingit Haida Regional Housing Authority	Emergency Renewable Energy Sources for Southeast Alaska - Kake	Other	Construction	Tribal Housing Authority	Southeast	35-R	Kake	\$ 170,000.00	\$ 33,000.00	Cash	Late Application
11	14038	Tlingit Haida Regional Housing Authority	Emergency Renewable Energy Sources for Southeast Alaska - Angoon	Other	Construction	Tribal Housing Authority	Southeast	35-R	Angoon	\$ 170,000.00	\$ 33,000.00	Cash	Late Application
12	14039	City of Port Heiden	Reindeer and Barbara Creek Hydro Reconnaissance Project	Hydro	Construction	Local Government	Bristol Bay	37-S	Port Heiden	\$ 225,000.00	\$ -	N/A	Late Application



Solicitation of Advice from Renewable Energy Fund Advisory Committee (REFAC)

As statutorily required per AS 42.45.045 and set forth in 3 AAC 107.660, the authority is to solicit advice from the REFAC concerning making a final list / ranking of eligible projects, which gives “significant weight to providing a statewide balance of grant money, taking into consideration the amount of money available, number and types of projects within each region, regional rank, and statewide rank.” This finalized list will be provided to the legislature for recommendation in accordance with AS 42.45.045(d)(3). Any grant awards are subject to legislative approval and appropriation.

The right-hand table is provided to assess the “regional spreading” of REF funding. As indicated, both the Railbelt and the Southeast energy regions currently exceed 200% of their target allocation based on their cost of energy burden. Bristol Bay, Yukon-Koyukuk/Upper Tanana, and the North Slope energy regions are the remaining regions where the allocation, based on the cost of energy burden, has not met 50% of their potential allocation, categorizing these regions as “under-served”.

The authority solicits advice from the REFAC relating to any recommendations in changes to funding level, ranking, and/or total amount of funding and number of projects.

Cumulative through Round 13									
Energy Region	Total Round 1-13 Funding		Cost of Power Allocation				Population		Even Split
	Grant Funding	% Total	Cost burden (HH cost/HH income)	Allocation cost of energy basis	Additional funding needed to reach 50%	% of target allocation	% Total	Allocation per capita basis	Allocation per region basis
Aleutians	\$17,565,348	7%	9.26%	\$18,857,207	(\$8,136,744)	93%	1%	\$3,036,869	\$23,418,114
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Kodiak	\$16,486,919	6%	5.83%	\$11,866,689	(\$10,553,574)	139%	1%	\$3,143,209	\$23,418,114
Lower Yukon-Kuskokwim	\$37,273,384	14%	17.83%	\$36,284,058	(\$19,131,355)	103%	4%	\$9,553,810	\$23,418,114
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Northwest Arctic	\$24,839,198	10%	15.99%	\$32,555,160	(\$8,561,618)	76%	1%	\$2,675,970	\$23,418,114
Railbelt	\$21,838,458	8%	5.05%	\$10,271,915	(\$16,702,501)	213%	78%	\$200,670,431	\$23,418,114
Southeast	\$60,696,587	24%	5.48%	\$11,159,454	(\$55,116,860)	544%	9%	\$24,030,924	\$23,418,114
Yukon-Koyukuk/Upper Tanana	\$14,954,332	6%	26.49%	\$53,915,209	\$12,003,272	28%	1%	\$2,367,148	\$23,418,114
Statewide	\$1,035,888	0%	0.00%						
TOTAL	\$257,599,251	100%		\$257,599,251			100%	\$257,599,251	\$257,599,251



REFAC Roles

Statutes (AS 42.45.045)

- AEA “in consultation with the advisory committee...develop a methodology for determining the order of projects that may receive assistance...”
- AEA “shall, at least once each year, solicit from the advisory committee funding recommendations for all grants.”

Regulations (3 AAC 107.660)

(a) To establish a statewide balance of recommended projects, the authority will provide to the advisory committee established in [AS 42.45.045](#) (i) a statewide and regional ranking of all applications recommended for grants.

(b) In consultation with the advisory committee established in [AS 42.45.045](#) (i), the authority will

(1) make a final prioritized list of all recommended projects, giving significant weight to providing a statewide balance of grant money, and taking into consideration the amount of money that may be available, number and types of projects within each region, regional rank, and statewide rank



REFAC Current Members

NAME	TITLE	SECTOR	APPOINTED BY
VACANT	TBD	Small rural electric utility	Governor (pending)
Rose, Chris	Founder / Executive Director, Renewable Energy Alaska Project (REAP)	Business/organization involved in renewable energy	Governor
Schubert, Gail	CEO, Bering Straits Native Corporation	Representative of an Alaska Native Organization	Governor
Amberg, Alicia	Member, Denali Commission; Exec Dir, Associated General Contractors of Alaska	Denali Commission	Governor
Thibert, Lee	CEO, Chugach Electric Association	Large urban electric utility	Governor
Von Imhof, Natasha	Senator	Senate Member 2	Senate President
Wilson, David	Senator	Senate Member 1	Senate President
Hopkins, Grier	Representative	House Member 2	Speaker of the House
Josephson, Andy	Representative	House Member 1	Speaker of the House

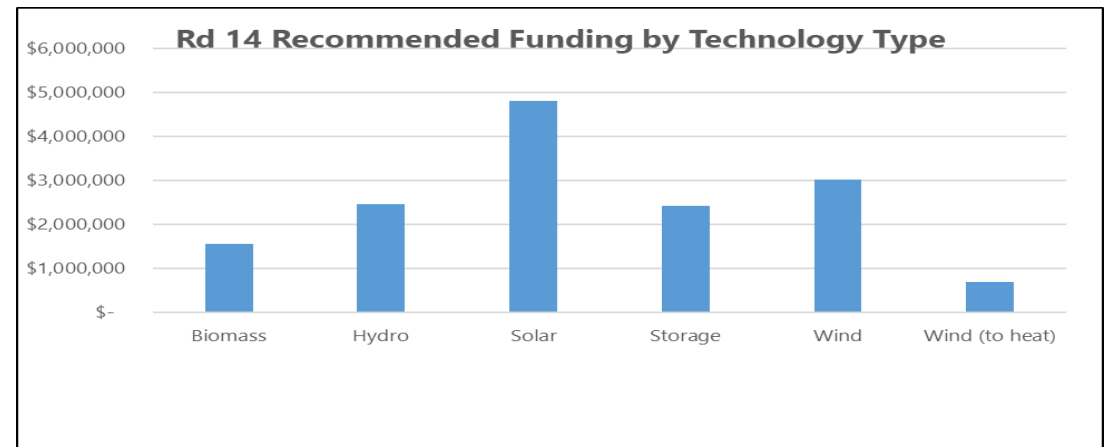
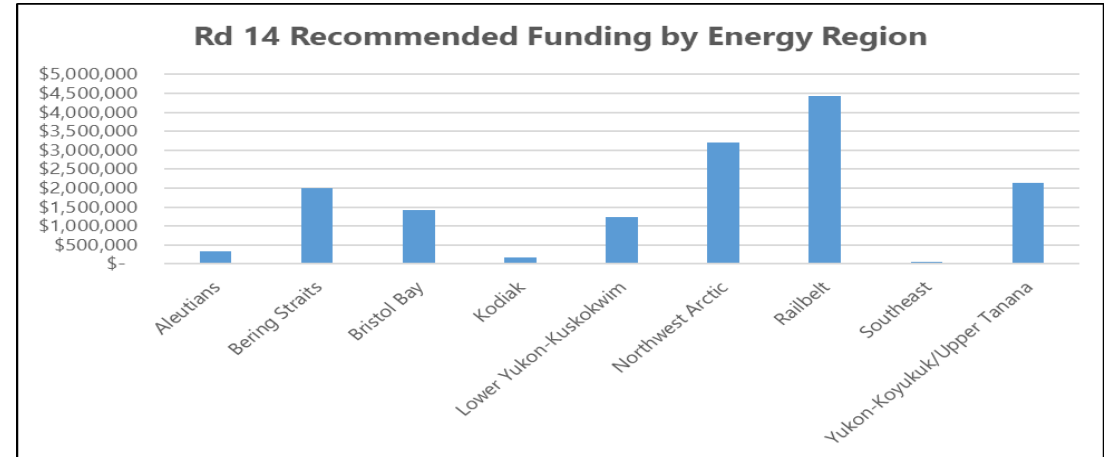


Round XIV – Recommended Applications Summary

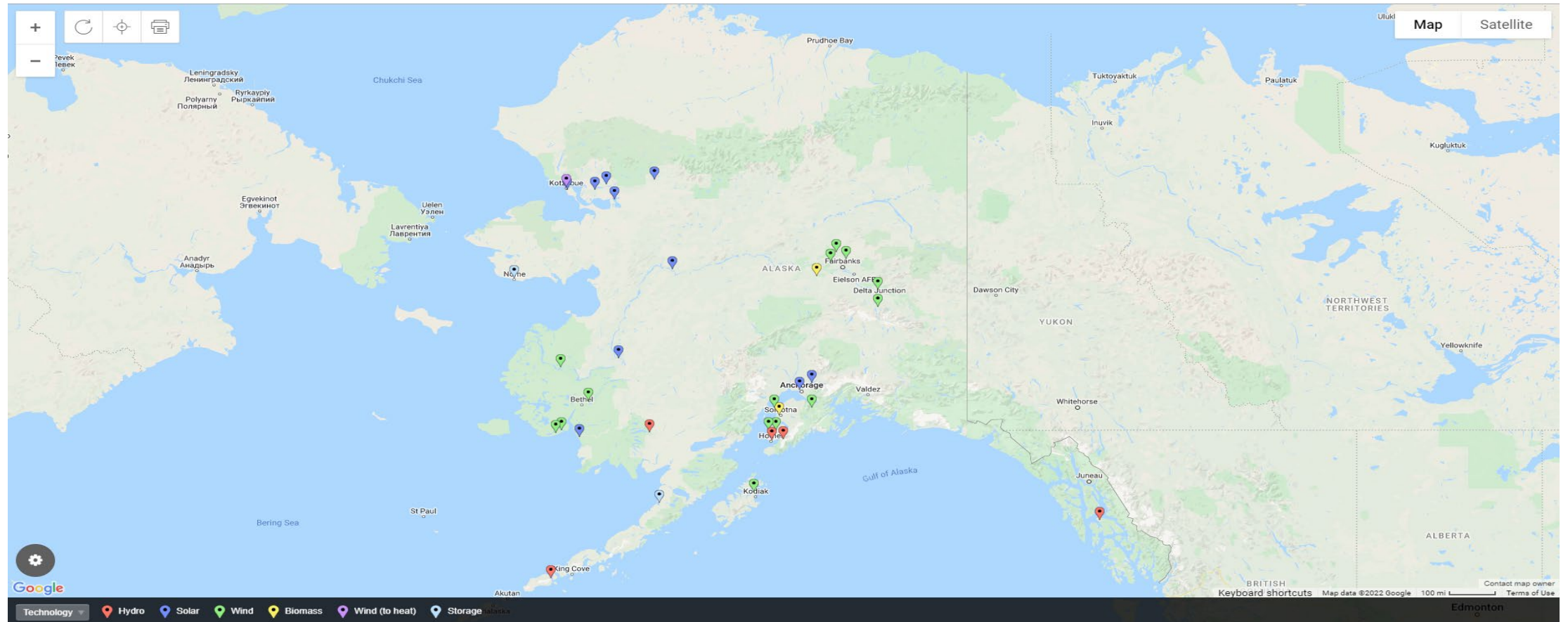
There are 27 remaining recommended applications, totaling a request of \$14.9 million.

Energy Region	No. of Applications	Recommended Funding (\$)	% of Total
Aleutians	1	\$ 321,000	2%
Bering Straits	1	\$ 2,000,000	13%
Bristol Bay	2	\$ 1,423,500	10%
Kodiak	1	\$ 172,600	1%
Lower Yukon-Kuskokwim	5	\$ 1,238,932	8%
Northwest Arctic	3	\$ 3,192,435	21%
Railbelt	11	\$ 4,426,707	30%
Southeast	1	\$ 62,368	0%
Yukon-Koyukuk/Upper Tanana	2	\$ 2,135,000	14%
Total	27	\$ 14,972,542	

Technology Type	No. of Applications	Recommended Funding (\$)
Biomass	2	\$ 1,561,107
Hydro	5	\$ 2,462,868
Solar	7	\$ 4,803,500
Storage	2	\$ 2,423,500
Wind	10	\$ 3,019,132
Wind (to heat)	1	\$ 702,435
Total	27	\$ 14,972,542



Round XIV – Geographical Distribution of Recommended Applications



Click the map above to access an interactive web-based map of Round 14 recommended projects.



Applications Forwarded for Legislature's Decision on Funding

On April 15, 2022 the REFAC voted unanimously in favor of the AEA's recommended applications and assigned ranking, as presented above in descending order. Please see related summary report for details concerning the evaluation and description of the individual applications.

Recommended Projects															Recommendation				
Count	App Number	Applicant Name	Project Title	Project Phase(s)	Energy Region	Election District	Technology	Community (Nearest)	Grant Funds Requested	Matching Funds (\$)	Match Type (Cash/In-Kind)	Stage 2 Score	Stage 3 Score	Benefit/Cost Ratio	Household Energy Cost	Regional Rank	Statewide Rank	Recommended Funding Level	Recommended Funding Amount
1	14034	City of Galena	Galena Community Scale Solar PV and Battery Project	Final Design and Permitting; Construction	Yukon-Koyukuk/Upper Tanana	39-T	Solar	Galena	\$ 2,000,000	\$1,500,000 / \$6,000	Cash / In-Kind	84.17	80.16	1.27	\$ 10,020	1	1	Full w/ Special Provision	\$ 2,000,000
2	14029	Golden Valley Electric Association	Interior Alaska Wind Energy Resource Assessment	Reconnaissance; Feasibility and Conceptual Design	Railbelt	9-E	Wind	Murphy Dome (Fairbanks) Deltana Area (Delta Junction) Donnelly Dome (Fort Greely) Pedro Dome (Fox) Wickersham Dome (Fox)	\$ 1,425,000	\$ 680,700	In-Kind	95.17	73.92	2.92	\$ 6,486	1	2	Partial	\$ 855,000
3	14002	Alaska Village Electric Cooperative	Holy Cross Solar Energy & Battery Storage Feasibility Study Project	Feasibility and Conceptual Design	Yukon-Koyukuk/Upper Tanana	37-S	Solar	Holy Cross	\$ 135,000	\$ 15,000	Cash	71.5	69.37	0.88	\$ 10,548	2	3	Full	\$ 135,000.00
4	14012	Alaska Electric & Energy Cooperative, Inc.	AEEC/KPB CPL Landfill Gas CHP Project	Final Design and Permitting	Railbelt	31-P	Biomass	Soldotna	\$ 884,986	\$ 221,247	Cash	90.75	68.76	1.89	\$ 3,428	2	4	Full	\$ 884,986
5	14022	Chugach Electric Association, Inc. On behalf of the Bradley Lake Management Committee (BPMC)	Dixon Diversion Feasibility Project	Feasibility and Conceptual Design	Railbelt	32-P	Hydro	Fritz Creek/ Fox River	\$ 1,000,000	\$ 1,000,000	Cash	88	67.16	1.39	\$ 3,428	3	5	Full	\$ 1,000,000
6	14001	Nushagak Electric & Telephone Cooperative	Nuyakuk River Hydroelectric Project	Feasibility and Conceptual Design	Bristol Bay	37-S	Hydro	Dillingham	\$ 2,000,000	\$ 200,000	Cash	79.75	65.63	0.97	\$ 6,262	1	6	Partial	\$ 1,000,000.00
7	14026	Nome Joint Utility System	Nome Battery Energy Storage System	Construction	Bering Straits	39-T	Storage	Nome	\$ 2,000,000	\$ 500,000	Cash	85.5	65.59	0.89	\$ 6,595	1	7	Full	\$ 2,000,000
8	14004	Alaska Village Electric Cooperative	Pilot Station Wind Energy Feasibility Study & Conceptual Design Project	Feasibility and Conceptual Design	Lower Yukon-Kuskokwim	39-T	Wind	Pilot Station	\$ 229,500	\$ 25,500	Cash	75.5	65.3	0.41	\$ 8,225	1	8	Full	\$ 229,500
9	14007	Northwest Arctic Borough	Design and Permitting for Solar PV and Battery Storage for Ambler, Kiana, Noorvik, and Selawik	Final Design and Permitting	Northwest Arctic	40-T	Solar	Ambler / Kiana / Noorvik / Selawik	\$ 590,000	\$ 34,000	In-Kind	72.08	64.46	0.35	\$ 9,335	2	9	Full	\$ 590,000
10	14018	Kotzebue Electric Association, Inc.	Kotzebue Wind to PV Transition Utilizing Existing Wind Infrastructure	Construction	Northwest Arctic	40-T	Solar	Kotzebue	\$ 1,900,000	\$250,000 / \$452,000	Cash/In-Kind	75.83	64.46	0.84	\$ 7,247	1	10	Full	\$ 1,900,000
11	14005	City of Ouzinkie	Ouzinkie Wind Energy Feasibility and Conceptual Design Project	Feasibility and Conceptual Design	Kodiak	32-P	Wind	Ouzinkie	\$ 172,600	\$50,000/\$14,400	Cash/In-Kind	68.75	64.21	0.58	\$ 6,942	1	11	Full	\$ 172,600
12	14028	City of Nenana	Nenana Biomass District Heat System	Construction	Railbelt	6-C	Biomass	Nenana	\$ 676,121	\$417,468 / \$40,000	Cash/In-Kind	70.58	64.08	1.09	\$ 5,560	4	12	Full	\$ 676,121
13	14016	Kwig Power Company	Kwiqillingok Wind Turbine Upgrade	Construction	Lower Yukon-Kuskokwim	38-S	Wind	Kwiqillingok	\$ 278,716	\$ 13,500	In-Kind	77.25	61.87	1.25	\$ 8,462	2	13	Full	\$ 278,716
14	14009	Alaska Electric & Energy Cooperative, Inc.	AEEC Summit Lake Wind	Feasibility and Conceptual Design	Railbelt	29-O	Wind	Moose Pass	\$ 232,000	\$ 58,000	Cash	80	61.49	1.01	\$ 3,428	5	14	Full	\$ 232,000



Applications Forwarded for Legislature's Decision on Funding (continued)

Recommended Projects														Recommendation					
Count	App Number	Applicant Name	Project Title	Project Phase(s)	Energy Region	Election District	Technology	Community (Nearest)	Grant Funds Requested	Matching Funds (\$)	Match Type (Cash/In-Kind)	Stage 2 Score	Stage 3 Score	Benefit/Cost Ratio	Household Energy Cost	Regional Rank	Statewide Rank	Recommended Funding Level	Recommended Funding Amount
15	14020	Puvurnaq Power Company	Kongiganak Wind Upgrade with Airfoil Blades for Turbines	Construction	Lower Yukon-Kuskokwim	38-S	Wind	Kongiganak	\$ 278,716	\$ 13,500	In-Kind	77.5	61.33	1.12	\$ 8,538	3	15	Full	\$ 278,716
16	14027	Inside Passage Electric Cooperative	Jenny Creek Hydro Reconnaissance - Kake IPEC	Reconnaissance	Southeast	35-R	Hydro	Kake	\$ 62,368	\$ 10,000	In-Kind	73.5	60.09	0.44	\$ 7,439	1	16	Full	\$ 62,368
17	14011	Alaska Electric & Energy Cooperative, Inc.	AEEC Caribou Hills Wind	Feasibility and Conceptual Design	Railbelt	31-P	Wind	Ninilchik/Fox River	\$ 209,600	\$ 52,400	Cash	73.75	57.3	0.75	\$ 3,428	6	17	Full	\$ 209,600
18	14010	Alaska Electric & Energy Cooperative, Inc.	AEEC East Foreland/Nikiski Wind	Feasibility and Conceptual Design	Railbelt	29-O	Wind	Nikiski	\$ 200,000	\$ 50,000	Cash	73.33	56.99	0.75	\$ 3,428	7	18	Full	\$ 200,000
19	14025	City of Pilot Point	Pilot Point Comprehensive Community Wind/Solar/Storage & Heat Project	Construction	Bristol Bay	37-S	Storage	Pilot Point	\$ 495,500	\$125,000 / \$200,500	Cash/In-Kind	51.75	55.58	0.29	\$ 7,403	2	19	Partial	\$ 423,500
20	14015	City of Kotzebue	Kotzebue Wind to Heat System	Feasibility and Conceptual Design; Final Design and Permitting; Construction	Northwest Arctic	40-T	Wind (to heat)	Kotzebue	\$ 702,435	\$ -	None provided	76.33	55.33	1.34	\$ 7,247	3	20	Full	\$ 702,435
21	14006	City of Homer, Department of Public Works	Homer Energy Recovery Project	Final Design and Permitting; Construction	Railbelt	31-P	Hydro	Homer	\$ 492,500	\$ 107,000	In-Kind	72.33	54.99	0.45	\$ 3,428	8	21	Partial	\$ 79,500
22	14008	Alaska Electric & Energy Cooperative, Inc.	AEEC Ninilchik Wind	Feasibility and Conceptual Design	Railbelt	31-P	Wind	Ninilchik	\$ 192,000	\$ 48,000	Cash	70	54.49	0.77	\$ 3,428	9	22	Full	\$ 192,000
23	14035	City of False Pass	UNGA Man Creek Hydroelectric Project	Final Design and Permitting	Aleutians	37-S	Hydro	False Pass	\$ 321,000	\$27,000 / \$27,000	Cash/In-Kind	59.33	51.33	0.7	\$ 6,947	1	23	Full w/ Special Provision	\$ 321,000
24	14003	Point MacKenzie Solar	Point MacKenzie Solar	Reconnaissance; Feasibility and Conceptual Design; Final Design and Permitting; Construction	Railbelt	8-D	Solar	Point Mackenzie	\$ 1,000,000	\$ 250,000	In-Kind	56	47.1	0.63	\$ 3,058	10	24	Partial	\$ 75,000
25	14021	Akiachak Native Community	Akiachak Wind Feasibility	Reconnaissance; Feasibility and Conceptual Design	Lower Yukon-Kuskokwim	38-S	Wind	Akiachak	\$ 371,000	\$ -	None provided	52.58	46.86	0.5	\$ 8,119	4	25	Full	\$ 371,000
26	14019	Native Village of Eklutna	Eklutna Village Solar Energy Project - Feasibility Study	Feasibility and Conceptual Design	Railbelt	12-F	Solar	Native Village of Eklutna (Palmer proxy)	\$ 22,500	\$ 7,500	Cash	48.08	46.37	0.07	\$ 3,058	11	26	Full	\$ 22,500
27	14017	Native Village of Kwinhagak	Kwinhagak Reconnaissance Study	Reconnaissance	Lower Yukon-Kuskokwim	38-S	Solar	Quinhagak	\$ 81,000	\$ 1,000	In-Kind	44.67	45.2	0	\$ 7,645	5	27	Full	\$ 81,000
TOTAL									\$ 17,952,542										\$ 14,972,542

Note:
 blue cells denote standard electric project applications
 yellow cells denote heat project applications

Please see related summary report for details concerning the evaluation and description of the individual applications.

Round XIV –Partial Funding Recommendations

As part of the evaluation process and pursuant to 3 AAC 170.655(b), five applications, as provided below, have been recommended for partial funding. To caveat, if these partial funding recommendations are reversed and full funding recommended, this would raise the total grant request amount for all remaining 27 recommended applications to \$17.9 million. At \$17.9 million, the anticipated REF fund capitalization of \$15 million would be insufficient to fund the total grant request amount, yielding a delta of (\$2.9 million). Reasoning for recommendations of partial funding are provided on the following page. Partial funding recommendations have been made in full consideration of additional due diligence and information needed from preliminary project phases prior to funding for final design and/or construction; eligibility of items comprising project scope; and statewide balance of grant money, taking into consideration the amount of money available, number and types of projects within each region, regional rank, and statewide rank (as per 3 AAC 107.660).

App Number	Applicant Name	Project Title	Project Phase(s)	Energy Region	Election District	Technology	Grant Funds Requested	Matching Funds (\$)	Match Type (Cash/In-Kind)	Stage 3 Score	Benefit/Cost Ratio	Household Energy Cost	Regional Rank	Statewide Rank	Recommended Funding Amount
14029	Golden Valley Electric Association	Interior Alaska Wind Energy Resource Assessment	Reconnaissance; Feasibility and Conceptual Design	Railbelt	9-E	Wind	\$ 1,425,000.00	\$ 680,700.00	In-Kind	73.92	2.92	\$ 6,486	1	2	\$ 855,000
14001	Nushagak Electric & Telephone Cooperative	Nuyakuk River Hydroelectric Project	Feasibility and Conceptual Design	Bristol Bay	37-S	Hydro	\$ 2,000,000.00	\$ 200,000.00	Cash	65.63	0.97	\$ 6,262	1	6	\$ 1,000,000
14025	City of Pilot Point	Pilot Point Comprehensive Community Wind/Solar/Storage & Heat Project	Construction	Bristol Bay	37-S	Storage	\$ 495,500.00	\$125,000 / \$200,500	Cash/In-Kind	55.58	0.29	\$ 7,403	2	19	\$ 423,500
14006	City of Homer, Department of Public Works	Homer Energy Recovery Project	Final Design and Permitting; Construction	Railbelt	31-P	Hydro	\$ 492,500.00	\$ 107,000.00	In-Kind	54.99	0.45	\$ 3,428	8	21	\$ 79,500
14003	Point MacKenzie Solar	Point MacKenzie Solar	Reconnaissance; Feasibility and Conceptual Design; Final Design and Permitting; Construction	Railbelt	8-D	Solar	\$ 1,000,000.00	\$ 250,000.00	In-Kind	47.1	0.63	\$ 3,058	10	24	\$ 75,000
TOTAL							\$ 5,413,000.00								\$ 2,433,000



Round XIV –Partial Funding Reasoning

App Number	Applicant Name	Project Title	Partial Funding (as per 3 AAC 107.655[b])
14029	Golden Valley Electric Association	Interior Alaska Wind Energy Resource Assessment	<p><i>Partial Funding:</i> As stated in the application, GVEA is looking to conduct reconnaissance and feasibility and conceptual design reports on 5 potential wind farm sites. In the application it is stated under section 2.4 - Project Description, "Funds from this project will be used to complete wind resource assessments at up to five sites in Interior Alaska (3-5 sites depending on grant funding)."</p> <p>Owing to an anticipated REF Rd 14 funding cap of \$15 million, and additionally the relatively low cost of energy for Railbelt ratepayers relative to other areas of the state, AEA has sought to partially fund this application for 3 sites at GVEA's choosing, reduced from the requested 5 sites. Such partial funding still satisfies the request from the applicant, while also allowing for additional funds to be applied to those portions of the state where the cost of energy is greater.</p>
14001	Nushagak Electric & Telephone Cooperative	Nuyakuk River Hydroelectric Project	<p><i>Partial Funding:</i> \$2M project cap for REF "high cost area" projects. This project was awarded \$1M in Rd 13, and is thus only eligible for \$1M in this Rd 14.</p>
14025	City of Pilot Point	Pilot Point Comprehensive Community Wind/Solar/Storage & Heat Project	<p><i>Partial Funding:</i> Applicant estimates \$72,000 cost for extended maintenance contract cost. This 2 year maintenance contract item is not a fundable item per the REF statute AS 42.45.045(f)(2)(A)-(D) concerning project scope eligibility. Partial funding in the amount of \$423,500 is recommended, which is exclusive of the \$72,000 maintenance contract.</p>
14006	City of Homer, Department of Public Works	Homer Energy Recovery Project	<p><i>Partial Funding:</i> The City of Homer submitted this application with a grant request amount of \$492,500 for final design & permitting and construction project phases. The final design & permitting phase of this project is estimated to be \$79,500, with the remaining \$413,000 for construction. It is AEA's recommendation that this project be funded at \$79,500 to provide for the funding of the final design and permitting phase. Given the nascent nature of the technology to be employed as stated in the application (self-contained turbine units generating power via excess pressure generated through the City of Homer's water utility system), such partial funding is recommended to thoroughly vet the technology and provide more refined estimates as to the energy generated, O&M, and system integration/interconnection, prior to construction.</p> <p>Additionally, owing to the anticipated REF Rd 14 funding cap of \$15 million, and the lower cost of energy within the Railbelt relative to the other areas of the state, such partial funding allows for an offset of funds to those areas of the state where the cost of energy is greater.</p>
14003	Point MacKenzie Solar	Point MacKenzie Solar	<p><i>Partial Funding:</i> AEA recommends partial funding in the amount of \$75,000 to conduct an integration, interconnection, and feasibility study. Given the size of the proposed solar farm, inexperience of the solar contractor with utility-scale solar projects, and potential significant issues with interconnection (as stated in section 5.3.1 - Technical Risk, p. 17, of the application), AEA feels it is prudent for this project to be analyzed more comprehensively prior to allocating REF funds for construction.</p> <p>Additionally, partial funding is recommended for this application as it was second to last in the regional ranking for Railbelt applications for Round 14. Furthermore, being located within the Railbelt, the project would be located in one of the lowest cost of energy regions in the State and the partial funding of this project subsequently allows for the funding of other projects which seek to provide benefit to those areas with higher costs of energy, allowing for a more equitable distribution of REF funds across all energy regions.</p>



Online Supplemental Materials

Supplemental materials as listed below have been made available on the Alaska Energy Authority [website](#) for reference by interested parties:

- Round 14 REF Recommendations
 - REF Round 14 Status Report
 - REF Round 14 Application Summaries Report
 - REF Round 14 Economic Evaluation Summary Reports
- Application Documents
 - REF Round 14 Cover Letter
 - Request for Applications Solicitation
 - Standard Application Form
 - Heat Application Form
- Best Practices Guides
 - Guide provided for each technology type – Biomass, Heat Pump, Heat Recovery, Hydro, Solar, and Wind
- Economic Evaluation Model
- Additional Documents





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