ALASKA ENERGY AUTHORITY

January 30, 2025

The Honorable Gary Stevens
President of the Senate
Alaska State Legislature
State Capitol Room 111
Juneau, Alaska 99801

The Honorable Bryce Edgmon
Speaker of the House
Alaska State Legislature
State Capitol Room 208
Juneau, Alaska 99801

Dear President Stevens and Speaker Edgmon,

Pursuant to Alaska Statute AS 42.45.045(d)(3), the Alaska Energy Authority (AEA), with concurrence from the Renewable Energy Fund Advisory Committee (REFAC), is pleased to provide its selection of Round 17 Renewable Energy Fund (REF) recommendations to the 34th Legislature for their consideration of project funding in the Fiscal Year 2026 capital budget.

With this letter, the REFAC advances 18 recommended projects, for a total grant request of $21.2 million to the Legislature, for Fiscal Year 2026 funding consideration. The Governor's Fiscal Year 2026 proposed capital budget includes $6.3 million for REF Round 17 grant funding. With an appropriation of $6.3 million, this would fully fund the top six projects as recommended. Should the Legislature seek to fully fund those remaining 12 projects as recommended by the REFAC, an additional $14.9 million would need to be added to the Governor's proposed REF appropriation.

From 2008 to 2025, appropriations totaling nearly $327 million have been allocated in support of REF projects. AEA extends its sincere appreciation for the Legislature's continued support of the REF program, including its appropriation of $10.5 million in Fiscal Year 2025, funding five projects as recommended in Round 16. The REF remains a stalwart program in the state of Alaska's energy development toolkit, with over 100 REF funded projects currently in operation, and over 50 in development, across all regions of the state. In addition, this state funding has leveraged over $300 million from federal and local sources to develop projects designed to reduce and stabilize the cost of energy in Alaska. As evidence of the REF's efficacy in advancing renewable energy projects throughout the state of Alaska, an independent impact analysis commissioned by AEA and conducted by a third-party research consultancy, completed in December 2023, reported that the REF program has offset approximately 85 million gallons of diesel fuel (e.g. five percent of all petroleum consumed in Alaska in 2021), 2.2 million cubic feet of natural gas, and 1,063,500 net metric tons of carbon dioxide since its inception in 2008.

As the REF program has matured, the quality of the proposed projects has improved, and knowledge and technology transfers have enhanced the design, construction, and operation of renewable energy projects across Alaska's diverse climates and geographical terrain. The REF program remains unique in its ability to fund projects across all development phases, serving as

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a catalyst for the continued pursuit of integrating proven, and nascent, technologies within Alaska's energy portfolio.

The REFAC request that the Legislature consider funding all 18 recommended Round 17 REF projects at a total capital request of $21.2 million. The annual REF status report and a summary of those Round 17 recommendations to the Legislature are enclosed as attachments to this transmittal letter.

Regards,

Curtis W. Thayer
Executive Director

CC: Alaska Energy Authority Board
Alaska State Legislature
Lacey Sanders, Director of OMB
Jordan Shilling, Legislative Director

Attachments: REF Round 17 Recommended Projects List
REF Round 17 Status Report
REF Round 17 Recommended Projects Summaries Report

Alaska Energy Authority - Renewable Energy Fund - Round 17 - Recommended Projects to Legislature

AEA Rank	Community	Project Name	Applicant Name	Technology	Recommended Funding	Energy Region	Senate Dist.	House Dist.
1	Pelican	Pelican Hydro Relicensing Project, Restoration, Repair	City of Pelican, Pelican Utilities	Hydroelectric	$ 650,474	Southeast	A	2
2	Naknek	Naknek Solar PV on Cape Suwarof	Naknek Electric Association, Inc.	Solar	$ 3,137,848	Bristol Bay	S	37
3	Skagway	Goat Lake Hydro Storage Expansion Study	Goat Lake Hydro, Inc.	Hydroelectric	$ 121,250	Southeast	B	3
4	Kwethluk	Nuvista Kwethluk Wind and Battery Project Completion	Nuvista Light and Electric Cooperative Incorporated	Wind	$ 738,979	Lower Yukon Kuskokwim	S	38
5	Quinhagak	Quinhagak Battery Energy Storage System Project	Alaska Village Electric Cooperative, Inc.	Storage	$ 443,956	Lower Yukon Kuskokwim	S	38
6	Nenana	Nenana Biomass District Heat System, Final Phase	City of Nenana	Biomass	$ 1,223,000	Railbelt	R	36
7	Kongiganak	Kongiganak 100 kW Solar Energy Project	Puvurnaq Power Company	Solar	$ 720,453	Lower Yukon Kuskokwim	S	38
8	Railbelt	Railbelt Wind Diversification Alaska Renewables	Alaska Renewables LLC	Wind	$ 2,000,000	Railbelt	Various	Various
9	Homer	Homer Energy Recovery Project	City of Homer	Hydroelectric	$ 280,000	Railbelt	C	6
10	Atmautluak	Atmautluak ETS Installation, Integration and Commissioning	Atmautluak Tribal Utilities	Storage	$ 286,227	Lower Yukon Kuskokwim	S	38
11	Ketchikan, Petersburg, Wrangell	Southeast Alaska Grid Resiliency (SEAGR)	Southeast Alaska Power Agency (SEAPA)	Hydroelectric	$ 4,000,000	Southeast	A	1 & 2
12	Chevak	Chevak Battery Energy Storage System Project	Alaska Village Electric Cooperative, Inc.	Storage	$ 968,644	Lower Yukon Kuskokwim	S	38
13	Pedro Bay	Knutson Creek Hydro Project Construction	Pedro Bay Village Council	Hydroelectric	$ 400,000	Bristol Bay	S	37
14	Akiachak	Akiachak Native Community 200 kW Solar Energy Project	Akiachak, Ltd	Solar	$ 67,833	Lower Yukon Kuskokwim	S	38
15	Nome	NJUS Solar Nome Banner Ridge Solar Farm	Nome Joint Utility System	Solar	$ 4,000,000	Bering Straits	T	39
16	MEA service area	Hunter Creek Hydroelectric Feasibility Study Project	Matanuska Electric Association	Hydroelectric	$ 1,280,500	Railbelt	M	25
17	Chignik	Chignik Hydroelectric Power System	City of Chignik	Hydroelectric	$ 883,012	Bristol Bay	S	37
18	Sterling	Sterling Solar Project	Utopian Power LLC	Solar	$ 12,500	Railbelt	D	8
TOTAL					**$ 21,214,676**			

*If appropriated by the Legislature and approved the Governor, this funding would become effective July 1, 2025 for inclusion in the budget for Fiscal Year 2026.

**Projects highlighted in blue are those projects to be funded under the REF allocation in the Governor's Fiscal Year 2026 proposed capital budget

Renewable Energy Fund Round 17 Status Report

Alaska Energy Authority —
Renewable Energy Fund – Round XVII

Alaska State Legislature
January 2025

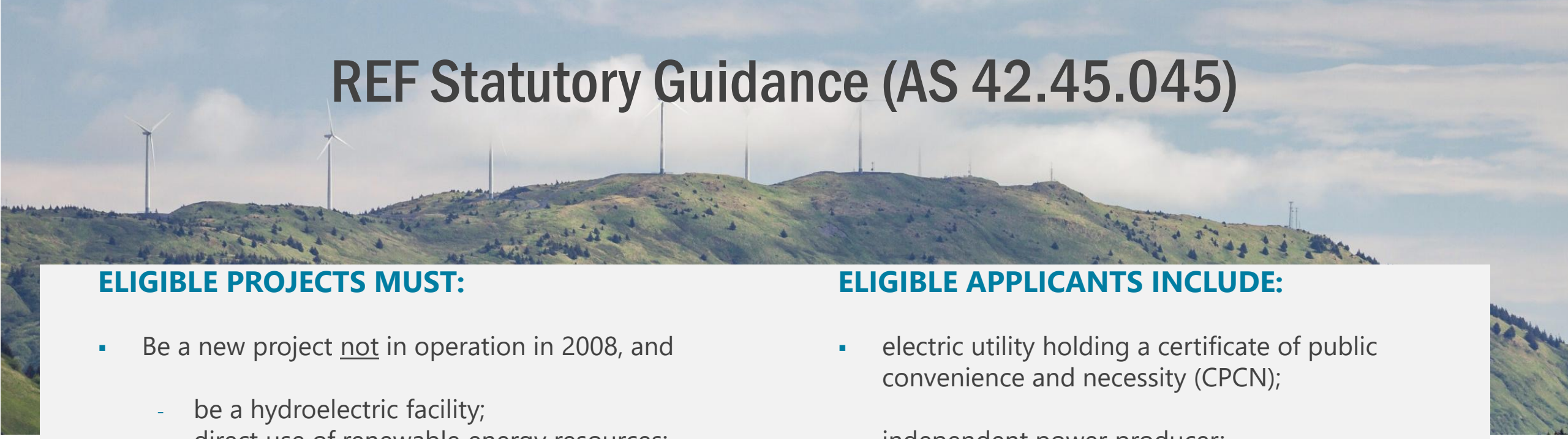
Table of Contents

Renewable Energy Fund (REF) Overview

Established in 2008, the REF is a unique and robust competitive grant program, which provides critical financial assistance for statewide renewable energy projects. The REF's sunset date provision was repealed with House Bill 62, signed into law by Governor Dunleavy on May 25, 2023.

The REF funds projects across all development phases, serving as a catalyst for the continued pursuit of integrating proven and nascent technologies within Alaska's energy portfolio.

- $327 million in REF appropriations by the State.
- 100+ operational projects, 53 in development, and 5 projects funded in FY25.
- The 33rd Alaska State Legislature appropriated $10.5 million for 5 projects recommended by AEA and approved by the REF Advisory Committee.



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.

ELIGIBLE APPLICANTS INCLUDE:

- electric utility holding a certificate of public convenience and necessity (CPCN);
- independent power producer;
- local government;
- or, or other governmental utility, including a tribal council and housing authority.

REF Evaluation Process: Stage 1 Eligibility and Completeness

The REF evaluation process is comprised of four stages. Stage 1 is an evaluation of the applicant, project eligibility and, completeness of the application, 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 2) of the evaluation.
  - The application must provide a detailed 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 that fail to meet the requirements of Stage 1 are rejected by the Authority. Each applicant whose application is rejected is notified of the Authority's decision.

REF Evaluation Process: Stage 2 Technical and Economic Feasibility

Stage 2 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 economists.

The following items are evaluated as part of the Stage 2 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; and,
- 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. Applications that score below 40 points in this stage are automatically rejected by the Authority, however, those projects scoring above 40 may 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 3 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 4 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 of advice from the 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.

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]

Cumulative through Round 16

	Total Round 1-16 Funding		Cost of Power Allocation				Population		Even Split
Energy Region	**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	$18,424,940	6%	13.50%	$28,394,207	($4,227,837)	65%	1%	$3,348,662	$27,422,307
Bering Straits	$23,486,724	8%	16.18%	$34,017,155	($6,478,146)	69%	1%	$4,088,861	$27,422,307
Bristol Bay	$17,590,323	6%	15.99%	$33,620,027	($780,310)	52%	1%	$2,868,848	$27,422,307
Copper River/Chugach	$28,047,612	9%	10.23%	$21,512,838	($17,291,193)	130%	1%	$3,319,823	$27,422,307
Kodiak	$16,659,519	6%	6.96%	$14,632,449	($9,343,294)	114%	2%	$5,311,382	$27,422,307
Lower Yukon-Kuskokwim	$39,888,116	13%	21.01%	$44,170,624	($17,802,804)	90%	4%	$10,825,473	$27,422,307
North Slope	$1,251,859	0%	2.56%	$5,388,828	$1,442,555	23%	1%	$4,062,948	$27,422,307
Northwest Arctic	$32,841,133	11%	16.94%	$35,621,898	($15,030,184)	92%	1%	$3,149,297	$27,422,307
Railbelt	$35,226,299	12%	5.72%	$12,036,080	($29,208,260)	293%	77%	$233,081,400	$27,422,307
Southeast	$66,251,014	22%	8.23%	$17,303,821	($57,599,103)	383%	10%	$29,575,387	$27,422,307
Yukon-Koyukuk/Upper Tanana	$20,941,945	7%	26.13%	$54,947,446	$6,531,777	38%	1%	$2,013,293	$27,422,307
Statewide	$1,035,888	0%	0.00%						
TOTAL	**$301,645,374**	**100%**		**$301,645,374**			**100%**	**$301,645,374**	**$301,645,374**

REF Funding Limits

REF Round XVII Grant Funding Limits

Phase	Low Energy Cost Areas*	High Energy Cost Areas**
Total Project Grant Limit	$2 Million	$4 Million
Phase I: Reconnaissance Phase II: Feasibility and Conceptual Design	The per project total of Phase I and II is limited to 20% of anticipated construction cost (Phase IV), not to exceed $2 Million.	
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	$2 Million per project, including final design and permitting (Phase III) costs, above.	$4 Million 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 $2 million /$4 million (low/high cost areas). Any amount above the usual $2 million 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 XVII funding limits are governed 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 connected to the Railbelt electrical grid or 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 FY2026 / Round XVII

The State of Alaska FY2026 proposed capital budget allocates $6.3 million for REF Round 17 grant funding of recommended projects, fully funding the top 6 projects.

The current list of 18 recommended projects yields a total grant request of $21,214,676. With the proposed REF budget of $6.3 million, there would be insufficient funding to cover all current Round 17 projects as recommended. An additional appropriation of $14.9 million would need to be made to fund all of the current Round 17 recommendations.

The table to the right provides historical REF program funding from program inception through FY2025.

In the FY2025 capital budget, $10.5 was approved in support of the top five projects as recommended in REF Round 16, resulting in REF appropriations in excess of $10 million for the past three fiscal years.

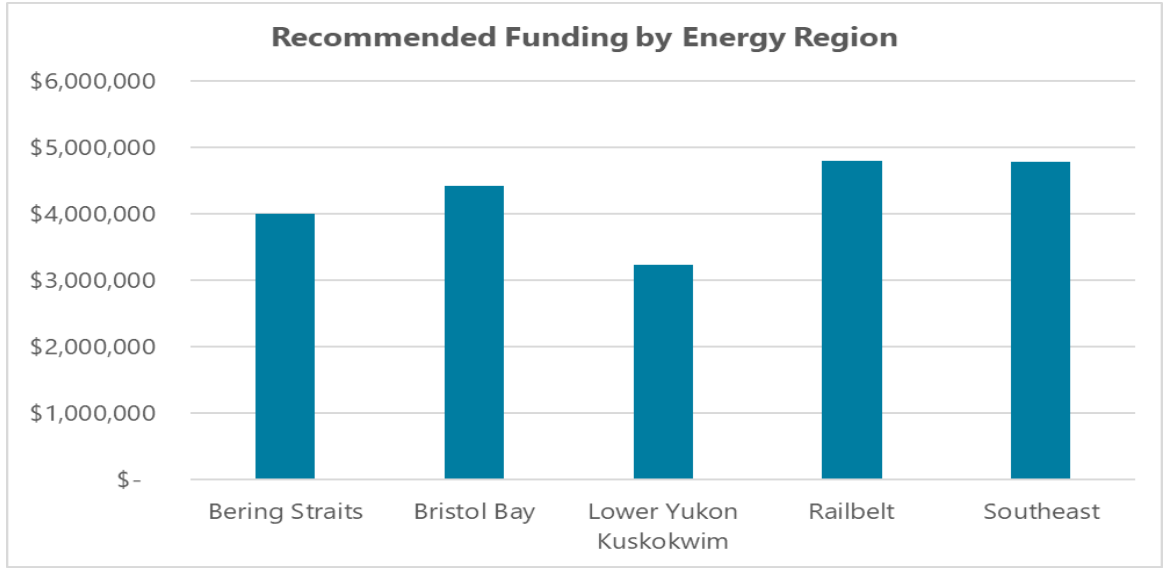
Legislative Appropriation		Fiscal Year
$	100,001,000	FY2008
$	25,000,000	FY2009
$	25,000,000	FY2010
$	36,620,231	FY2011
$	25,870,659	FY2012
$	25,000,000	FY2013
$	22,843,900	FY2014
$	11,512,659	FY2015
$	-	FY2016
$	-	FY2017
$	(3,156,000)	FY2018 - RPSU Reappropriation
$	11,000,000	FY2019
$	-	FY2020
$	-	FY2021
$	4,750,973	FY2022
$	15,000,000	FY2023
$	17,052,000	FY2024
$	10,521,836	FY2025
$	**327,017,258**	**TOTAL (excl. operating appropriation)**

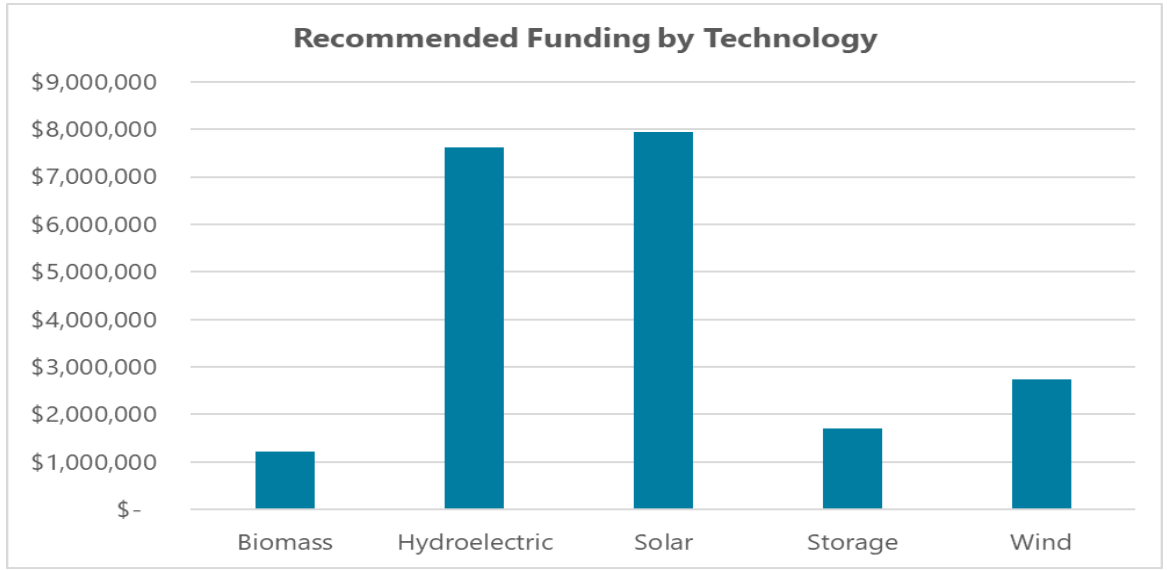
Round XVII – Recommended Applications Summary

There are 18 recommended applications, totaling a request of $21.2 million.

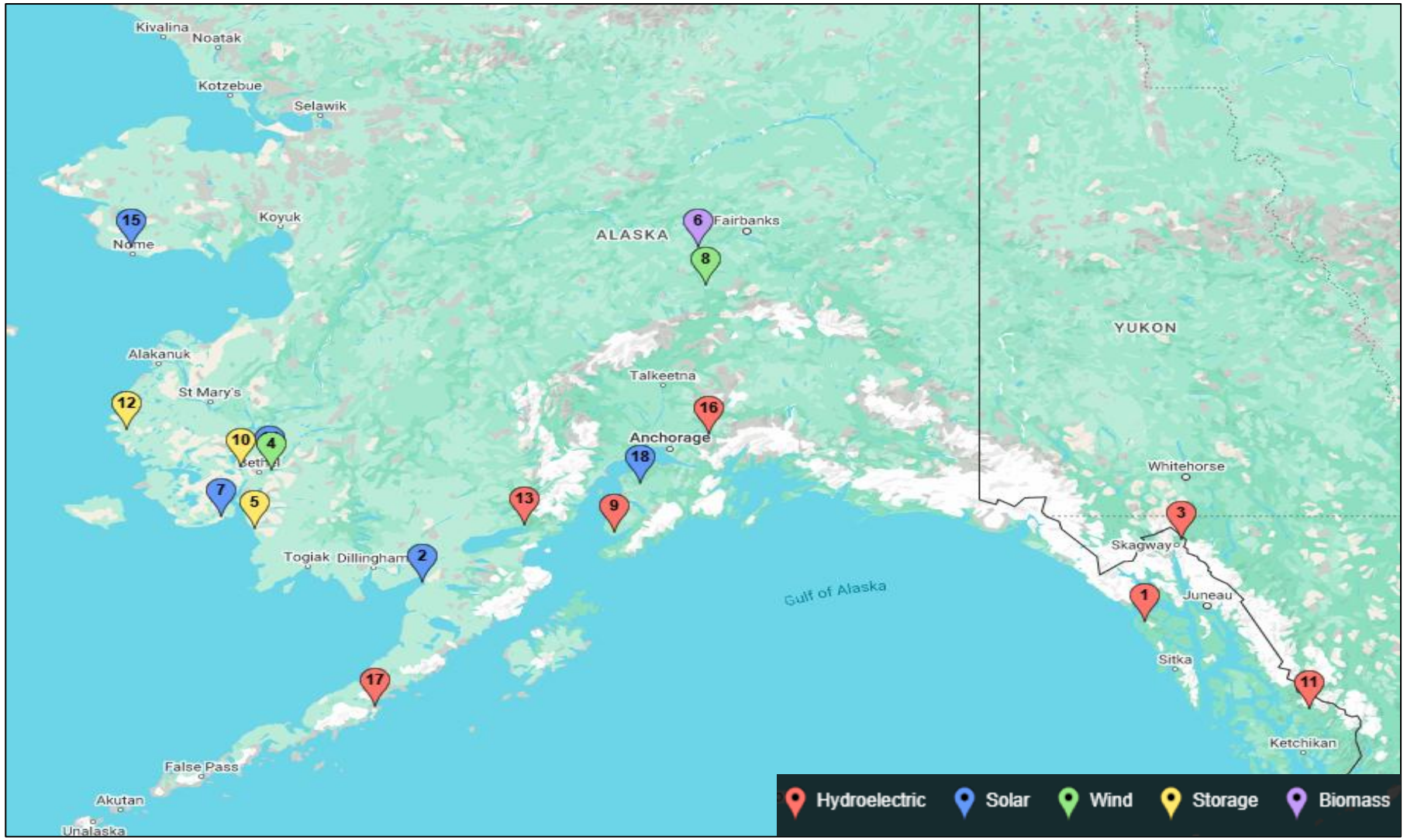
Applications by Energy Region	No. of Applications	REF Funds Requested
Bering Straits	1	$ 4,000,000
Bristol Bay	3	$ 4,420,860
Lower Yukon-Kuskokwim	6	$ 3,226,092
Railbelt	5	$ 4,796,000
Southeast	3	$ 4,771,724
Total	18	$ 21,214,676

Applications by Technology	No. of Applications	REF Funds Requested
Biomass	1	$ 1,223,000
Hydroelectric	7	$ 7,615,236
Solar	5	$ 7,938,634
Storage	3	$ 1,698,827
Wind	2	$ 2,738,979
Total	18	$ 21,214,676





Round XVII Geographical Distribution of Recommended Applications



Applications Forwarded to the Legislature for a Decision on Funding

Round 17 Projects Summary														REF Round 17 Recommended Funding		
Application No.	Applicant	Project Title	Phase	Energy Region	Election District	Technology	Community	Grant Funds Requested	Matching Funds	Stage 3 Score	Benefit / Cost Ratio	HEC	Region Rank	State Rank	Funding Level	Rec. Funding Amount ($)
17006	City of Pelican, Pelican Utilities	Pelican Hydro Relicensing Project, Restoration, Repair	Final Design & Permitting, Construction	Southeast	2-A	Hydroelectric	Pelican	$ 650,474	$ 50,000	76	1.63	$6,374	1	1	Full Funding	$ 650,474
17014	Naknek Electric Association, Inc.	Naknek Solar PV on Cape Suwarof	Construction	Bristol Bay	37-S	Solar	Naknek	$ 3,210,000	$ 900,000	74	0.57	$9,551	1	2	Partial Funding	$ 3,137,848
17010	Goat Lake Hydro, Inc.	Goat Lake Hydro Storage Expansion Study	Reconnaissance	Southeast	3-B	Hydroelectric	Skagway, Haines, Dyea, Klukwan	$ 121,250	$ 52,250	71	0	$6,371	2	3	Full Funding	$ 121,250
17002	Nuvista Light and Electric Cooperative Inc	Nuvista Kwethluk Wind and Battery Project Completion	Construction	Lower Yukon-Kuskokwim	38-S	Wind, Storage	Kwethluk	$ 738,979	$ -	71	0.67	$7,869	1	4	Full Funding w/ Special Provision	$ 738,979
17005	Alaska Village Electric Cooperative, Inc.	Quinhagak Battery Energy Storage System Project	Construction	Lower Yukon-Kuskokwim	38-S	Storage	Quinhagak	$ 443,956	$ 707,625	70	0.88	$6,962	2	5	Full Funding	$ 443,956
17012	City of Nenana	Nenana Biomass District Heat System, Final Phase	Construction	Railbelt	36-R	Biomass	Nenana	$ 1,223,000	$ 168,322	69	1.14	$6,864	1	6	Full Funding	$ 1,223,000
17017	Puvurnaq Power Company	Kongiganak 100 kW Solar Energy Project	Final Design & Permitting, Construction	Lower Yukon-Kuskokwim	38-S	Solar	Kongiganak	$ 728,603	$ 674,330	69	0.6	$9,427	3	7	Partial Funding	$ 720,453
17007	Alaska Renewables LLC	Railbelt Wind Diversification Alaska Renewables	Feasibility and Conceptual Design	Railbelt	Various	Wind	Various	$ 2,000,000	$ 2,187,000	69	1.22	$5,458	2	8	Full Funding	$ 2,000,000
17001	City of Homer	Homer Energy Recovery Project	Construction	Railbelt	6-C	Hydroelectric	Homer	$ 280,000	$ 90,000	68	0.01	$7,120	3	9	Full Funding	$ 280,000
17018	Atmautluak Tribal Utilities	Atmautluak ETS Installation, Integration and Commissioning	Construction	Lower Yukon-Kuskokwim	38-S	Storage	Atmautluak	$ 286,227	$ 188,160	68	0.29	$8,538	4	10	Full Funding	$ 286,227
17015	Southeast Alaska Power Agency (SEAPA)	Southeast Alaska Grid Resiliency (SEAGR)	Final Design & Permitting, Construction	Southeast	1-A; 2-A	Hydroelectric	Petersburg, Ketchikan, Wrangell, Metlakatla	$ 4,000,000	$18,592,510	68	0	$6,730	3	11	Full Funding	$ 4,000,000

*If appropriated by the Legislature and approved the Governor, this funding would become effective July 1, 2025 for inclusion in the Fiscal Year 2026 budget. Projects above orange line denote those currently funded in Fiscal Year 2026 Proposed Capital Budget.

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

Applications Forwarded to the Legislature for a Decision on Funding

Round 17 Projects Summary														REF Round 17 Recommended Funding		
Application No.	Applicant	Project Title	Phase	Energy Region	Election District	Technology	Community	Grant Funds Requested	Matching Funds	Stage 3 Score	Benefit / Cost Ratio	HEC	Region Rank	State Rank	Funding Level	Rec. Funding Amount ($)
17004	Alaska Village Electric Cooperative, Inc.	Chevak Battery Energy Storage System Project	Construction	Lower Yukon-Kuskokwim	38-S	Solar, Storage	Chevak	$ 968,644	$ 170,937	66	0.62	$6,902	5	12	Full Funding	$ 968,644
17016	Pedro Bay Village Council	Knutson Creek Hydro Project Construction	Construction	Bristol Bay	37-S	Hydroelectric	Pedro Bay	$ 400,000	$ 7,200,000	65	0.08	$9,390	2	13	Full Funding w/ Special Provision	$ 400,000
17011	Akiachak, Ltd	Akiachak Native Community 200 kW Solar Energy Project	Final Design & Permitting, Construction	Lower Yukon-Kuskokwim	38-S	Solar	Akiachak	$ 1,443,257	$ 2,265,809	64	0.33	$8,870	6	14	Partial Funding w/ Special Provision	$ 67,833
17013	Nome Joint Utility System	NJUS Solar Nome Banner Ridge Solar Farm	Construction	Bering Straits	39-T	Solar, Storage	Nome	$ 4,000,000	$ 50,000	60	0.57	$9,139	1	15	Full Funding	$ 4,000,000
17009	Matanuska Electric Association	Hunter Creek Hydroelectric Feasibility Study Project	Feasibility and Conceptual Design	Railbelt	Various	Hydroelectric	MEA service area	$ 1,280,500	$ 384,500	58	0.67	$5,920	4	16	Full Funding	$ 1,280,500
17008	City of Chignik	Chignik Hydroelectric Power System	Final Design & Permitting	Bristol Bay	37-S	Hydroelectric	Chignik	$ 883,012	$ 44,346	57	1.06	$7,701	3	17	Full Funding	$ 883,012
17003	Utopian Power LLC	Sterling Solar Project	Final Design & Permitting, Construction	Railbelt	Various	Solar	Sterling	$ 2,000,000	$ 2,000,000	37	0.7	$7,120	5	18	Partial Funding w/ Special Provision	$ 12,500

*If appropriated by the Legislature and approved the Governor, this funding would become effective July 1, 2025 for inclusion in the Fiscal Year 2026 budget. Projects above orange line denote those currently funded in Fiscal Year 2026 Proposed Capital Budget.

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

Round XVI – Partial Funding Reasoning

As part of the evaluation process and pursuant to 3 AAC 170.655(b), 4 applications, as provided below, have been recommended for partial funding. Partial funding recommendations were made in full consideration of project phases applied for, application scoring, project scope eligibility, and household cost of energy.

App. #	Project	Requested Funding	Recommended Funding	Partial Funding Reasoning
17014	Naknek Solar PV on Cape Suwarof	$3,210,000	$3,137,848	Partial Funding adjustment is owing to exclusion of funding for final design cost of $71,152 which is currently ongoing and already funded. Only costs incurred after July 1, 2025, and which are within the scope of the grant agreement are eligible for funding under the REF program. Revised funding recommendation: $3,137,848
17017	Kongiganak 100 kW Solar Energy	$728,603	$720,453	Costs associated with the applicant's administration of the REF grant are not eligible uses of REF funds. The line item for "AEA Grant and NTP" for $8,150 is therefore removed from the funding recommendation, yielding a revised funding recommendation of $720,453.
17011	Akiachak Native Community 200 kW Solar Energy	$1,443,257	$67,833	Funding for final design only in Round 17 is recommended prior to recommendation for funding the construction phase, which will better inform the additional solar capacity integration. AEA requested a copy of the USDA award, solar resource study, and updated HOMER model from the applicant. Applicant provided the USDA grant agreement, but neither the solar resource study, or the updated HOMER model. The applicant may re-apply in a future REF round for the construction phase once the final design is completed. In addition, funding for grant administration is not allowable under the REF program. The $8,150 for the line item entitled "AEA award and NTP" under the final design budget is removed from the funding recommendation, for a recommendation of $67,833 in Round 17.
17003	Sterling Solar Project	$2,000,000	$12,500	Funding for final design and permitting recommended prior to recommendation for funding the construction phase. Many aspects of the project at this juncture are unclear and need to be revised. The applicant may re-apply in a future REF round for the construction phase once the final design is completed. AEA staff identified several issues with the application including: lack of detail on proposed system design, no letters of support included, not specific in stating required permits, lack of discussion of model results and no technical analysis of proposed system was provided.

ALASKA ENERGY AUTHORITY

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Renewable Energy Fund: Round 17 Application Summaries

Homer Energy Recovery Project

App #17001 **Standard Application**

Project Type: Hydro
Applicant: City of Homer
Applicant Type: Local Government
Energy Region: Railbelt
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

In the City of Homer, there exists a pressure control facility located in the City's potable water distribution system. This a mission critical pipeline where the City manages pressure for the potable water supply from the treatment plant to residences and business customers. This pressure control facility is currently venting excess pressure that the City wants to recover and use to produce renewable energy. The proposed project will create a flow bypass around the existing pressure control valve to flow through an energy recovery system. This system shall utilize an integrated solution, a pressure recovery valve that will generate a new source of renewable energy, reduce Homer's carbon footprint, save water and extend the life of its infrastructure. The proposed project shall have a capacity of 10 kW and generate 42,000 kWh that will be used to reduce operating costs for the City's Department of Public Works, Water Utility.

DNR/DMLW Feasibility Comments

No DMLW-managed lands identified in project.Kenai Area Plan but not on State land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

"All projects proposing the development of permanent structures should conduct a geotechnical site survey to determine the potential detrimental effects from natural hazards such as flooding, earthquakes, active faults (https://doi.org/10.14509/24956), tsunamis https://doi.org/10.14509/29523), landslides, volcanoes, liquefaction, subsidence, storm surges, ice movement, snow avalanches, erosion, radon (https://maps.dggs.alaska.gov/radon/), and naturally occurring asbestos, and incorporate appropriate measures to mitigate the risks. Projects may be required to perform a geohazards site survey as a condition of receiving construction permits, depending on location of proposed site.Updated tsunami inundation maps for Homer are located at http://doi.org/10.14509/14474. General area is subject to landslides, earthquake hazards (http://dggs.alaska.gov/pubs/id/3883), and volcanic ash accumulation. Known indoor radon values vary from below detection to 18.7 pCi/L."

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Homer Energy Recovery Project

App #17001 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	16.06
2. Matching Resources (15)	19.50
3. Stage 2 Feasibility (25)	16.50
4. Project Readiness (5)	4.33
5. Benefits (10)	1.67
6. Local Support (5)	2.00
7. Sustainability (10)	8.33
Total Stage 3 Score (100)	68.39

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	66.00
Benefit/Cost Ratio	0.01

Project Rank	
Statewide (of 16 Standard applications)	8
Regional (of all applications)	
Stage 3 Ranking Score (100)	68.39

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$370,000	$370,000
REF Grant Funds	$280,000	$280,000
Matching Funds	$90,000	$90,000

Cost of Electricity	$0.24/kWh
Price of Fuel	$3.73/Gal
Household Energy Cost	$7,120

AEA Review Comments & Recommendation

Full Funding

Election District: 6-C

Renewable Energy Fund: Round 17 Application Summaries

Nuvista Kwethluk Wind and Battery Project Completion

App #17002 **Standard Application**

Project Type: Wind, Transmission, Storage
Applicant: Nuvista Light and Electric Cooperative Incorporated
Applicant Type: IPP

Energy Region: Lower Yukon-Kuskokwim
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

Kwethluk Incorporated (KI) is working with Nuvista Light & Electric Cooperative (Nuvista) on a Wind and Battery Project in Kwethluk, Alaska. Nuvista hired Intelligent Energy Systems as the contractors for this project in 2019. Kwethluk Inc. and Nuvista hired twenty local construction crew members to work seasonally on this project in 2020-2022. The wind and battery project includes the installation of 4 X 100 KW 24.4 wind turbines, a 500 KW battery energy storage system, 200 KW load regulating boiler, master controller to integrate the renewable energy into the existing diesel system, and 30 electrical thermal stoves. All material and equipment are in place in Kwethluk. The Covid 19 pandemic caused major delays and increased costs for materials (equipment and shipping via air and barge) for the wind and battery project causing increased costs. Kwethluk has had 2 years of very wet summers making the constructions season very difficult when dealing with heavy equipment and wet tundra/roads. The project was put on weather hold multiple times in the last two years due to roads washing out and the work area just too wet to work in. The project had another major setback when it learned of the poor craftsmanship of the supporting safety cables for erecting the towers in September of 2022. The project team attempted to raise one of the towers when two spelter cable connection failed causing major structural damage to the gin pole and damage to the base structure of the tower assembly. This has added a 1 year + delay to the project and many extra work hours to fix the damaged tower. Since then, new cables have been replaced by the manufacturer and is currently at the job site in Kwethluk, Alaska. With these setbacks and overlying costs, Nuvista does not have the extra funds to complete the project at this time. This application to the AEA REF Round 16 is to fund the final steps of the project (installation of the 30 ETS stoves, raise the towers) and commissioning the system.

DNR/DMLW Feasibility Comments

No DMLW-managed lands identified in project. Not in an area plan or on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic map https://dggs.alaska.gov/pubs/id/12857 may have useful regional geologic information. General area is subject to erosion and flooding. This region is in the zone of sporadic to isolated permafrost (dominantly lake thermokart terrain), meaning that ~10-50 percent or less of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low.

Renewable Energy Fund: Round 17 Application Summaries

Nuvista Kwethluk Wind and Battery Project Completion

App #17002 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	17.75
2. Matching Resources (15)	21.00
3. Stage 2 Feasibility (25)	15.58
4. Project Readiness (5)	4.33
5. Benefits (10)	1.00
6. Local Support (5)	2.00
7. Sustainability (10)	9.33
Total Stage 3 Score (100)	71.00

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	62.33
Benefit/Cost Ratio	0.67

Project Rank	
Statewide (of 16 Standard applications)	4
Regional (of all applications)	
Stage 3 Ranking Score (100)	71.00

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$	$
REF Grant Funds	$738,979	$738,979
Matching Funds	$00	$00

Cost of Electricity	$0.52/kWh
Price of Fuel	$5.56/Gal
Household Energy Cost	$7,869

AEA Review Comments & Recommendation **Full Funding with Special Provision**

Election District: 38-S

Renewable Energy Fund: Round 17 Application Summaries

Sterling Solar Project

App #17003 **Standard Application**

Project Type: Solar
Applicant: Utopian Power LLC
Applicant Type: IPP
Energy Region: Railbelt
Proposed Phase(s): Design, Construction
Recommended Phase(s): Design, Construction

Project Description

The project is a sustainable energy solution that aims to integrate a local and resilient solar energy model. The project involves the installation of a 4MWdc solar system which will be used to generate electricity. The solar system will be on a landfill which is owned by the Kenai Peninsula Borough and leased to Utopian Power. The energy generated will be used to power the state's communities. This system will also feed electricity back to the grid through the local utility.

DNR/DMLW Feasibility Comments

No DMLW-managed lands identified in project. On KPB lands. In Kenai National Moose Range on Mental Health Trust Land -- cannot dispose of land within an LDA.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Guidebook and geologic map https://doi.org/10.14509/15941 may have useful regional geologic information. General area is subject to earthquake hazards (http://dggs.alaska.gov/pubs/id/3883) and volcanic ash accumulation. Known indoor radon values vary from below detection to 7.7 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

Sterling Solar Project

App #17003 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	16.06
2. Matching Resources (15)	0.00
3. Stage 2 Feasibility (25)	10.42
4. Project Readiness (5)	1.50
5. Benefits (10)	1.42
6. Local Support (5)	0.00
7. Sustainability (10)	8.00
Total Stage 3 Score (100)	37.39

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	41.67
Benefit/Cost Ratio	0.70

Project Rank	
Statewide (of 16 Standard applications)	16
Regional (of all applications)	
Stage 3 Ranking Score (100)	37.39

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$5,955,000	$5,955,000
REF Grant Funds	$2,000,000	$12,500
Matching Funds	$2,000,000	$12,500

Cost of Electricity	$0.24/kWh
Price of Fuel	$3.73/Gal
Household Energy Cost	$7,120

AEA Review Comments & Recommendation

Partial Funding with Special Provision

Partial Funding:
Funding for final design and permitting recommended prior to recommendation for funding construction phase. Many aspects of the project at this juncture are unclear and need to be revised.

Project Concerns: Cost estimates are quite vague, more detail is requested prior to full funding. Lack of detail on proposed system design, no letters of support included. Not specific in stating required permits. Lack of project presentation including lack of discussion of model results and no technical analysis of proposed system was provided. Proposed system capacity is unclear, is the project capacity 3.2MW or 4MW?

Election District: 8-D

Renewable Energy Fund: Round 17 Application Summaries

Chevak Battery Energy Storage System Project

App #17004 **Standard Application**

Project Type: Storage
Applicant: Alaska Village Electric Cooperative, Inc.
Applicant Type: Utility
Energy Region: Lower Yukon-Kuskokwim
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

Alaska Village Electric Cooperative, Inc. (AVEC) is requesting $968,644 through an Alaska Energy Authority (AEA) Renewable Energy Fund (REF) grant to construct a Battery Energy Storage System (BESS) to be incorporated into the Chevak power system, which includes four Northwind 100 Turbines and a power plant. Presently, in order to prevent outages during wind fluctuations, AVEC must have a loaded diesel generator constantly running. A BESS would supply a constant spinning reserve providing power during losses of wind resource generation for short periods while replacement diesel generation is started and brought online. Because a generator would not be constantly running, this project would allow the power plant to burn less diesel, thus helping to lower the cost of power in Chevak. The AEA REF grant funds would be used to incorporate a BESS into the existing wind turbine system and power plant in Chevak, and if funded by the AEA, this effort will be supplemented with AVEC contributions. The scope of work under this funding request is for the construction phase of this project and includes the installation of a BESS that will supply a spinning reserve of power allowing AVEC's Chevak power plant to operate diesels off.

DNR/DMLW Feasibility Comments

No DMLW-managed lands identified in project. On TLO lands. Not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic map and report https://dggs.alaska.gov/pubs/id/13624 may have useful regional information. General area is subject to erosion and flooding. This region is in the zone of sporadic to isolated permafrost (lake and wetland thermokart terrain), meaning that ~10-50 percent or less of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low.

Renewable Energy Fund: Round 17 Application Summaries

Chevak Battery Energy Storage System Project

App #17004 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	15.57
2. Matching Resources (15)	16.50
3. Stage 2 Feasibility (25)	17.29
4. Project Readiness (5)	4.00
5. Benefits (10)	2.08
6. Local Support (5)	2.50
7. Sustainability (10)	8.00
Total Stage 3 Score (100)	65.94

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	69.17
Benefit/Cost Ratio	0.62

Project Rank	
Statewide (of 16 Standard applications)	10
Regional (of all applications)	
Stage 3 Ranking Score (100)	65.94

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$	$
REF Grant Funds	$968,644	$968,644
Matching Funds	$170,937	$170,937

Cost of Electricity	$0.52/kWh
Price of Fuel	$4.64/Gal
Household Energy Cost	$6,902

AEA Review Comments & Recommendation **Full Funding**

Election District: 38-S

Renewable Energy Fund: Round 17 Application Summaries

Quinhagak Battery Energy Storage System Project

App #17005 **Standard Application**

Project Type: Storage
Applicant: Alaska Village Electric Cooperative, Inc.
Applicant Type: Utility
Energy Region: Lower Yukon-Kuskokwim
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

Alaska Village Electric Cooperative, Inc. (AVEC) is requesting $443,956 through an Alaska Energy Authority (AEA) Renewable Energy Fund (REF) grant to construct a Battery Energy Storage System (BESS) to be incorporated into the Quinhagak power system, which includes three Northwind 100 wind turbines and a power plant. Presently, in order to prevent outages during wind fluctuations, AVEC must have a diesel generator constantly running. A BESS would supply a constant spinning reserve providing power during losses of wind resource generation for short periods while replacement diesel generation is started and brought online. Because a generator would not be constantly running, this project would allow the power plant to burn less diesel, thus helping to lower the cost of power in Quinhagak.

DNR/DMLW Feasibility Comments

No DMLW-managed lands identified in project. Bristol Bay Area Plan - not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic map and report https://dggs.alaska.gov/pubs/id/13624 may have useful regional information. General area is subject to erosion and flooding. This region is in the zone of sporadic permafrost (lake and wetland thermokart terrain), meaning that 10-50 percent of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low.

Renewable Energy Fund: Round 17 Application Summaries

Quinhagak Battery Energy Storage System Project

App #17005 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	15.7
2. Matching Resources (15)	21.00
3. Stage 2 Feasibility (25)	17.17
4. Project Readiness (5)	4.00
5. Benefits (10)	2.00
6. Local Support (5)	2.50
7. Sustainability (10)	8.00
Total Stage 3 Score (100)	70.37

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	68.67
Benefit/Cost Ratio	0.88

Project Rank	
Statewide (of 16 Standard applications)	5
Regional (of all applications)	
Stage 3 Ranking Score (100)	70.37

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$1,236,581	$1,236,581
REF Grant Funds	$443,956	$443,956
Matching Funds	$707,625	$707,625

Cost of Electricity	$0.50/kWh
Price of Fuel	$4.65/Gal
Household Energy Cost	$6,962

AEA Review Comments & Recommendation **Full Funding**

Election District: 38-S

Renewable Energy Fund: Round 17 Application Summaries

Pelican Hydro Relicensing Project, Restoration, Repair

App #17006 **Standard Application**

Project Type: Hydro
Applicant: City of Pelican, Pelican Utilities
Applicant Type: Utility
Energy Region: Southeast
Proposed Phase(s): Design, Construction
Recommended Phase(s): Design, Construction

Project Description

The City of Pelican is in the process of relicensing its FERC license P-10198 for its 700kW Federal Energy Regulatory Commission (FERC) hydropower project. FERC relicensing requires three significant actions: FERC regulatory relicensing, which includes implementing a fish habitat restoration plan (FHRP), replacing a damaged trash rack, and stabilizing a Gabion Wall at the Powerhouse from stream bank erosion. These relicensing actions are vital to ensure that the Pelican community continues to benefit from dependable and cost-effective hydropower, which supports its residents, businesses, and the local economy. Lat: 57.95819; Long: -136.21535

DNR/DMLW Feasibility Comments

Northern Southeast Area Plan (unit C12) classified Water Resources.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic map and report https://dggs.alaska.gov/pubs/id/11998 may have some useful regional geologic information. Tsunami inundation maps for Pelican are located at https://doi.org/10.14509/30423. General area is subject to earthquake hazards (https://doi.org/10.14509/2356; https://www.ncei.noaa.gov/maps/hazards). Radon concentrations are modeled to be moderate, averaging 2-4 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Pelican Hydro Relicensing Project, Restoration, Repair

App #17006 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	14.38
2. Matching Resources (15)	10.50
3. Stage 2 Feasibility (25)	24.04
4. Project Readiness (5)	5.00
5. Benefits (10)	9.67
6. Local Support (5)	2.50
7. Sustainability (10)	10.00
Total Stage 3 Score (100)	76.09

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	96.17
Benefit/Cost Ratio	1.63

Project Rank	
Statewide (of 16 Standard applications)	1
Regional (of all applications)	
Stage 3 Ranking Score (100)	76.09

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$00	$
REF Grant Funds	$650,474	$650,474
Matching Funds	$50,000	$50,000

Cost of Electricity	$0.26/kWh
Price of Fuel	$4.89/Gal
Household Energy Cost	$6,374

AEA Review Comments & Recommendation

Full Funding

This project has been confirmed as an eligible project under AEA statutes AS 42.45.045(f)(1). Per a legal memo issued by AEA on July 20, 2023, the City of Pelican's (applicant) stated use of funds would be permissible use of program funds because the project is "an addition to an existing project made after August 20, 2008.

Election District: 2-A

Renewable Energy Fund: Round 17 Application Summaries

Railbelt Wind Diversification Alaska Renewables

App #17007 **Standard Application**

Project Type: Wind, Transmission, Storage
Applicant: Alaska Renewables LLC
Applicant Type: IPP
Energy Region: Railbelt
Proposed Phase(s): Feasibility
Recommended Phase(s): Feasibility

Project Description

Following years of reconnaissance, initial field assessments, and land leasing discussions with the State of Alaska and several Alaska Native Regional and Village Corporations, AKR now has several wind development assets which have the potential to dramatically displace expensive fossil fuel consumption for electricity generation in Alaska. Bald Hills Wind is a project suggested by members of the Native Village of Tyonek and would interconnect into Chugach Electric's grid. Chatanika Wind is a project in the Interior that would relieve the flow of power from south to north and would interconnect into GVEA's grid. Walker Dome is a project at the center of Alaska's Intertie that would provide grid stability between south and north, would support the community of Healy through their energy transition with the retirement of Healy 2, and would interconnect into GVEA's grid. Now, AKR is advancing into the core Phase II work of site environmental and wind resource data collection. Battery energy storage, long-duration storage, and transmission services are also key technology investments that are relevant to some or all these projects to provide grid stability and part of the mid-term development scope of the projects.

DNR/DMLW Feasibility Comments

"PAAD - Site 2 appears to be near accepted RS 2477 Right of way. RST Merrill River - Stony River Passes near this location. The project will be subject to the right of way for this trail. Site 3 appears to be at the fork of two accepted RS 2477 Rights-of-way. RST 237 Circle-Fairbanks Trail a codified RS 2477 in AS 19.30.400 and uncodified RST 1908 Chena Hot Springs - Olympia Creek Trail. The project will be subject to the Right-of-way for these two trails and travel on these two trails will not be limited by the project."Site 1: In Yukon-Tanana Area Plan on Mental Health Trust Land; Site 2: in Kenai Area Plan on Mental Health Trust Land; Site 3: in Eastern Tanana Area Plan on state land but unclassified.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic maps and reports may have useful regional information: https://dggs.alaska.gov/pubs/id/12899 Geologic map (site 1); https://doi.org/10.14509/29471 Geologic map and report (site 2); https://dggs.alaska.gov/pubs/id/12617 Geologic (map site 3).

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Railbelt Wind Diversification Alaska Renewables

App #17007 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	12.31
2. Matching Resources (15)	19.50
3. Stage 2 Feasibility (25)	17.64
4. Project Readiness (5)	3.67
5. Benefits (10)	5.92
6. Local Support (5)	2.50
7. Sustainability (10)	7.33
Total Stage 3 Score (100)	68.86

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	70.54
Benefit/Cost Ratio	1.22
Project Rank	
Statewide (of 16 Standard applications)	7
Regional (of all applications)	
Stage 3 Ranking Score (100)	68.86

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$	$
REF Grant Funds	$2,000,000	$2,000,000
Matching Funds	$2,187,000	$2,187,000

Cost of Electricity	$0.21/kWh
Price of Fuel	$2.47/Gal
Household Energy Cost	$5,458

AEA Review Comments & Recommendation **Full Funding**

Election District:

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Chignik Hydroelectric Power System

App #17008 **Standard Application**

Project Type: Hydro
Applicant: City of Chignik
Applicant Type: Local Government
Energy Region: Bristol Bay
Proposed Phase(s): Design
Recommended Phase(s): Design

Project Description

Note to reviewers: This application is a resubmittal of application 15014 from Round 15. There are minor modifications from the Round 15 application, including the addition of beneficial electrification. All changes from the previous application are identified by bold, italicized text. The City of Chignik's water source is Indian Lake which is impounded by a timber buttress dam. Water flows from the dam through a 7,260 ft transmission line to the community water treatment plant. Flow from Indian Lake has also historically powered a now decommissioned 60 kW hydroelectric turbine in local cannery, the FERC permit for which is now owned by the city. The dam and portions of the water transmission lines are over 70 years old, near failure, and in urgent need of replacement. As of the date of this application, the Alaska Area Office of the Indian Health Service (IHS) has approved $7,230,830 of funding ($639,987 for engineering- including geotechnical, survey, and design- and $6,590,843 for construction) for the purpose of renovating the aging dam and water transmission lines. This funding is being reviewed by the national level IHS and expected to be available in 2023. The dam and water transmission line renovation project to be funded by IHS is referred to as the "dam renovation" for the remainder of this application. Concurrent with this dam renovation, the city would like to install a hydroelectric power generation system, consisting of a penstock, new powerhouse with a Turgo turbine, tailrace, electrical transmission to the existing diesel powerplant.. This project is referred to the "hydroelectric system" for the remainder of this application. This application seeks funding to complete the final design and permitting phase (Phase III) for the hydroelectric system concurrent with the design of the dam renovation. Phase III of the hydroelectric system project will utilize a 2014 feasibility study performed by the consulting firm Hatch Ltd., and a 2018 Preliminary Engineering Report (PER) performed by the Alaska Native Tribal Health Consortium (both documents are included in Appendix A). Because the dam renovation is expected to be funded in 2023, is presents a unique opportunity to design the dam renovation concurrently with the hydroelectric system in order to achieve cost savings through economies of scale and ensure that electric generation is considered in the sizing, location and layout of the water source project. If the dam renovation is completed without the hydroelectric system, design and construction of the hydroelectric system would be significantly more expensive, and will be limited by a dam that was designed without consideration for future electrical generation. Therefore, it is vital that funding is provided during the current round of the REF in order to fully leverage the dam renovation funding to achieve maximally efficient achievement of project outcomes. AEA has previously recommended this project for design funding under the REF three times, but the State has not yet appropriated funds for it. However, this is the first application where the dam renovation will be separately funded. The 2014 feasibility study found that the proposed hydroelectric system could meet approximately 94.7% of the city's electrical load, saving approximately 50,441 gallons of diesel annually at a current cost of $5.03 per gallon. This project will save an additional 13,571 gallons of heating fuel by utilizing excess hydro-generated electricity for heating the community clinic and school. This project will provide public benefits to both the local electric utility and individual rate payers in the form of fuel savings to the utility and lowered utility bills for community members. This project would make the local utility financially stronger, keep money circulating in the community that would have otherwise gone to the fuel provider, and reduce fuel use and the associated emissions.

DNR/DMLW Feasibility Comments

Bristol Bay Area Plan - not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic map and report https://doi.org/10.3133/b1969B. may have useful regional geologic information. The coastal area in this region is subject to potential tsunami hazard, see https://doi.org/10.14509/29675 and

https://www.ncei.noaa.gov/maps/hazards. General area is subject to volcanic ash accumulation and earthquake hazards. Radon concentrations are modeled to be moderate averaging 2.4 pCi/L

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Chignik Hydroelectric Power System

App #17008 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	17.37
2. Matching Resources (15)	10.50
3. Stage 2 Feasibility (25)	14.38
4. Project Readiness (5)	3.17
5. Benefits (10)	3.00
6. Local Support (5)	2.50
7. Sustainability (10)	6.00
Total Stage 3 Score (100)	56.91

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	57.50
Benefit/Cost Ratio	1.06

Project Rank	
Statewide (of 16 Standard applications)	15
Regional (of all applications)	
Stage 3 Ranking Score (100)	56.91

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$7,228,206	$7,228,206
REF Grant Funds	$883,012	$883,012
Matching Funds	$44,346	$44,346

Cost of Electricity	$0.58/kWh
Price of Fuel	$5.03/Gal
Household Energy Cost	$7,701

AEA Review Comments & Recommendation

Full Funding

Election District: 37-S

Renewable Energy Fund: Round 17 Application Summaries

Hunter Creek Hydroelectric Feasibility Study Project

App #17009 **Standard Application**

Project Type: Hydro, Transmission, Storage
Applicant: Matanuska Electric Association
Applicant Type: Utility
Energy Region: Railbelt
Proposed Phase(s): Feasibility
Recommended Phase(s): Feasibility

Project Description

This project will conduct a feasibility study of the east fork Hunter Creek hydropower resource by expanding on the findings of the reconnaissance study completed by Eklutna, Inc. in 2013 with partial grant funding award in REF Round 4. The proposed study will include new field studies updated and more detailed technical, regulatory, and economic analysis to determine whether the project is feasible and a preferred project configuration. The prior reconnaissance study identified a viable 7.7 MW run-of-river hydro project on the east fork of Hunter Creek with an estimated 27,100 MWh of annual energy output. East fork project configurations considered by the 2013 study ranged from 5.3 to 23 MW installed capacity and 21,000 to 80,900 MWh annual output. This study will also assess storage potential at the east fork diversion site and the potential added value to the project that can be realized with reservoir and/or battery energy storage system (BESS) to enable the project to form a Knik River microgrid.

DNR/DMLW Feasibility Comments

Proposed site (based on a single GPS coordinate and not a project footprint) is located within S016N004E31, which is state selected lands at this point with ANILCA top-filing. It is unlikely that this location is under DNR management. However, if it is determined that this is under DNR management, projects such as this often need development plan details such as placement of infrastructure, transmission lines and access to be clearly defined in the application. Permits may be required for feasibility studies and for access if access development is not within GAUs. If access involves material, a material sales contract may be needed.Knik Public Use Area- LDA (41.23.180) -- No disposals of land within an LDA. Leases may be okay if they follow the management guidelines in the Knick River Public Use Area Management Plan.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic map and report https://dggs.alaska.gov/pubs/id/24604 may have useful geologic information. General area is subject to snow avalanche and landslide hazards. Radon concentrations are modeled to be moderate, averaging 2-4 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

Hunter Creek Hydroelectric Feasibility Study Project

App #17009 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	13.35
2. Matching Resources (15)	19.50
3. Stage 2 Feasibility (25)	13.75
4. Project Readiness (5)	3.50
5. Benefits (10)	1.50
6. Local Support (5)	1.00
7. Sustainability (10)	5.00
Total Stage 3 Score (100)	57.60

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	55.00
Benefit/Cost Ratio	0.67

Project Rank	
Statewide (of 16 Standard applications)	14
Regional (of all applications)	
Stage 3 Ranking Score (100)	57.60

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$67,765,000	$67,765,000
REF Grant Funds	$1,280,500	$1,280,500
Matching Funds	$384,500	$384,500

Cost of Electricity	$0.20/kWh
Price of Fuel	$3.30/Gal
Household Energy Cost	$5,920

AEA Review Comments & Recommendation **Full Funding**

Election District: Various

Renewable Energy Fund: Round 17 Application Summaries

Goat Lake Hydro Storage Expansion Study

App #17010 **Standard Application**

Project Type: Hydro
Applicant: Goat Lake Hydro, Inc.
Applicant Type: Utility
Energy Region: Southeast
Proposed Phase(s): Recon
Recommended Phase(s): Recon

Project Description

Alaska Power & Telephone (AP&T) subsidiary Goat Lake Hydro, Inc. requests $121,250 in AEA REF Round 16 funding for Phase I Reconnaissance analysis examining an increase to the reservoir at Goat Lake Hydro (GLH), a currently operational hydropower project. GLH will supply $52,250 of in-kind funding as a match. The project currently provides power to the communities of Skagway, Haines, and Dyea, as well as to Inside Passage Electrical Cooperative (IPEC), which resells energy in the community of Klukwan.

DNR/DMLW Feasibility Comments

Northern Southeast Area Plan but not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The coastal area in this region is subject to potential tsunami hazard, see https://dggs.alaska.gov/pubs/id/30029 and https://www.ncei.noaa.gov/maps/hazards. General area is subject to earthquake, volcanic ash accumulation, snow avalanche, and landslide hazards. Radon concentrations are modeled to be high, averaging 4 pCi/L or greater.

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Goat Lake Hydro Storage Expansion Study

App #17010 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	14.37
2. Matching Resources (15)	19.50
3. Stage 2 Feasibility (25)	17.63
4. Project Readiness (5)	5.00
5. Benefits (10)	2.08
6. Local Support (5)	2.50
7. Sustainability (10)	10.00
Total Stage 3 Score (100)	71.08

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	70.50
Benefit/Cost Ratio	0.00

Project Rank	
Statewide (of 16 Standard applications)	3
Regional (of all applications)	
Stage 3 Ranking Score (100)	71.08

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$	$
REF Grant Funds	$121,250	$121,250
Matching Funds	$52,250	$52,250

Cost of Electricity	$0.32/kWh
Price of Fuel	$3.60/Gal
Household Energy Cost	$6,371

AEA Review Comments & Recommendation **Full Funding**

Election District: 3-B

Renewable Energy Fund: Round 17 Application Summaries

Akiachak Native Community 200 kW Solar Energy Project

App #17011 **Standard Application**

Project Type: Solar
Applicant: Akiachak, Ltd
Applicant Type: Government Entity
Energy Region: Lower Yukon-Kuskokwim
Proposed Phase(s): Design, Construction
Recommended Phase(s): Design, Construction

Project Description

The project proposes to install, integrate, and commission a 200-kW solar/PV array energy for the islanded hybrid wind-diesel-battery-heat system for Akiachak Native Community village corporation, Akiachak, Ltd. (ANC), a tribally owned community utility in Akiachak, AK, which is designated as a High Energy Cost Area with a residential retail electric rate of $0.60 per kWh. Our utility was recently awarded a grant through the USDA High Energy Cost (HEC) grant program in the amount of $2,265,809 for the installation of 200 kW solar PV and a battery energy storage system (500 kW/677 kVA lithium ion). While this represents a major upgrade and will be of tremendous benefit to our community, to really be able to optimize the system it needs to be upgraded to include a total of 400 kW PV, as that will boost our displacement of fuel from 17,000 to more than 42,000 gallons annually and more than double the kWh of solar produced annually (from 226,215 to 452,431 kWh). Due to limited availability of funds, we were not able to apply for the full capacity required to optimize our renewable system through the USDA HEC grant; instead, we now seek to leverage that funding as match toward the current proposal, which will allow us to gain cost efficiencies through the combining of these two projects. Other benefits to be gained by adding to our solar array include:- Increased system reliability- Reduced diesel maintenance and operations cost due to increased hours of diesel off operations- Improved community resilience through additional source of energy- The additional displacement of 24,514 gallons of diesel (@$3.90/gallon = $95,605) annually, as well as an additional 900 hours of diesel off operations ($9.25/hour = $8,325) resulting in an estimated annual reduction in operating costs in excess of $103,930 from this 200 kW addition to the overall project.- Reduced fuel purchases, resulting in a deferral of investments in bulk fuel storage capacity as well as a reduction in harmful greenhouse gas emissions- Support for local workforce, both during the period of construction and long-term, through on-going cost savings to our tribal utility- Advancement of knowledge and understanding of integration and operation of diesel-renewable hybrid systems in the region.

DNR/DMLW Feasibility Comments

No DMLW-managed lands identified in project. Not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic map https://dggs.alaska.gov/pubs/id/12857 may have useful information. General area is subject to erosion and flooding. This region is in the zone of sporadic to isolated permafrost (dominantly lake thermokart terrain), meaning that ~10-50 percent or less of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low.

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Akiachak Native Community 200 kW Solar Energy Project

App #17011 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	20.01
2. Matching Resources (15)	21.00
3. Stage 2 Feasibility (25)	11.11
4. Project Readiness (5)	0.83
5. Benefits (10)	1.38
6. Local Support (5)	1.00
7. Sustainability (10)	8.33
Total Stage 3 Score (100)	63.65

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	44.42
Benefit/Cost Ratio	0.33
Project Rank	
Statewide (of 16 Standard applications)	12
Regional (of all applications)	
Stage 3 Ranking Score (100)	63.65

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$1,443,257	$1,443,257
REF Grant Funds	$1,443,257	$67,833
Matching Funds	$2,265,809	$113,291

Cost of Electricity	$0.60/kWh
Price of Fuel	$6.17/Gal
Household Energy Cost	$8,870

AEA Review Comments & Recommendation

Partial Funding with Special Provision

The USDA funded solar & battery project is currently in construction and fully funded. This project is to add additional solar capacity. It is unclear how the USDA-funded solar panels will integrate with the four new diesel gensets in the existing diesel powerhouse. There is concern over loss of heat recovery with integration of renewables. Technical feasibility remains in question.

AEA requested a copy of the USDA award, solar resource study, and updated HOMER model from the applicant. Applicant provided the USDA grant agreement, but neither the solar resource study, or the updated HOMER model.

It is recommended that this project be funded for final design, which will better inform the additional solar capacity integration.

Funding for grant administration is not allowable under the REF program. The $8,150 for the line item entitled "AEA award and NTP" under the final design budget is thus removed from the funding recommendation, for a total recommendation of $67,833 for final design.

Election District: 38-S

Renewable Energy Fund: Round 17 Application Summaries

Nenana Biomass District Heat System, Final Phase

App #17012 **Heat Application**

Project Type: Biomass
Applicant: City of Nenana
Applicant Type: Local Government
Energy Region: Yukon-Koyukuk/Upper Tanana
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

The City of Nenana is a rural community located in the interior of Alaska with a population of 412 residents; 41% of which are Alaskan Native. This is a biomass wood-chip boiler system project that will provide heat to several public buildings, provide services to the community for needs which have never been met before, and help to dramatically reduce heating expenses. The problems this project will address include high utility costs, local poverty rates, climate change impacts and increasing wildfire risk in our region. Nenana is not only identified as an underserved population, but is also an area of persistent poverty with 62.75% LMI. Utilizing woody debris from local sources and forest management projects to supply the biomass boiler mitigates wildfire risk and reduces the use of fossil fuels while providing low-cost heat with a renewable energy source. The biomass facility will support local employment, improve community sanitation, potentially revitalize the local milling industry, and be a major source of marketable biochar – a soil amendment that helps to increase soil fertility for agriculture. The intended outcomes of this project are to provide ongoing employment opportunities and affordable heat, sequester carbon, reduce use of fossil fuels andcreate healthy tree stands to mitigate wildfire risk in the region. The City's limited budget restricts its ability to provide adequate support to reduce poverty, address unemployment, or bolster the local economy. The grant funding we have received to date has been utilized to design and progress into the final stages of building a biomass wood-chip heating facility. The project began in 2019 and upon completion, will provide heat to the local K-12 school, fitness center, water treatment plant, fire station, school recreation hall and a hookup to heat a future community greenhouse. These amenities which will be available within the community upon the completion of this project will allow for those who live in dry cabins year-round to have local access to safe drinking water, showers, and laundry facilities. The City will have a sustainable energy heat source to provide renewable energy for years to come. Improved forest management practices will reduce wildfire risk in our region. The jobs created by this project will help to improve the poverty rate and increase the resilience of our community, as energy costs are mitigated, and the City budget can facilitate employment opportunities for year-round positions at the Biomass Heat Plant. This is the final phase of the project which is intended to complete all remaining portions of the project and make it fully operational.

DNR/DMLW Feasibility Comments

Not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic maps and reports https://dggs.alaska.gov/pubs/id/1321 and https://dggs.alaska.gov/pubs/id/1321 may have useful information about the general geology. Location is within the Minto Flats seismic zone, active within the past 150 years, and this region is in the zone of discontinuous to isolated permafrost (wetland thermokart terrain), meaning that ~50-90 percent of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be moderate, averaging 2-4 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Nenana Biomass District Heat System, Final Phase

App #17012 **Heat Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	15.48
2. Matching Resources (15)	13.50
3. Stage 2 Feasibility (25)	19.64
4. Project Readiness (5)	4.33
5. Benefits (10)	5.33
6. Local Support (5)	2.50
7. Sustainability (10)	8.67
Total Stage 3 Score (100)	69.46

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	78.58
Benefit/Cost Ratio	1.14

Project Rank	
Statewide (of 2 Heat applications)	1
Regional (of all applications)	
Stage 3 Ranking Score (100)	69.46

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$1,223,000	$1,223,000
REF Grant Funds	$1,223,000	$1,223,000
Matching Funds	$168,322	$168,322

Cost of Electricity	$0.25/kWh
Price of Fuel	$4.31/Gal
Household Energy Cost	$6,864

AEA Review Comments & Recommendation **Full Funding**

Election District: 36-R

Renewable Energy Fund: Round 17 Application Summaries

NJUS Solar Nome Banner Ridge Solar Farm

App #17013 **Standard Application**

Project Type: Solar
Applicant: Nome Joint Utility System
Applicant Type: Utility
Energy Region: Bering Straits
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

Nome Joint Utility Service (NJUS) proposes construction of a 1 MW capacity solar PV farm on the south slope of Banner Ridge near its existing wind farm of two EWT wind turbines. Solar power, combined with the 2 MWh/2 MW battery energy storage system (BESS) project (awarded to NJUS in REF Round 14) will supply Nome with renewable energy during the summer months when winds are light. Given lower load demand during summer, this will enable NJUS to operate its lower capacity/lower minimum load Caterpillar generators in its old powerplant instead of the highcapacity/high minimum load Wartsila generators in the new plant. NJUS envisions eventual growth of solar capacity to perhaps 5 MW to serve anticipated load growth from new mining and national security infrastructure.

DNR/DMLW Feasibility Comments

Northwest Area Plan but not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The geologic maps and report https://doi.org/10.14509/1665 may have some useful information about the general geology. This region is in the zone of discontinuous permafrost, meaning that 50-90 percent of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008). Radon concentrations are modeled to be low to moderate, averaging below detection to 4 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

NJUS Solar Nome Banner Ridge Solar Farm

App #17013 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	20.61
2. Matching Resources (15)	9.00
3. Stage 2 Feasibility (25)	15.29
4. Project Readiness (5)	4.50
5. Benefits (10)	1.58
6. Local Support (5)	1.00
7. Sustainability (10)	8.00
Total Stage 3 Score (100)	59.99

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	61.17
Benefit/Cost Ratio	0.57

Project Rank	
Statewide (of 16 Standard applications)	13
Regional (of all applications)	
Stage 3 Ranking Score (100)	59.99

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$4,050,000	$4,050,000
REF Grant Funds	$4,000,000	$4,000,000
Matching Funds	$50,000	$50,000

Cost of Electricity	$0.36/kWh
Price of Fuel	$6.85/Gal
Household Energy Cost	$9,139

AEA Review Comments & Recommendation

Full Funding

Election District: 39-T

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Naknek Solar PV on Cape Suwarof

App #17014 **Standard Application**

Project Type: Solar
Applicant: Naknek Electric Association, Inc.
Applicant Type: Utility
Energy Region: Bristol Bay
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

Naknek Electric Association (NEA) proposes the construction of a 1 MW capacity solar PV system on Bristol Bay Borough property at Cape Suwarof. This will expand NEA's existing 80 kW solar system on the Cape which has been operational for several years. Solar power, combined with the 1.5 MWh/1.5 MW battery energy storage system (BESS) project awarded to NEA in REF Round 15, will supply the Naknek Service Area (Naknek, South Naknek, and King Salmon) with renewable energy during the high electric demand summer months when fish processing activities dramatically increase load demand. NEA envisions eventual growth of solar system capacity to perhaps 4 or 5 MW, plus 2 to 3 MW of wind power, to serve fish processing needs and Naknek's approximately 2 MW base load.

DNR/DMLW Feasibility Comments

Bristol Bay Area Plan - but not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The geologic maps and report https://dggs.alaska.gov/pubs/id/12155 may have some useful information just east of the study area. General area is subject to flooding and erosion, volcanic ash accumulation, and earthquake hazards (https://www.ncei.noaa.gov/maps/hazards). The region is in the zone of isolated permafrost (dominantly lake thermokart terrain), meaning that >0-10 percent of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low to moderate, averaging below detection to 4 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Naknek Solar PV on Cape Suwarof

App #17014 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	21.54
2. Matching Resources (15)	16.50
3. Stage 2 Feasibility (25)	17.17
4. Project Readiness (5)	5.00
5. Benefits (10)	1.50
6. Local Support (5)	2.50
7. Sustainability (10)	9.33
Total Stage 3 Score (100)	73.54

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	68.67
Benefit/Cost Ratio	0.57
Project Rank	
Statewide (of 16 Standard applications)	2
Regional (of all applications)	
Stage 3 Ranking Score (100)	73.54

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$4,110,000	$4,110,000
REF Grant Funds	$3,210,000	$3,137,848
Matching Funds	$900,000	$900,000

Cost of Electricity	$0.58/kWh
Price of Fuel	$4.78/Gal
Household Energy Cost	$9,551

AEA Review Comments & Recommendation

Partial Funding

Partial Funding adjustment is owing to exclusion of funding for final design cost of $71,152 which is currently ongoing and already funded. Only costs incurred after July 1, 2024, and which are within the scope of the grant agreement are eligible for funding under the REF program.

Revised funding recommendation: $3,137,848

Election District: 37-S

Renewable Energy Fund: Round 17 Application Summaries

Southeast Alaska Grid Resiliency (SEAGR)

App #17015 **Standard Application**

Project Type: Hydro
Applicant: Southeast Alaska Power Agency (SEAPA)
Applicant Type: Government Entity
Energy Region: Southeast
Proposed Phase(s): Design, Construction
Recommended Phase(s): Design, Construction

Project Description

The SEAPA Southeast Alaska Grid Resiliency Project (SEAGR) will increase generating capacity at the Tyee Lake hydroelectric facility and increase resiliency of the SEAPA electrical grid for: Metlakatla and potentially Kake electrical interconnections; Petersburg, Wrangell, and Ketchikan beneficial electrification (load growth); Voltage and Frequency stabilization due to grid expansion and load increases; Reliability with additional spinning reserves, increased inertia, and voltage support; Resiliency during extreme weather conditions. The project would include installation of a third turbine and generator at Tyee. The third “unit” would have synchronous condensing capabilities, allowing it to be synchronized to the electric grid providing voltage support and frequency security through additional spinning inertia. Peak generation capabilities would increase 25% on the SEAPA system. Voltage support would increase while the third generator is operated in synchronous condensing mode, allowing for efficiency gains on existing units due to power factor corrections. Ancillary systems would be installed to support the third turbine to include 480V and 15kV switchgear upgrades/modifications.

DNR/DMLW Feasibility Comments

Central/Southern Southeast Area Plan, Unit W-21. Designated General Use.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The report and maps https://dggs.alaska.gov/pubs/id/2970 may have some useful information about the general geology. General area is subject to snow avalanche and landslide hazards. Radon concentrations are modeled to be moderate to high averaging 2 to >4 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

Southeast Alaska Grid Resiliency (SEAGR)

App #17015 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	15.18
2. Matching Resources (15)	21.00
3. Stage 2 Feasibility (25)	15.58
4. Project Readiness (5)	4.50
5. Benefits (10)	1.67
6. Local Support (5)	1.00
7. Sustainability (10)	9.00
Total Stage 3 Score (100)	67.93

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	62.33
Benefit/Cost Ratio	0.00

Project Rank	
Statewide (of 16 Standard applications)	9
Regional (of all applications)	
Stage 3 Ranking Score (100)	67.93

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$22,592,510	$22,592,510
REF Grant Funds	$4,000,000	$4,000,000
Matching Funds	$18,592,510	$18,592,510

Cost of Electricity	$0.13/kWh
Price of Fuel	$4.79/Gal
Household Energy Cost	$6,730

AEA Review Comments & Recommendation **Full Funding**

Election District: 1-A, 2-A

Renewable Energy Fund: Round 17 Application Summaries

Knutson Creek Hydro Project Construction

App #17016 **Standard Application**

Project Type: Hydro
Applicant: Pedro Bay Village Council
Applicant Type: Utility
Energy Region: Bristol Bay
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

The proposed project is an approximately 150 kW run-of-river hydroelectric project on Knutson Creek near Pedro Bay. The hydro project will provide nearly all (~98%) of the electricity needs of the village, as well as providing a significant amount of interruptible energy to heat the tribal council building and other community buildings in the village.

DNR/DMLW Feasibility Comments

Bristol Bay Area Plan - not on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The report and maps https://dggs.alaska.gov/pubs/id/3681 and https://dggs.alaska.gov/pubs/id/2949 may have some useful information about the general geology. General area is subject to earthquake hazards, volcanic ash accumulation, and potential flooding from disturbances to Iliamna Lake. This region is in the zone of sporadic permafrost, meaning that 10-50 percent of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008). Radon concentrations are modeled to be moderate, averaging 2-4 pCi/L.

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Knutson Creek Hydro Project Construction

App #17016 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	21.18
2. Matching Resources (15)	21.00
3. Stage 2 Feasibility (25)	11.88
4. Project Readiness (5)	2.67
5. Benefits (10)	0.50
6. Local Support (5)	1.00
7. Sustainability (10)	6.33
Total Stage 3 Score (100)	64.56

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	47.50
Benefit/Cost Ratio	0.08
Project Rank	
Statewide (of 16 Standard applications)	11
Regional (of all applications)	
Stage 3 Ranking Score (100)	64.56

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$8,551,470	$8,551,470
REF Grant Funds	$400,000	$400,000
Matching Funds	$7,200,000	$7,200,000

Cost of Electricity	$0.82/kWh
Price of Fuel	$5.29/Gal
Household Energy Cost	$9,390

AEA Review Comments & Recommendation

Full Funding with Special Provision

Special Provisions:-Subsurface geotech needs to be conducted first prior to issuance to grants to confirm site viability. -Fish water rights and habitat permit still pending review. Need permit secured prior to issuance of REF grant. -Ensure DOE grants is awarded prior to issuance of grant funds. If Federal Grant is not awarded, REF grant is to be released and be eligible for reallocation to other projects. DOE Grants must be secured by June 30, 2025, with a tentative construction schedule for 2026. If DOE Grants not secured by June 30, 2025, REF funds will automatically be released back to REF Funds effective July 1, 2025 for reallocation to other viable REF Projects.-REF grant funds not to be expended prior but concurrent with federal grant funds.-Site Control needs to be secured with confirmed documents verified by AEA before moving forward with issuing grants to the grantee. Evidence of sufficient site securement to the satisfaction of AEA necessary prior to issuance of grant funds.-Grantee must provide contingency plan for construction overruns. If costs go above budget, grantee must provide own funds or arrange for additional financing to finish on time.

Election District: 37-S

Renewable Energy Fund: Round 17 Application Summaries

ALASKA ENERGY AUTHORITY

Kongiganak 100 kW Solar Energy Project

App #17017 **Standard Application**

Project Type: Solar
Applicant: Puvurnaq Power Company
Applicant Type:
Energy Region: Lower Yukon-Kuskokwim
Proposed Phase(s): Design, Construction
Recommended Phase(s): Design, Construction

Project Description

The project proposes to install, integrate, and commission a 100-kW solar/PV array energy for the islanded hybrid wind-diesel-battery-heat system for the tribally owned community utility in Kongiganak (Kong), Puvurnaq Power Company (PPC). Kong is designated as a High Energy Cost Area with a residential retail electric rate of $0.67 per kWh. Our utility was recently awarded a grant through the Department of Energy Office of Indian Energy (Award No. DE-IE0000161) in the amount of $674,330 for the installation of 100 kW solar PV. We now seek to leverage that funding as match toward the current proposal, which will allow us to add a total of 200 kW to our islanded system while gaining cost efficiencies through the combining of these two projects. Other benefits to be gained by adding to our solar array include:- Increased system reliability- Reduced diesel maintenance and operations cost due to increased hours of diesel off operations- Improved community resilience through additional source of energy- A total displacement of 54,082 gallons of diesel (@ $4.01/gallon = $216,868) annually, as well as900 hours of diesel off operations (@ $9.25/hour = $8,325), resulting in an estimated total annualreduction in operating costs for the utility in excess of $225,193, even before accounting forreduced O&M costs as a result of reduced wear on our diesel generators.- Reduced fuel purchases, resulting in a deferral of investments in bulk fuel storage capacity as well as a reduction in harmful greenhouse gas emissions- Support for local workforce, both during the period of construction and long-term, through ongoing cost savings to our tribal utility- Advancement of knowledge and understanding of integration and operation of diesel-renewable hybrid systems in the region

DNR/DMLW Feasibility Comments

Not in an area plan or on state land, but near OSL surf/subsurf.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The map and report https://dggs.alaska.gov/pubs/id/26722 may have some useful information about general geology, Coastal area is subject to erosion and flooding. This region is in the zone of sporadic to isolated permafrost (lake and wetland thermokart terrain), meaning that ~10-50 percent or less of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low.

Renewable Energy Fund: Round 17 Application Summaries

Kongiganak 100 kW Solar Energy Project

App #17017 **Standard Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	21.26
2. Matching Resources (15)	21.00
3. Stage 2 Feasibility (25)	13.67
4. Project Readiness (5)	3.67
5. Benefits (10)	1.00
6. Local Support (5)	0.00
7. Sustainability (10)	8.67
Total Stage 3 Score (100)	69.26

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	54.67
Benefit/Cost Ratio	0.60

Project Rank	
Statewide (of 16 Standard applications)	6
Regional (of all applications)	
Stage 3 Ranking Score (100)	69.26

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$1,402,933	$1,402,933
REF Grant Funds	$728,603	$720,453
Matching Funds	$674,330	$674,330

Cost of Electricity	$0.67/kWh
Price of Fuel	$6.33/Gal
Household Energy Cost	$9,427

AEA Review Comments & Recommendation

Partial Funding

Partial Funding:

Costs the applicant's administration of the REF grant are not eligible uses of REF funds. The line item for "AEA Grant and NTP" for $8,150 is therefore removed from the funding recommendation, yielding a revised funding recommendation of $720,453.

Election District: 38-S

Renewable Energy Fund: Round 17 Application Summaries

Atmautluak ETS Installation, Integration and Commissioning

App #17018 **Heat Application**

Project Type: Wind, Other
Applicant: Atmautluak Tribal Utilities
Applicant Type: Utility
Energy Region: Lower Yukon-Kuskokwim
Proposed Phase(s): Construction
Recommended Phase(s): Construction

Project Description

ATU is requesting funds to install, integrate and commission 30 ETS units, which will be in 30 low income and elders' homes. On-going support will be provided by ATU. Cost increases have created the need for ATU to request $286,227 from the AEA-REF to complete our hybrid project, which requires installing, integrating, and commissioning each of the 30 ETS units, into 30 homes. This will allow us to increase our wind-to-heat storage and reduce the cost of diesel fuel to 30 families by about 50%, from the heat provided by the ETS units. The ETS technology has been proven in nearby communities and can be expected to reliably produce and deliver storage and heat and substantially reduce diesel fuel use and costs to each of these 30 households. We are currently paying $6.54 per gallon and anticipate another $1.00 increase during 2023. For each ETS unit, we estimate each taking 2-4 days to install and integrate. This requires an electrician to be on-site for those days. In addition, the distribution lines need to be upgraded to these homes requiring other certified expertise. Local labor from ATU will also be provided.

DNR/DMLW Feasibility Comments

Not in an area plan or on state land.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The map and report https://dggs.alaska.gov/pubs/id/26722 may have some useful information about general geology,General area is subject to erosion and flooding. This region is in the zone of sporadic permafrost (lake and wetland thermokart terrain), meaning that 10-50 percent of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low.

Renewable Energy Fund: Round 17 Application Summaries

Atmautluak ETS Installation, Integration and Commissioning

App #17018 **Heat Application**

Stage 3 Scoring Summary

Criterion (Max Score)	Score
1. Cost of Energy (30)	19.26
2. Matching Resources (15)	21.00
3. Stage 2 Feasibility (25)	14.21
4. Project Readiness (5)	5.00
5. Benefits (10)	0.50
6. Local Support (5)	1.50
7. Sustainability (10)	6.67
Total Stage 3 Score (100)	68.13

Feasibility Analysis	
Stage 2 Tech & Econ Score (100)	56.83
Benefit/Cost Ratio	0.29

Project Rank	
Statewide (of 2 Heat applications)	2
Regional (of all applications)	
Stage 3 Ranking Score (100)	68.13

Funding & Cost	Requested	Recommended
Total Cost Through Construction	$474,387	$474,387
REF Grant Funds	$286,227	$286,227
Matching Funds	$188,160	$188,160

Cost of Electricity	$0.66/kWh
Price of Fuel	$5.36/Gal
Household Energy Cost	$8,538

AEA Review Comments & Recommendation

Full Funding

Election District: 38-S

ALASKA ENERGY AUTHORITY

January 30, 2025

Senator Elvi Gray-Jackson
Chair, Legislative Budget and Audit Committee, Alaska State Legislature
Alaska State Capitol Room 30
Juneau, Alaska 99801

Commissioner Julie Sande
Alaska State Bond Committee
Department of Commerce, Community, and Economic Development
P.O. Box 110400
Juneau, Alaska 99811-0400

Subject: Estimate and Statement of Withdrawals from Capital Reserve Funds

Dear Senator Gray-Jackson and Commissioner Sande:

AS 44.83.110(h) requires that the Alaska Energy Authority shall annually prepare a revised estimate of the need to withdraw money from the capital reserve funds of the Authority and a statement of all withdrawals that have occurred from the date of issuance of the bonds to the end of the preceding calendar year.

The Alaska Energy Authority currently maintains capital reserve funds subject to the reporting requirements of AS 44.83.110(h) with respect to the following bonds for the Bradley Lake Hydroelectric project:

- $40,000,000 Alaska Energy Authority Power Revenue Bonds, Seventh Series (Battle Creek Diversion Project)

- $1,239,000 Alaska Energy Authority Power Revenue Bonds, Eighth Series (Battle Creek Diversion Project)

- $17,000,000 Alaska Energy Authority Power Revenue Bonds, Tenth Series (Transmission Line Projects – SSQ Line)

- $166,013,134 Alaska Energy Authority Power Revenue Bonds, Eleventh Series (Bradley Lake Required Project Work)

The original estimate of an amount of funds to be withdrawn from the capital reserve fund during the term of the bond issues was zero. There has been no change in the Authority's original estimate. In order to maintain the capital reserve fund at the appropriate level, the bond documents provide for the withdrawal of investment earnings from the fund to be

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used as specified in the bond documents. The bond documents also define the capital reserve fund requirement, which decreases under certain circumstances, including a reduction in debt service arising from a refunding. Except for investment earnings and reductions related to changes in the capital reserve fund requirement, no withdrawals from the capital reserve fund have occurred from the dates of issuance of the bonds through December 31, 2024.

Sincerely,

Curtis W. Thayer
Executive Director

ALASKA ENERGY AUTHORITY

January 31, 2025

The Honorable Gary Stevens
Senate President
Alaska State Legislature
State Capitol Room 111
Juneau, Alaska 99801

The Honorable Bryce Edgmon
Speaker of the House
Alaska State Legislature
State Capitol Room 208
Juneau, Alaska 99801

Re: Alaska Energy Authority annual capital project status report

Dear Senate President Stevens and Speaker Edgmon,

As required by AS 44.83.950(b), the project status reports for the following Alaska Energy Authority capital projects are attached:

- Bradley Lake Hydroelectric Project
  - Original Bradley Lake Hydroelectric Project
  - West Fork Upper Battle Creek
  - Sterling to Quartz Transmission (SSQ)
  - Dixon Diversion Project
- Alaska Intertie Project

As required by AS 44.83.085, a Susitna-Watana Hydro project status report is available on the Alaska Energy Authority website and an electronic copy was submitted to you January 21, 2025, the 1st day of legislative session.

If you have any questions, please call me at (907) 771-3009.

Regards,

Curtis Thayer
Executive Director

CC: Lacey Sanders, Director OMB
Jordan Shilling, Legislative Director

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ALASKA ENERGY AUTHORITY
ANNUAL CAPITAL PROJECT STATUS REPORT
January 30, 2025

PROJECT: Bradley Lake Hydroelectric Project

PROJECT LOCATION: Homer, Alaska

ORIGINAL ESTIMATED PROJECT COSTS[1]:	$ 355,900,000
ORIGINAL ESTIMATED COSTS OF BATTLE CREEK DIVERSION IMPROVEMENT[2]:	47,200,000
ORIGINAL ESTIMATED COSTS OF SSQ LINE ACQUISITION[3]:	16,508,569
ORIGINAL ESTIMATED COSTS OF BRADLEY LAKE REQUIRED PROJECT WORK[4]:	165,855,884
	$ 585,464,453
CURRENT ESTIMATED PROJECT COSTS:	
Construction Expenditures-Original Construction	$ 316,902,894
Construction Expenditures-Battle Creek Diversion	46,422,179
Construction & Acquisition Cost – SSQ Transmission Line	16,508,569
Construction Expenditures-Bradley Lake Required Project Work	165,850,384
Construction Expenditures-Dixon Diversion	9,673,800
Total Construction & Acquisition Costs	$ 555,357,826
Financing Costs-Original Construction	11,316,424
Financing Costs-Battle Creek Diversion Improvement	173,045
Financing Costs –SSQ 115-Kv Transmission Line	491,431
Financing Costs-Bradley Lake Required Project Work	162,750
Total Financing Costs	12,143,650
Total Estimated Project Costs	$ 567,501,476

SOURCE OF FUNDS:

Appropriated Funds:	SLA1979 CH 80	$ 80,000
	SLA1981 CH 92	$ 5,000,000
	SLA1981 CH 92	$ 10,000,000
	SLA1982 CH 141	$ 3,000,000
	SLA1984 CH 171	$ 50,000,000
	SLA1985 CH 96	$ 50,000,000

1 Excludes project financing costs. Also excludes major maintenance and repair costs and preconstruction costs associated with Battle Creek diversion. Excludes costs associated with the SSQ Line acquisition and remediation. Excludes costs associated with Bradley Lake Required Project Work.

2 Excludes project financing costs. Battle Creek diversion construction costs are included in this estimate.

3 Excludes project financing costs. SSQ Line acquisition and remediation costs are included in this estimate.

4 Excludes project financing costs. Bradley Lake Require Project Work costs are included in this estimate.

SLA1986	CH 41	$(50,000,000)	
SLA1986	CH 41	$ 50,000,000	
SLA1986	CH 128	$ 50,000,000	
SLA1987	CH 96	$(50,000,000)	
SLA1987	CH 96	$ 50,000,000	
SLA1988	CH 172	$ 7,000,000	
SLA1993	CH 19	$(12,082,500)	
SLA2022	CH 11	$ 1,000,000	
SLA2023	CH 1	$ 5,000,000	
SLA2024	CH 1	$ 1,379,700	
SLA2024	CH 1	$ 2,294,100	$172,671,300

Other:	Power Revenue Bonds, includes interest earnings	$ 165,221,818
	Battle Creek Diversion Power Revenue Bonds, includes interest earnings	$ 42,105,633
	Participating Utility Cash Contributions	$ 4,489,591
	SSQ 115-kV Transmission Line Bonds	$ 17,000,000
	Bradley Lake Required Project Work Bonds	$ 166,013,134
Total Source of Funds:		$ 567,501,476

PROJECT DESCRIPTION:

Bradley Lake is a hydroelectric project located near Homer, Alaska with an installed capacity of 120 megawatts. Construction of the Bradley Lake Project was substantially completed in 1991, with the date of commercial operation declared to be September 1, 1991. The Battle Creek Diversion Project and the Sterling Substation to Quartz Creek Substation (SSQ) transmission line were added in 2020. The project continues to provide electric power to the Railbelt utilities from the Kenai Peninsula to Fairbanks. The project is operated and maintained by Homer Electric Association.

PROJECT STATUS REPORT AT 12/31/24:

The Bradley Lake Project Management Committee ("BPMC") has responsibility to operate and maintain the Bradley Lake hydroelectric project. The BPMC was established pursuant to Section 13 of the Agreement for the Sale and Purchase of Electric Power ("Power Sales Agreement") dated December 8, 1987. The members of the BPMC include the Alaska Energy Authority ("AEA") and the five purchasers under the Power Sales Agreement - Chugach Electric Association, Inc ("CEA").; Golden Valley Electric Association, Inc. ("GVEA"); the City of Seward ("Seward Electric System"); Alaska Electric and Energy Cooperative, Inc. ("AE&EC"); and Matanuska Electric Association, Inc. ("MEA"). Originally, the Alaska Electric Generation & Transmission Cooperative, Inc. ("AEG&T") was a purchaser under the Power Sales Agreement for the benefit of Homer Electric Association ("HEA"), and MEA. AEG&T assigned its rights under the Power Sales Agreement pertaining to MEA to MEA in 2015, and its rights pertaining to HEA to AE&EC in 2003. HEA is an additional party to the Power Sales Agreement, and is the entity represented on the BPMC while AE&EC has no direct

vote as a consequence of the individual representation of HEA. Originally, the Municipality of Anchorage's Municipal Light & Power ("ML&P") was a purchaser under the Power Sales Agreement. CEA acquired ML&P on October 30, 2020, and its rights under the Power Sales Agreement.

Originally, the Project encompassed 5,498 acres of federal lands. All of these lands were conveyed to the State of Alaska, pursuant to the Alaska Statehood Act, through five separate Tentative Approvals (TAs) and a Patent from the United States that became effective Spring 2018. AEA is no longer required to pay annual charges for the use and occupancy of lands that were owned by the United States.

Bradley Lake hydroelectric project generation for the year was 404,000 megawatt hours (MWh). The 2024 generation was slightly higher than the long term annual mean generation of 390,000 MWh. The project's ongoing maintenance and repairs are funded by the purchasers and not by state appropriation.

2024 was the fourth full year in operation for the new West Fork Upper Battle Creek Diversion project ("Battle Creek"). The project was completed in 2020 and was expected to increase the Bradley Lake Hydropower Project's annual energy generation by approximately 37,000 MWh. In 2024 the energy equivalent of the Battle Creek water was 38,200 MWh which was about the long-term average. All five of the Railbelt utilities are participating in the cost & energy from this project.

Preconstruction activities for the Battle Creek diversion project were partially funded by a $3 million allocation of an ARCTEC Energy Project appropriation (FSSLA11 CH 5). Additional funding sources include a $500,000 Renewable Energy Grant, a $500,000 contribution by the participating utilities to match the Renewable Energy Grant, and an additional $1.2 million contribution by the participating utilities.

In December 2017, the Authority issued, as a private placement, $47 million of Power Revenue Bonds for the long-term financing of the construction costs of the Battle Creek Diversion Project. The Power Revenue Bonds consist of $40 million New Clean Renewable Energy Bonds ("NCREB"); $1.2 million Qualified Energy Conservation Bonds ("QECB"); and $5.8 million Taxable Draw-Down Bonds. The tax subsidies associated with the NCREB and QECBs significantly reduce the net interest costs of financing the WFUBC construction project. The draw period on the $5.8 million Alaska Energy Authority Power Revenue, Ninth Series Taxable Draw-Down Bonds expired in December 2020 with no draws made on this Series. The participating utilities provide cash contributions of $4.5 million.

In December 2020, the Authority issued, as a private placement, $17 million of Power Revenue Bonds for the long-term financing of the acquisition costs of the Sterling to Quartz Creek Substation ("SSQ Line"). The line was purchased from HEA for $13.3 million. Additional costs include remediation of the 69kV line, Inspection/Repair outside of the Fire Zone, Right of Way ("ROW") transfer and upgrade costs, funding of the Capital Reserve account, and bond issuance

closing costs.

The purchased Sterling Substation to Quartz Creek Substation ("SSQ Line"), and certain related rights, rights of way, and permits as part of the Bradley Lake Project was in its fourth full year of operation. The SSQ Line is approximately 39.3 miles of 115 kV and 69 kV transmission line. The transmission line delivers Bradley Lake hydroelectric generated power from HEA's grid to transmission lines linked to all the other Railbelt utilities. In the summer of 2019, the SSQ Line was out-of-service for an extended time after receiving damage during the Swan Lake Fire. It took four months to bring the line back into service costing an estimated $12 million to Railbelt Utility ratepayers. The out-of-use 69kV transmission line was removed in 2023. The addition of the SSQ Line to the Bradley Lake Project is a benefit to Alaska ratepayers through better cost alignment, increased reliability, and future prospects for upgrades to the line, decreasing line losses and allowing increased transmission north of Bradley Lake Power.

In December 2022, AEA and the Railbelt utilities closed on $166 million in bond financing to improve the efficiency and deliverable capacity of power from the Bradley Lake Hydroelectric Project. The bond proceeds will be used solely to pay for transmission line upgrades and battery energy storage systems that will reduce the constraints on the Railbelt grid by improving the Kenai Peninsula's transmission capacity to export power from Bradley Lake, while also allowing for the integration of additional renewable energy generation. Funding for the projects is coming from payments by the five Railbelt utilities above those required to retire Bradley Lake project bonds and will come at no additional cost to ratepayers or added burden on the State treasury. These projects include:

- Upgrade transmission line between Bradley Lake and Soldotna Substation
- Upgrade transmission line between Soldotna Substation and Sterling Substation
- Upgrade transmission line between Sterling Substation and Quartz Creek Substation
- Battery Energy Storage Systems for Grid Stabilization

AEA and utilities are designing the transmission line upgrade from 115 kV to 230 kV between Soldotna Substation and Sterling Substation and the Sterling Substation to Quartz Substation. Construction for the first section between Sterling Substation and Quartz Substation has been bid and will occur in early 2025. Construction on follow-on sections will occur through 2028. The estimated construction cost is $92 million.

AEA is purchasing from the utilities capacity on their Battery Energy Storage Systems (BESS) to stabilize the grid from Bradley Lake power plant oscillations for $28 million. Two BESS's (Soldotna and Anchorage) have been constructed and are in operation. Capacity purchase agreements are expected to be finalized in early 2025.

During 2024, feasibility studies continued for the prospective Dixon Diversion Project. Year one of two environmental studies were performed for licensing. Engineering geophysical work along the tunnel alignment and conceptual facility drawings were designed. Annual energy was verified and required facilities were optimized to reduce estimated total project cost. State capital funds will be used to advance studies in 2025.

ALASKA ENERGY AUTHORITY
Annual CAPITAL PROJECT STATUS REPORT
January 30, 2025

PROJECT: Alaska Intertie Project

PROJECT LOCATION: Willow to Healy, Alaska

CURRENT ESTIMATED PROJECT COSTS:	
Construction Expenditures-Original Construction	$124,245,687
Construction Expenditures-Upgrades/Improvements through 12/31/24	$ 16,182,455
Projection to Complete Upgrades/Improvements:	8,117,545
Total Estimated Project Costs	$148,545,687

SOURCE OF FUNDS:
Appropriated Funds:

Original Construction	SLA1980	CH 50	$ 3,000,000
	SLA1981	CH 92	$ 36,000,000
	SLA1981	CH 92	$ 40,000,000
	SLA1983	CH107	$ 25,000,000
	SLA1984	CH171	$ 18,600,000
	SLA1987	CH127	$ 5,896,400
	FY87 Administrative Lapse		$ (33,281)
Source of Funds-Original Construction			$128,463,119
Improvements/Upgrades	SLA2002	CH 1	$ 20,300,000
	SLA2008	CH 29	$ (10,000,000)
	SLA2008	CH 29	$ 10,000,000
	SLA2011	CH 5	$ 5,000,000
	SLA2012	CH 5	$ (9,160,564)
	SLA2012	CH 5	$ 8,160,564
	SLA2024	CH 1	$ (1,379,700)
	SLA2024	CH 1	$ (2,294,100)
Source of Funds-Upgrades/Improvements			$ 20,626,200
Total Source of Funds:			$149,089,319

PROJECT DESCRIPTION:

The Alaska Intertie ("AKI") transmission line is a 170-mile long, 345 kilovolt (kV) transmission line between Willow and Healy. It is owned by the Alaska Energy Authority ("AEA") and operated at 138kV. The AKI was built in the mid-1980's with State of Alaska appropriations of approximately $124 million. The AKI is one of a number of transmission segments that, when connected together, move power throughout the Railbelt Grid from Delta through Fairbanks to Anchorage down to the southernmost limit at Nanwalek. The project includes transmission towers, conductors, the Cantwell substation, transformers at the Healy and Teeland substations (Knik Road), and Railbelt system stability devices (Static VAR Compensators) at three locations that are necessary to allow the utilities to remain interconnected and for power to flow between utilities. The project is owned outright by AEA and carries no debt.

PROJECT STATUS AT 12/31/24:

The AKI continues normal operations carrying Bradley Lake and economy power north into the Golden Valley Electric Association ("GVEA") system. The economy power is generated by Chugach Electric Association ("CEA"), Homer Electric Association ("HEA"), and Matanuska Electric Association ("MEA"). Although power generally flows north, the line is available for GVEA to transfer energy south if an emergency situation finds the Cook Inlet region short of electric power.

AEA has signed a service agreement with GE Solutions LLC for maintenance, repair, training, parts, and telephonic support of the Static VAR Compensators, which were installed in 2015. This service agreement ensures this critical infrastructure can be reliably and economically maintained.

The Second Amended and Restated Alaska Intertie Agreement ("ARAIA") was signed by AEA and the Railbelt utility participants (participants) in March 2014. The participants include GVEA, CEA, and MEA. Originally, the Municipality of Anchorage's Municipal Light & Power ("ML&P") was a purchaser under the ARAIA. CEA acquired ML&P on October 30, 2020, and its rights under the ARAIA. The participants and AEA each have a seat on the Intertie Management Committee ("IMC"). The IMC has a responsibility to operate and maintain the AKI. The IMC adopted bylaws to govern their operation and retained contracts and operating procedures to maintain an easy transition to the amended agreement. The longstanding Intertie Operating Committee ("IOC") continues to recommend operating policies, procedures, and standard practices to the IMC for consideration.

AEA is working through the IMC to upgrade the communications from Anchorage to Healy. Prior to this project, communications were accomplished through microwave equipment shared with the Alaska Department of Public Safety. Once completed in 2025, Intertie communication will be accomplished through a dedicated microwave system.

The IMC applied for and was awarded over $11 million dollars in funding from the Infrastructure Investment and Jobs Act (IIJA) through AEA. These funds will be used to reinforce the Intertie against snow loading in areas where snow loading has historically required in person inspection to maintain safety standards. Funding is also being used to improve data collection throughout the

Railbelt with an interconnected Synchrophasor system.

Additional Background:

Agreements were developed over a span of 30 years to govern the cooperative management and operation of the connected network at large. AEA has agreements with participating utilities to ensure the AKI operates with prudent maintenance and operation by utilities. CEA is the southern region operator and GVEA is the northern region operator. MEA provides maintenance of the AKI in the southern region. GVEA provides maintenance in the northern region.