

Renewable Energy Fund: Round 16 Application Summaries



Homer Energy Recovery Project

App #16001

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 16 Application Summaries



Homer Energy Recovery Project

App #16001

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	16.06	Stage 2 Tech & Econ Score (100)	66.00
2. Matching Resources (15)	19.50	Benefit/Cost Ratio	0.01
3. Stage 2 Feasibility (25)	16.50		
4. Project Readiness (5)	4.33	Project Rank	
5. Benefits (10)	1.67	Statewide (of 27 Standard applications)	14
6. Local Support (5)	2.00	Regional (of all applications)	
7. Sustainability (10)	8.33	Stage 3 Ranking Score (100)	68.39
Total Stage 3 Score (100)	68.39		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$370,000	\$370,000	Cost of Electricity	\$0.24/kWh
REF Grant Funds	\$280,000	\$280,000	Price of Fuel	\$3.73/Gal
Matching Funds	\$90,000	\$90,000	Household Energy Cost	\$7,120

AEA Review Comments & Recommendation

Full Funding

Election District: 6-C

Renewable Energy Fund: Round 16 Application Summaries



North Pole CHP Conceptual Design Project

App #16002

Standard Application

Project Type: Other

Energy Region: Railbelt

Applicant: City of North Pole, Alaska

Proposed Phase(s): Feasibility

Applicant Type: Local Government

Recommended Phase(s): Feasibility

Project Description

The Conceptual Design project for funding under the AEA REF grant includes a 5% design study for the proposed Combined Heat and Power (CHP) Plant in the City of North Pole (CoNP). The 5% design study will include preliminary research to warrant the engineering and construction of a liquid natural gas (LNG) combined heat and power plant to increase capacity for electricity and district heating for a new housing development, including housing for military members from Eielson Air Force Base, and businesses within the city limits. The updates will amend the pilot study funded by DOE in 2022 (DE-FE0031601) to include updated costs on natural gas in the region, updated costs for equipment, and review and update the long-term capacity of the CHP plant and economic benefits to residents and businesses. Reconnaissance is necessary to apply for future funding and investments for the plant. As the CoNP is aware natural gas is not a renewable resource, the waste heat and carbon capture from the plant will result in close to net zero emissions and less overall emissions within the local air shed.

DNR/DMLW Feasibility Comments

NRO Conveyed to Williams Alaska Petroleum 2004, not state land. Eastern Tanana Area Plan -- not classified.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Location is within the Fairbanks 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). Known indoor radon values in the immediate area vary from below detection to 93.3 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



North Pole CHP Conceptual Design Project

App #16002

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis
1. Cost of Energy (30)		Stage 2 Tech & Econ Score (100) 28.83
2. Matching Resources (15)		Benefit/Cost Ratio 0.00
3. Stage 2 Feasibility (25)		
4. Project Readiness (5)		Project Rank
5. Benefits (10)		Statewide (of 27 Standard applications)
6. Local Support (5)		Regional (of all applications)
7. Sustainability (10)		Stage 3 Ranking Score (100)
Total Stage 3 Score (100)		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$40,000,000	\$40,000,000	Cost of Electricity	\$0.25/kWh
REF Grant Funds	\$150,000	\$0	Price of Fuel	\$4.09/Gal
Matching Funds	\$00	\$0	Household Energy Cost	\$8,420

AEA Review Comments & Recommendation

Did Not Pass Stage 2

Project did not achieve the required 40 points, as per Section 4 of the REF Round 16 RFA to advance onto stage 3. Per regulation 3 AAC 107.645 it is determined that the project is neither technically nor economically feasible, and will not advance onto Stage 3 for funding consideration. Project Concerns: •Evaluate updates from a previous study – sounds duplicative. Already determined to use two Wartsilla 20V34G generating 9MW/unit. Heat output can be determined from published data. Site has been located, fuel (LNG) has been determined. •Collect information on all types of successful renewable energy options in the borough. This is only one task but doesn't seem targeted to the final project. The scope of the study appears quite broad and undefined. •This is a 5% study but it appears as though the conclusion and recommendation has already been determined – “The project will also lead to the development and construction of a combined heat and power plant in the area that will employ local labor and will enhance energy sector labor through purchases of Alaskan-based LNG.” •Cost appears excessive relative to the benefit realized by the proposed 240 homes. Project Site Concerns: •The site is known to be contaminated with sulfolane, per- and polyfluoroalkyl substances, and petroleum constituents from the previous refinery. The application states that the site will be cleaned per ADEC requirements. The sulfolane groundwater plume is approximately 2 miles wide, 3.5 miles long and over 300 feet deep, and is continuing to migrate gradually northward. The PFAS plume appears to have a similar footprint, although the boundaries of the plume have not been fully evaluated. ADEC's requirements are not stated.

Election District: 33-Q

Renewable Energy Fund: Round 16 Application Summaries



Nuvista Kwethluk Wind and Battery Project Completion

App #16003

Standard Application

Project Type: Wind, Transmission, Storage

Energy Region: Lower Yukon-Kuskokwim

Applicant: Nuvista Light and Electric Cooperative
Incorporated

Proposed Phase(s): Construction

Applicant Type: IPP

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 16 Application Summaries



Nuvista Kwethluk Wind and Battery Project Completion

App #16003

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	17.75	Stage 2 Tech & Econ Score (100)	62.33
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	0.67
3. Stage 2 Feasibility (25)	15.58		
4. Project Readiness (5)	4.33	Project Rank	
5. Benefits (10)	1.00	Statewide (of 27 Standard applications)	9
6. Local Support (5)	2.00	Regional (of all applications)	
7. Sustainability (10)	9.33	Stage 3 Ranking Score (100)	71.00
Total Stage 3 Score (100)	71.00		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$	\$	Cost of Electricity	\$0.52/kWh
REF Grant Funds	\$738,979	\$738,979	Price of Fuel	\$5.56/Gal
Matching Funds	\$00	\$00	Household Energy Cost	\$7,869

AEA Review Comments & Recommendation

Full Funding with Special Provision

Election District: 38-S

Renewable Energy Fund: Round 16 Application Summaries



Sterling Solar Project

App #16004

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 16 Application Summaries



Sterling Solar Project

App #16004

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	16.06	Stage 2 Tech & Econ Score (100)	41.67
2. Matching Resources (15)	0.00	Benefit/Cost Ratio	0.70
3. Stage 2 Feasibility (25)	10.42		
4. Project Readiness (5)	1.50	Project Rank	
5. Benefits (10)	1.42	Statewide (of 27 Standard applications)	22
6. Local Support (5)	0.00	Regional (of all applications)	
7. Sustainability (10)	8.00	Stage 3 Ranking Score (100)	37.39
Total Stage 3 Score (100)	37.39		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$5,955,000	\$5,955,000	Cost of Electricity	\$0.24/kWh
REF Grant Funds	\$2,000,000	\$12,500	Price of Fuel	\$3.73/Gal
Matching Funds	\$2,000,000	\$12,500	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 16 Application Summaries



Kenai Peninsula Solar Farm

App #16005

Standard Application

Project Type: Solar

Energy Region: Railbelt

Applicant: Solstice Energy LLC

Proposed Phase(s): Design, Construction

Applicant Type: IPP

Recommended Phase(s): Design, Construction

Project Description

The Kenai Peninsula Solar farm is a 43 MW-DC, 30MW-AC utility scale solar facility. The project is sited on land that will be leased from the Alaska Mental Health Trust and will sell 100% of its energy output to Homer Electric Association (HEA). This will be the largest solar installation in Alaska and will meet 13% of HEA's energy demand. The project is strategic in nature as it will further diversify HEA's energy generation mix (currently ~86% natural gas, 14% hydro) and will nearly double the amount of renewable energy for HEA. The planned solar farm design uses a ground mounted, single-axis tracking design with bifacial solar panels to maximize solar production. This will be the first utility scale solar project to deploy single-axis tracking in Alaska. The project requires construction of a new substation to interconnect the solar generation facility to HEA's 115kV transmission lines which are located adjacent to the property.

DNR/DMLW Feasibility Comments

No DMLW-managed lands identified in project. On TLO 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 10.2 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



Kenai Peninsula Solar Farm

App #16005

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	16.06	Stage 2 Tech & Econ Score (100)	95.33
2. Matching Resources (15)	22.50	Benefit/Cost Ratio	1.77
3. Stage 2 Feasibility (25)	23.83		
4. Project Readiness (5)	4.33	Project Rank	
5. Benefits (10)	9.67	Statewide (of 27 Standard applications)	2
6. Local Support (5)	1.50	Regional (of all applications)	
7. Sustainability (10)	10.00	Stage 3 Ranking Score (100)	87.89
Total Stage 3 Score (100)	87.89		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$50,027,664	\$50,027,664	Cost of Electricity	\$0.24/kWh
REF Grant Funds	\$2,000,000	\$2,000,000	Price of Fuel	\$3.73/Gal
Matching Funds	\$48,027,664	\$48,027,664	Household Energy Cost	\$7,120

AEA Review Comments & Recommendation

Full Funding

Election District: various

Renewable Energy Fund: Round 16 Application Summaries



Chevak Battery Energy Storage System Project

App #16006

Standard Application

Project Type: Storage

Energy Region: Lower Yukon-Kuskokwim

Applicant: Alaska Village Electric Cooperative, Inc.

Proposed Phase(s): Construction

Applicant Type: Utility

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 16 Application Summaries



Chevak Battery Energy Storage System Project

App #16006

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	15.57	Stage 2 Tech & Econ Score (100)	69.17
2. Matching Resources (15)	16.50	Benefit/Cost Ratio	0.62
3. Stage 2 Feasibility (25)	17.29		
4. Project Readiness (5)	4.00	Project Rank	
5. Benefits (10)	2.08	Statewide (of 27 Standard applications)	16
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	8.00	Stage 3 Ranking Score (100)	65.94
Total Stage 3 Score (100)	65.94		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$	\$	Cost of Electricity	\$0.52/kWh
REF Grant Funds	\$968,644	\$968,644	Price of Fuel	\$4.64/Gal
Matching Funds	\$170,937	\$170,937	Household Energy Cost	\$6,902

AEA Review Comments & Recommendation

Full Funding

Election District: 38-S

Renewable Energy Fund: Round 16 Application Summaries



Quinhagak Battery Energy Storage System Project

App #16007

Standard Application

Project Type: Storage

Energy Region: Lower Yukon-Kuskokwim

Applicant: Alaska Village Electric Cooperative, Inc.

Proposed Phase(s): Construction

Applicant Type: Utility

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 16 Application Summaries



Quinhagak Battery Energy Storage System Project

App #16007

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	15.7	Stage 2 Tech & Econ Score (100)	68.67
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	0.88
3. Stage 2 Feasibility (25)	17.17		
4. Project Readiness (5)	4.00	Project Rank	
5. Benefits (10)	2.00	Statewide (of 27 Standard applications)	10
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	8.00	Stage 3 Ranking Score (100)	70.37
Total Stage 3 Score (100)	70.37		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$1,236,581	\$1,236,581	Cost of Electricity	\$0.50/kWh
REF Grant Funds	\$443,956	\$443,956	Price of Fuel	\$4.65/Gal
Matching Funds	\$707,625	\$707,625	Household Energy Cost	\$6,962

AEA Review Comments & Recommendation

Full Funding

Election District: 38-S

Renewable Energy Fund: Round 16 Application Summaries



Pelican Hydro Relicensing Project, Restoration, Repair

App #16008

Standard Application

Project Type: Hydro

Energy Region: Southeast

Applicant: City of Pelican, Pelican Utilities

Proposed Phase(s): Design, Construction

Applicant Type: Utility

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 16 Application Summaries



Pelican Hydro Relicensing Project, Restoration, Repair

App #16008

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	14.38	Stage 2 Tech & Econ Score (100)	96.17
2. Matching Resources (15)	10.50	Benefit/Cost Ratio	1.63
3. Stage 2 Feasibility (25)	24.04		
4. Project Readiness (5)	5.00	Project Rank	
5. Benefits (10)	9.67	Statewide (of 27 Standard applications)	6
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	10.00	Stage 3 Ranking Score (100)	76.09
Total Stage 3 Score (100)	76.09		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$00	\$	Cost of Electricity	\$0.26/kWh
REF Grant Funds	\$650,474	\$650,474	Price of Fuel	\$4.89/Gal
Matching Funds	\$50,000	\$50,000	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 16 Application Summaries



Railbelt Wind Diversification Alaska Renewables

App #16009

Standard Application

Project Type: Wind, Transmission, Storage

Energy Region: Railbelt

Applicant: Alaska Renewables LLC

Proposed Phase(s): Feasibility

Applicant Type: IPP

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 uncoded 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 16 Application Summaries



Railbelt Wind Diversification Alaska Renewables

App #16009

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	12.31	Stage 2 Tech & Econ Score (100)	70.54
2. Matching Resources (15)	19.50	Benefit/Cost Ratio	1.22
3. Stage 2 Feasibility (25)	17.64		
4. Project Readiness (5)	3.67	Project Rank	
5. Benefits (10)	5.92	Statewide (of 27 Standard applications)	13
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	7.33	Stage 3 Ranking Score (100)	68.86
Total Stage 3 Score (100)	68.86		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$	\$	Cost of Electricity	\$0.21/kWh
REF Grant Funds	\$2,000,000	\$2,000,000	Price of Fuel	\$2.47/Gal
Matching Funds	\$2,187,000	\$2,187,000	Household Energy Cost	\$5,458

AEA Review Comments & Recommendation

Full Funding

Election District:

Renewable Energy Fund: Round 16 Application Summaries



Chignik Hydroelectric Power System

App #16010

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
Page 19/58

01/25/2024

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

App #16010

Chignik Hydroelectric Power System

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	17.37	Stage 2 Tech & Econ Score (100)	57.50
2. Matching Resources (15)	10.50	Benefit/Cost Ratio	1.06
3. Stage 2 Feasibility (25)	14.38		
4. Project Readiness (5)	3.17	Project Rank	
5. Benefits (10)	3.00	Statewide (of 27 Standard applications)	21
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	6.00	Stage 3 Ranking Score (100)	56.91
Total Stage 3 Score (100)	56.91		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$7,228,206	\$7,228,206	Cost of Electricity	\$0.58/kWh
REF Grant Funds	\$883,012	\$883,012	Price of Fuel	\$5.03/Gal
Matching Funds	\$44,346	\$44,346	Household Energy Cost	\$7,701

AEA Review Comments & Recommendation

Full Funding

Renewable Energy Fund: Round 16 Application Summaries



Beric Alaska Energy Solar One

App #16011

Standard Application

Project Type: Solar, Storage

Energy Region: Railbelt

Applicant: Mark K. Johnson dba Beric Alaska Energy

Proposed Phase(s): Recon, Design

Applicant Type: IPP

Recommended Phase(s): Recon, Design

Project Description

Project consists, in phase I, of an approximately 200 Kw solar array on parcel of land adjacent to existing distribution infrastructure. Phase II would expand the project by an additional 200 Kw. Phase III would add a storage battery and related equipment to enhance dispatchability of produced energy. Throughout the project, emphasis would be placed on operational efficiency and scalability of combination solar/battery systems. This project is intended to demonstrate and perfect the use of and dispatchability of scalable solar/battery/energy storage in the Railbelt.

DNR/DMLW Feasibility Comments

Southeast Susitna 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. Geologic report and maps <https://dggs.alaska.gov/pubs/id/30100>. may have useful geologic information. General area is subject to volcanic ash accumulation and earthquake hazards: <https://www.ncei.noaa.gov/maps/hazards>. This region is in the zone of isolated permafrost, meaning that >0-10 percent of the ground surface is underlain by perennially frozen ground (permafrost) (Jorgenson and others, 2008). Radon concentrations are modeled to be high, averaging 4 pCi/L or greater.

Renewable Energy Fund: Round 16 Application Summaries



Beric Alaska Energy Solar One

App #16011

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis
1. Cost of Energy (30)		Stage 2 Tech & Econ Score (100) 2.50
2. Matching Resources (15)		Benefit/Cost Ratio 0.02
3. Stage 2 Feasibility (25)		
4. Project Readiness (5)		Project Rank
5. Benefits (10)		Statewide (of 27 Standard applications)
6. Local Support (5)		Regional (of all applications)
7. Sustainability (10)		Stage 3 Ranking Score (100)
Total Stage 3 Score (100)		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$4,000,000	\$4,000,000	Cost of Electricity	\$0.21/kWh
REF Grant Funds	\$52,500	\$0	Price of Fuel	\$2.47/Gal
Matching Funds	\$18,000	\$0	Household Energy Cost	\$5,458

AEA Review Comments & Recommendation

Did Not Pass Stage 2

Project did not achieve the required 40 points, as per Section 4 of the REF Round 16 RFA to advance onto stage 3. Per regulation 3 AAC 107.645 it is determined that the project is not technically nor economically feasible, and will not advance onto Stage 3 for funding consideration. Project Concerns: The application was materially incomplete in many areas, with many application questions left blank. Responses that were provided contained inadequate information and contained numerous spelling errors. Evidence of inadequate detail and substantial lack research into the scope of the project. It is unclear who would be managing and supporting the project. Cost justification simply mentions a conversation between the landowner and contractor but no formal justification is provided. Progress reporting is not sufficient with AEA terms, just states they will share information concerning the work that is completed by 3-15-2024. The grant will not be issued by this date. No mention of compliance with reporting requirements. Cost overrun – applicant notes only that “Overhead costs of applicant are de minimus [sic]”. The applicant does not provide information regarding the qualifications and experience of the engineering and construction contractors. No clear discussion on the project benefit. Scope of project is unclear: The application states that it is for a conceptual design, but phase one is placing a 200kw solar array next to a distribution line. Phase 2 is to expand the project, and phase 3 add a battery. Materially incomplete information in the majority of fields to support the project. Schedule and milestones include inadequate information. They intend to look into other federal opportunities to fund the \$1.6-2 million estimate for the three-phase project. No commentary as to how applicant would go about securing such funding. No organizational structure provided. Indeterminable as to who the contractor, engineer, or grantee are. Unclear as to how much energy the project would generate. Applicant seeks to install two 200kw solar arrays. No mention of fuel or natural gas displacement.

Election District: Various

Renewable Energy Fund: Round 16 Application Summaries



Hunter Creek Hydroelectric Feasibility Study Project

App #16012

Standard Application

Project Type: Hydro, Transmission, Storage

Energy Region: Railbelt

Applicant: Matanuska Electric Association

Proposed Phase(s): Feasibility

Applicant Type: Utility

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 Knik 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 16 Application Summaries



Hunter Creek Hydroelectric Feasibility Study Project

App #16012

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	13.35	Stage 2 Tech & Econ Score (100)	55.00
2. Matching Resources (15)	19.50	Benefit/Cost Ratio	0.67
3. Stage 2 Feasibility (25)	13.75		
4. Project Readiness (5)	3.50	Project Rank	
5. Benefits (10)	1.50	Statewide (of 27 Standard applications)	20
6. Local Support (5)	1.00	Regional (of all applications)	
7. Sustainability (10)	5.00	Stage 3 Ranking Score (100)	57.60
Total Stage 3 Score (100)	57.60		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$67,765,000	\$67,765,000	Cost of Electricity	\$0.20/kWh
REF Grant Funds	\$1,280,500	\$1,280,500	Price of Fuel	\$3.30/Gal
Matching Funds	\$384,500	\$384,500	Household Energy Cost	\$5,920

AEA Review Comments & Recommendation

Full Funding

Election District: Various

Renewable Energy Fund: Round 16 Application Summaries



Igiugig Tribal Utility Solar PV

App #16013

Standard Application

Project Type: Solar

Energy Region: Bristol Bay

Applicant: Igiugig Village Council

Proposed Phase(s): Design, Construction

Applicant Type: Government Entity

Recommended Phase(s): Design, Construction

Project Description

The Igiugig Tribal Solar PV project proposes to install a 200 KW solar photovoltaic (PV) field, minor transmission improvements and an electric boiler to capture excess generation for use in offsetting heating cost at the community school. This project will be integrated into Igiugig's existing standalone diesel electric generation and distribution grid. The project will save the community approximately 13,567 gallons of diesel fuel annually and about 339,181 gallons over the projected 25-year life of the installation. The project will be installed on land owned by the Igiugig Village council adjacent to the community landfill and will use a combination of contracted and local labor. This clean energy initiative will build on recent efforts that include power plant upgrades to automated switchgear, improved diesel generator controls and construction of a battery energy storage system and grid forming inverter. Igiugig is seeking \$1,723,708.28 from the AEA Renewable Energy Fund for this project. If awarded, it is expected that final design, permitting, and long lead-time equipment procurement will occur in 2024 and early 2025, construction will commence in summer of 2025, and system performance verification and reporting will continue through the end of 2026.

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/3681> may have useful information: General area is subject to earthquake hazards, volcanic ash accumulation, and potential flooding from disturbances to Iliamna Lake. The region is in the zone of isolated permafrost (wetland 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 moderate, averaging 2-4 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



Igiugig Tribal Utility Solar PV

App #16013

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	30	Stage 2 Tech & Econ Score (100)	76.50
2. Matching Resources (15)	9.00	Benefit/Cost Ratio	1.03
3. Stage 2 Feasibility (25)	19.13		
4. Project Readiness (5)	4.00	Project Rank	
5. Benefits (10)	4.33	Statewide (of 27 Standard applications)	5
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	8.00	Stage 3 Ranking Score (100)	76.96
Total Stage 3 Score (100)	76.96		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$1,744,642	\$1,744,642	Cost of Electricity	\$0.92/kWh
REF Grant Funds	\$1,723,709	\$1,723,709	Price of Fuel	\$9.60/Gal
Matching Funds	\$20,933	\$20,933	Household Energy Cost	\$13,627

AEA Review Comments & Recommendation

Full Funding

Election District: 37-S

Goat Lake Hydro Storage Expansion Study

App #16014

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 16 Application Summaries



Goat Lake Hydro Storage Expansion Study

App #16014

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	14.37	Stage 2 Tech & Econ Score (100)	70.50
2. Matching Resources (15)	19.50	Benefit/Cost Ratio	0.00
3. Stage 2 Feasibility (25)	17.63		
4. Project Readiness (5)	5.00	Project Rank	
5. Benefits (10)	2.08	Statewide (of 27 Standard applications)	8
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	10.00	Stage 3 Ranking Score (100)	71.08
Total Stage 3 Score (100)	71.08		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$	\$	Cost of Electricity	\$0.32/kWh
REF Grant Funds	\$121,250	\$121,250	Price of Fuel	\$3.60/Gal
Matching Funds	\$52,250	\$52,250	Household Energy Cost	\$6,371

AEA Review Comments & Recommendation

Full Funding

Election District: 3-B

Renewable Energy Fund: Round 16 Application Summaries



AEEC / KPB CPL Landfill Gas CHP Project

App #16015

Standard Application

Project Type: Biomass

Energy Region: Railbelt

Applicant: Alaska Electric & Energy Cooperative, Inc.

Proposed Phase(s): Construction

Applicant Type: Utility

Recommended Phase(s): Construction

Project Description

Homer Electric Association, Inc. (HEA) through its generation subsidiary Alaska Electric & Energy Cooperative, Inc. (AEEC) and in cooperation with the Kenai Peninsula Borough (KPB) propose to install a Combined Heat & Power (CHP) Project at the KPB's Central Peninsula Landfill (CPL). The proposed Project would generate electricity from collected landfill gas and initially be supplemented with pipeline natural gas to generate up to 1.6 MW of power. The waste heat from the electric reciprocating engine generator would be captured and utilized to operate the CPL's leachate evaporator which is currently fueled by natural gas from the ENSTAR system. Thus, eliminating or significantly reducing the CPL's natural gas bill required to evaporate leachate.

DNR/DMLW Feasibility Comments

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

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. Geologic guidebook and maps <https://dggs.alaska.gov/pubs/id/15941> may have useful geologic information. General area subject to earthquake hazards (<http://dggs.alaska.gov/pubs/id/3883>) and volcanic ash accumulation. Known indoor radon values vary from below detection to 16.6 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



AEEC / KPB CPL Landfill Gas CHP Project

App #16015

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	16.06	Stage 2 Tech & Econ Score (100)	88.92
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	1.61
3. Stage 2 Feasibility (25)	22.23		
4. Project Readiness (5)	4.50	Project Rank	
5. Benefits (10)	8.75	Statewide (of 27 Standard applications)	4
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	8.67	Stage 3 Ranking Score (100)	83.71
Total Stage 3 Score (100)	83.71		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$12,685,316	\$12,685,316	Cost of Electricity	\$0.24/kWh
REF Grant Funds	\$1,115,014	\$1,115,014	Price of Fuel	\$3.73/Gal
Matching Funds	\$875,000	\$875,000	Household Energy Cost	\$7,120

AEA Review Comments & Recommendation

Full Funding

Election District: 6-C

Renewable Energy Fund: Round 16 Application Summaries



Akiachak Native Community 200 kW Solar Energy Project

App #16016

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 perennally frozen ground (permafrost) (Jorgenson and others, 2008; Olefeldt and others, 2016). Radon concentrations are modeled to be low.

Renewable Energy Fund: Round 16 Application Summaries



Akiachak Native Community 200 kW Solar Energy Project

App #16016

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	20.01	Stage 2 Tech & Econ Score (100)	44.42
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	0.33
3. Stage 2 Feasibility (25)	11.11		
4. Project Readiness (5)	0.83	Project Rank	
5. Benefits (10)	1.38	Statewide (of 27 Standard applications)	18
6. Local Support (5)	1.00	Regional (of all applications)	
7. Sustainability (10)	8.33	Stage 3 Ranking Score (100)	63.65
Total Stage 3 Score (100)	63.65		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$1,443,257	\$1,443,257	Cost of Electricity	\$0.60/kWh
REF Grant Funds	\$1,443,257	\$67,833	Price of Fuel	\$6.17/Gal
Matching Funds	\$2,265,809	\$113,291	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 16 Application Summaries



Port Heiden Turbine, Battery, ETS Construction

App #16017

Standard Application

Project Type: Wind, Other

Energy Region: Bristol Bay

Applicant: Native Village of Port Heiden

Proposed Phase(s): Construction

Applicant Type: Government Entity

Recommended Phase(s): Construction

Project Description

The Port Heiden Utility is a standalone diesel generating and electrical distribution utility providing electricity to the community of Port Heiden, owned by the City of Port Heiden. The Native Village of Port Heiden, with support from the City received a grant from BIA to conduct a renewable resource assessment,. Shortly after the BIA award was granted, we were also awarded funds from the USDA – High Energy Cost program for us to begin our wind/storage project. We determined the Resource Assessment needed to be completed before we moved to development. Port Heiden is requesting a total of \$949,750 to install, integrate, and commission the renewable energy equipment for our wind/storage/heat (W/S/H) project. It was 2020 when we developed the estimated costs for the funding received from USDA-HEC, and prices have escalated since that time. Supply chain issues have affected the availability and price of steel, specialized equipment, batteries, and transportation costs. Based on consultations with USDA, BIA and our selected contractor, Intelligent Energy Systems, we have determined the cost to install, integrate, and commission our Wind/Storage/Heat system. If AEA-REF selects Port Heiden for award, we are committed to covering any potential cost overruns. The Port Heiden W/S/H centers around two (2) large rotor 100kW wind turbines, and flexible control and integration framework, which will optimize renewable (wind and future solar) capture. The proposed system is similar to other systems operating in several remote Alaskan communities. The proposed wind system will generate 350,000 kWh, displacing 21,450 gallons of diesel and we estimate a total savings of we estimate savings of \$237,135 in annual cost savings from the Wind-Heat-Storage system. -Wind generation will displace 21,450 gallons of diesel @\$5 for an annual savings of \$107,250 - Diesels off – BESS = 17,416 gallons for \$87,080 @\$5 gallon -Wind to heat sales will provide new revenues for the utility of about \$14,305, which is also the amount anticipated each household will save using ETS units. -Reduced O&M for 4,000 hours of diesel off time – which we believe is a very conservative estimate – at a very low \$9 per hour labor rate creates an additional \$36,000 in savings

DNR/DMLW Feasibility Comments

RSS: The project appears to be within State lands managed by DOT&PF acquired through OSL 331, Port Heiden Airfield, shown on the Master Title Plat for S037S059W as US Survey 9398. Please contact State of Alaska Department of Transportation and Public Facilities to determine if permits or additional authorization are needed prior to proceeding with this 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 report <https://dggs.alaska.gov/pubs/id/30672> and geologic report and map <https://dggs.alaska.gov/pubs/id/12941> may have useful information. General area is subject to flooding and erosion, volcanic ash accumulation and other volcanic hazards, and earthquake hazards (<https://www.ncei.noaa.gov/maps/hazards>). Radon concentrations are modeled to be moderate, averaging 2-4 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



Port Heiden Turbine, Battery, ETS Construction

App #16017

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis
1. Cost of Energy (30)		Stage 2 Tech & Econ Score (100) 29.50
2. Matching Resources (15)		Benefit/Cost Ratio 0.48
3. Stage 2 Feasibility (25)		
4. Project Readiness (5)		Project Rank
5. Benefits (10)		Statewide (of 27 Standard applications)
6. Local Support (5)		Regional (of all applications)
7. Sustainability (10)		Stage 3 Ranking Score (100)
Total Stage 3 Score (100)		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$4,259,685	\$4,259,685	Cost of Electricity	\$0.65/kWh
REF Grant Funds	\$949,750	\$0	Price of Fuel	\$6.62/Gal
Matching Funds	\$3,309,935	\$0	Household Energy Cost	\$9,495

AEA Review Comments & Recommendation

Did Not Pass Stage 2

Project did not achieve the required 40 points, as per Section 4 of the REF Round 16 RFA to advance onto stage 3. Per regulation 3 AAC 107.645 it is determined that the project is not technically nor economically feasible, and will not advance onto Stage 3 for funding consideration. Project Concerns: Port Heiden currently has a partially funded distribution upgrade. Phases I&II are funded through the Denali Commission and managed by AEA. Phase VI was just awarded to the Native Village of Port Heiden and the Village has asked AEA to manage the project for them. Phases III-V are still unfunded, and the system remains in poor condition. The proposed wind turbine may be located outside of the distribution system. The ETS stoves may be located in areas that are not equipped to carry the additional electrical load. The distribution upgrades should be completed before adding renewables to the system.

Election District: 37-S

Renewable Energy Fund: Round 16 Application Summaries



Nenana Biomass District Heat System, Final Phase

App #16018

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 and create 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 perennally 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 16 Application Summaries



Nenana Biomass District Heat System, Final Phase

App #16018

Heat Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	15.48	Stage 2 Tech & Econ Score (100)	78.58
2. Matching Resources (15)	13.50	Benefit/Cost Ratio	1.14
3. Stage 2 Feasibility (25)	19.64		
4. Project Readiness (5)	4.33	Project Rank	
5. Benefits (10)	5.33	Statewide (of 2 Heat applications)	1
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	8.67	Stage 3 Ranking Score (100)	69.46
Total Stage 3 Score (100)	69.46		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$1,223,000	\$1,223,000	Cost of Electricity	\$0.25/kWh
REF Grant Funds	\$1,223,000	\$1,223,000	Price of Fuel	\$4.31/Gal
Matching Funds	\$168,322	\$168,322	Household Energy Cost	\$6,864

AEA Review Comments & Recommendation

Full Funding

Election District: 36-R

Renewable Energy Fund: Round 16 Application Summaries



NJUS Solar Nome Banner Ridge Solar Farm

App #16019

Standard Application

Project Type: Solar

Energy Region: Bering Straits

Applicant: Nome Joint Utility System

Proposed Phase(s): Construction

Applicant Type: Utility

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 16 Application Summaries



NJUS Solar Nome Banner Ridge Solar Farm

App #16019

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	20.61	Stage 2 Tech & Econ Score (100)	61.17
2. Matching Resources (15)	9.00	Benefit/Cost Ratio	0.57
3. Stage 2 Feasibility (25)	15.29		
4. Project Readiness (5)	4.50	Project Rank	
5. Benefits (10)	1.58	Statewide (of 27 Standard applications)	19
6. Local Support (5)	1.00	Regional (of all applications)	
7. Sustainability (10)	8.00	Stage 3 Ranking Score (100)	59.99
Total Stage 3 Score (100)	59.99		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$4,050,000	\$4,050,000	Cost of Electricity	\$0.36/kWh
REF Grant Funds	\$4,000,000	\$4,000,000	Price of Fuel	\$6.85/Gal
Matching Funds	\$50,000	\$50,000	Household Energy Cost	\$9,139

AEA Review Comments & Recommendation

Full Funding

Election District: 39-T

Renewable Energy Fund: Round 16 Application Summaries



Naknek Solar PV on Cape Suwarof

App #16020

Standard Application

Project Type: Solar

Energy Region: Bristol Bay

Applicant: Naknek Electric Association, Inc.

Proposed Phase(s): Construction

Applicant Type: Utility

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 16 Application Summaries



Naknek Solar PV on Cape Suwarof

App #16020

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	21.54	Stage 2 Tech & Econ Score (100)	68.67
2. Matching Resources (15)	16.50	Benefit/Cost Ratio	0.57
3. Stage 2 Feasibility (25)	17.17		
4. Project Readiness (5)	5.00	Project Rank	
5. Benefits (10)	1.50	Statewide (of 27 Standard applications)	7
6. Local Support (5)	2.50	Regional (of all applications)	
7. Sustainability (10)	9.33	Stage 3 Ranking Score (100)	73.54
Total Stage 3 Score (100)	73.54		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$4,110,000	\$4,110,000	Cost of Electricity	\$0.58/kWh
REF Grant Funds	\$3,210,000	\$3,137,848	Price of Fuel	\$4.78/Gal
Matching Funds	\$900,000	\$900,000	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 16 Application Summaries



Southeast Alaska Grid Resiliency (SEAGR)

App #16021

Standard Application

Project Type: Hydro

Energy Region: Southeast

Applicant: Southeast Alaska Power Agency (SEAPA)

Proposed Phase(s): Design, Construction

Applicant Type: Government Entity

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 16 Application Summaries



Southeast Alaska Grid Resiliency (SEAGR)

App #16021

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	15.18	Stage 2 Tech & Econ Score (100)	62.33
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	0.00
3. Stage 2 Feasibility (25)	15.58		
4. Project Readiness (5)	4.50	Project Rank	
5. Benefits (10)	1.67	Statewide (of 27 Standard applications)	15
6. Local Support (5)	1.00	Regional (of all applications)	
7. Sustainability (10)	9.00	Stage 3 Ranking Score (100)	67.93
Total Stage 3 Score (100)	67.93		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$22,592,510	\$22,592,510	Cost of Electricity	\$0.13/kWh
REF Grant Funds	\$4,000,000	\$4,000,000	Price of Fuel	\$4.79/Gal
Matching Funds	\$18,592,510	\$18,592,510	Household Energy Cost	\$6,730

AEA Review Comments & Recommendation

Full Funding

Election District: 1-A, 2-A

Renewable Energy Fund: Round 16 Application Summaries



Kotzebue Community Scale Energy Storage and Inertia

App #16022

Standard Application

Project Type: Storage

Energy Region: Northwest Arctic

Applicant: Kotzebue Electric Association, Inc.

Proposed Phase(s): Construction

Applicant Type: Utility

Recommended Phase(s): Construction

Project Description

This project will procure and install a community scale battery energy storage and inertia system (BESS/I) at the KEA powerplant. Utilizing the design and study efforts from AEA REF Round 13, KEA is prepared to procure, install, and commission a community-scale battery energy storage with inertia system that will enable Kotzebue to be powered with 100+% renewable power at times of sufficient wind and/or solar power availability. The battery will be located at the KEA powerplant site and replace the existing 1MW/1MWh BESS that is reaching end of life (installed 2015) and is too small for the community. The inertia system will consist of a synchronous condenser (SC) which will replace the existing 1MVar ABB Statcom to provide system-wide, physical inertia during diesel-off operation and fault current capacity in the event of a power distribution event. The BESS/I system will significantly increase the resiliency and reliability of the Kotzebue power system when operating at high and 100% renewable power contribution.

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. General area is subject to erosion and flooding. This region is in the zone of continuous permafrost (dominantly lake thermokart terrain), meaning that >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 variable.

Renewable Energy Fund: Round 16 Application Summaries



Kotzebue Community Scale Energy Storage and Inertia

App #16022

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	17.86	Stage 2 Tech & Econ Score (100)	87.50
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	1.73
3. Stage 2 Feasibility (25)	21.88		
4. Project Readiness (5)	3.83	Project Rank	
5. Benefits (10)	9.50	Statewide (of 27 Standard applications)	3
6. Local Support (5)	1.00	Regional (of all applications)	
7. Sustainability (10)	10.00	Stage 3 Ranking Score (100)	85.07
Total Stage 3 Score (100)	85.07		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$7,925,000	\$7,925,000	Cost of Electricity	\$0.37/kWh
REF Grant Funds	\$4,000,000	\$3,675,000	Price of Fuel	\$6.50/Gal
Matching Funds	\$3,500,000	\$3,256,250	Household Energy Cost	\$7,920

AEA Review Comments & Recommendation

Partial Funding

Partial Funding: Maximum award amount per project is currently \$4 million for high energy cost areas as per section 1.15 of the Round 16 RFA. In Round 13, KEA was awarded a REF grant (#7013018) in the amount of \$325,000 for the study and design of the now proposed BESS/I system. As such, the requested amount of \$4 million is reduced correspondingly by \$325,000 to provide a revised funding recommendation of \$3,675,000.

Election District: 40-T

Renewable Energy Fund: Round 16 Application Summaries



Knutson Creek Hydro Project Construction

App #16023

Standard Application

Project Type: Hydro

Energy Region: Bristol Bay

Applicant: Pedro Bay Village Council

Proposed Phase(s): Construction

Applicant Type: Utility

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 16 Application Summaries



Knutson Creek Hydro Project Construction

App #16023

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	21.18	Stage 2 Tech & Econ Score (100)	47.50
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	0.08
3. Stage 2 Feasibility (25)	11.88		
4. Project Readiness (5)	2.67	Project Rank	
5. Benefits (10)	0.50	Statewide (of 27 Standard applications)	17
6. Local Support (5)	1.00	Regional (of all applications)	
7. Sustainability (10)	6.33	Stage 3 Ranking Score (100)	64.56
Total Stage 3 Score (100)	64.56		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$8,551,470	\$8,551,470	Cost of Electricity	\$0.82/kWh
REF Grant Funds	\$400,000	\$400,000	Price of Fuel	\$5.29/Gal
Matching Funds	\$7,200,000	\$7,200,000	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 16 Application Summaries



Healy Unit 2 Coal to Biomass Fuel Conversion

App #16024

Standard Application

Project Type: Biomass

Energy Region: Railbelt

Applicant: Golden Valley Electric Association

Proposed Phase(s): Recon, Feasibility

Applicant Type: Utility

Recommended Phase(s): Recon, Feasibility

Project Description

Funds from this project will be used to study technical requirements and report on the costs and benefits of converting GVEA's Healy Unit 2 power plant to burn wood residual biomass instead of coal. The biomass would be sourced from state owned forests and, possibly from other land owners in the vicinity. The study would assess the quantity of sustainable fuel supply and ability of the project to support State resource management objectives. The Phase 1 Reconnaissance report and presentation and Phase 2 Feasibility and Conceptual Design report and presentation will be made available to the public.

DNR/DMLW Feasibility Comments

Yukon-Tanana Area Plan but not classified.

DNR/DOF Feasibility Comments

N/A

DNR/DGGS Feasibility Comments

N/A

DNR/DGGS Geohazards Comments

See general DGGS comment on hazards. The map <https://dggs.alaska.gov/pubs/id/12899> may have some useful information about the general geology. General area subject to earthquake hazards. 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). Known indoor radon values range from below detection to 26.7 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



Healy Unit 2 Coal to Biomass Fuel Conversion

App #16024

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	18.99	Stage 2 Tech & Econ Score (100)	68.25
2. Matching Resources (15)	16.50	Benefit/Cost Ratio	0.00
3. Stage 2 Feasibility (25)	17.06		
4. Project Readiness (5)	5.00	Project Rank	
5. Benefits (10)	2.33	Statewide (of 27 Standard applications)	11
6. Local Support (5)	1.50	Regional (of all applications)	
7. Sustainability (10)	8.67	Stage 3 Ranking Score (100)	70.05
Total Stage 3 Score (100)	70.05		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$328,000	\$328,000	Cost of Electricity	\$0.25/kWh
REF Grant Funds	\$269,500	\$269,500	Price of Fuel	\$4.09/Gal
Matching Funds	\$58,500	\$58,500	Household Energy Cost	\$8,420

AEA Review Comments & Recommendation

Full Funding

Election District: various

Renewable Energy Fund: Round 16 Application Summaries



Kongiganak 100 kW Solar Energy Project

App #16025

Standard Application

Project Type: Solar

Energy Region: Lower Yukon-Kuskokwim

Applicant: Puvurnaq Power Company

Proposed Phase(s): Design, Construction

Applicant Type:

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 as 900 hours of diesel off operations (@ \$9.25/hour = \$8,325), resulting in an estimated total annual reduction in operating costs for the utility in excess of \$225,193, even before accounting for reduced 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 16 Application Summaries



Kongiganak 100 kW Solar Energy Project

App #16025

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	21.26	Stage 2 Tech & Econ Score (100)	54.67
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	0.60
3. Stage 2 Feasibility (25)	13.67		
4. Project Readiness (5)	3.67	Project Rank	
5. Benefits (10)	1.00	Statewide (of 27 Standard applications)	12
6. Local Support (5)	0.00	Regional (of all applications)	
7. Sustainability (10)	8.67	Stage 3 Ranking Score (100)	69.26
Total Stage 3 Score (100)	69.26		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$1,402,933	\$1,402,933	Cost of Electricity	\$0.67/kWh
REF Grant Funds	\$728,603	\$720,453	Price of Fuel	\$6.33/Gal
Matching Funds	\$674,330	\$674,330	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

Atmautluak ETS Installation, Integration and Commissioning

App #16026

Heat Application

Project Type: Wind, Other

Energy Region: Lower Yukon-Kuskokwim

Applicant: Atmautluak Tribal Utilities

Proposed Phase(s): Construction

Applicant Type: Utility

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 16 Application Summaries



Atmautluak ETS Installation, Integration and Commissioning

App #16026

Heat Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	19.26	Stage 2 Tech & Econ Score (100)	56.83
2. Matching Resources (15)	21.00	Benefit/Cost Ratio	0.29
3. Stage 2 Feasibility (25)	14.21		
4. Project Readiness (5)	5.00	Project Rank	
5. Benefits (10)	0.50	Statewide (of 2 Heat applications)	2
6. Local Support (5)	1.50	Regional (of all applications)	
7. Sustainability (10)	6.67	Stage 3 Ranking Score (100)	68.13
Total Stage 3 Score (100)	68.13		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$474,387	\$474,387	Cost of Electricity	\$0.66/kWh
REF Grant Funds	\$286,227	\$286,227	Price of Fuel	\$5.36/Gal
Matching Funds	\$188,160	\$188,160	Household Energy Cost	\$8,538

AEA Review Comments & Recommendation

Full Funding

Election District: 38-S

Renewable Energy Fund: Round 16 Application Summaries



Indian River Construction Project Matching Funds

App #16027

Standard Application

Project Type: Hydro

Energy Region: Southeast

Applicant: City OF Tenakee Springs dba Tenakee Springs
Electric Department

Proposed Phase(s): Construction

Applicant Type: Utility

Recommended Phase(s): Construction

Project Description

The City of Tenakee Springs is constructing a hydroelectric project on Indian River. The project is a 180 kW low head, run-of-river plant displacing the use of approximately 30,000 gallons of diesel fuel annually, or 94% of annual electric utility diesel consumption.

DNR/DMLW Feasibility Comments

Northern Southeast Area Plan (unit C33) classified Public Facilities Retained - consistent with the requirements of the court order dated March 9, 1981 for case 1JU-80-166 CIV.

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/11998> may have some useful information about general geology. General area is subject to erosion and flooding. The coastal area in this region is subject to potential tsunami hazard: <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 moderate, averaging 2-4 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



Indian River Construction Project Matching Funds

App #16027

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis
1. Cost of Energy (30)		Stage 2 Tech & Econ Score (100) 38.42
2. Matching Resources (15)		Benefit/Cost Ratio 0.00
3. Stage 2 Feasibility (25)		
4. Project Readiness (5)		Project Rank
5. Benefits (10)		Statewide (of 27 Standard applications)
6. Local Support (5)		Regional (of all applications)
7. Sustainability (10)		Stage 3 Ranking Score (100)
Total Stage 3 Score (100)		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$9,654,000	\$9,654,000	Cost of Electricity	\$0.77/kWh
REF Grant Funds	\$890,000	\$0	Price of Fuel	\$5.39/Gal
Matching Funds	\$5,081,000	\$0	Household Energy Cost	\$9,927

AEA Review Comments & Recommendation

Did Not Pass Stage 2

Project did not achieve the required 40 points, as per Section 4 of the REF Round 16 RFA to advance onto stage 3. Per regulation 3 AAC 107.645 it is determined that the project is not technically nor economically feasible, and will not advance onto Stage 3 for funding consideration. Project Concerns: -Federal Grants FE-DOE-003045 is still pending award. No confirmation of receipt of award yet. -The December 2020 storm caused estimated 500-year floods in the region including at Indian River, which caused extensive damage to the 1970s USFS logging road used to access the hydro site, most creek crossings within Tenakee area, and extensive erosion of the penstock bench that parallels Indian River. The City is working with FEMA under the state/federal disaster declaration to repair damage to the penstock bench, work is anticipated to begin in summer 2024. -There should be adequate training added to the project's business/operations plan so the community can sustainably perform troubleshooting and operate the facility with continuity. -Applicant received \$3,300,000 in construction funding in July 2013 for this project, under REF grant #7060978 (Project closed in 2020). Funding was expended, scope not reduced, construction only half completed. Additionally, \$203,000 was awarded in REF Round 4 under REF grant #7040041 for design of the hydro facility.

Election District: 2-A

Renewable Energy Fund: Round 16 Application Summaries



Ruby Community Solar PV and Battery Storage

App #16028

Standard Application

Project Type: Solar, Storage

Energy Region: Yukon-Koyukuk/Upper Tanana

Applicant: Tanana Chiefs Conference

Proposed Phase(s): Design, Construction

Applicant Type: IPP

Recommended Phase(s): Design, Construction

Project Description

The Ruby Community-Scale Solar Photovoltaic and Battery Energy Storage System Project proposes to install a 300 KW solar photovoltaic (PV) and 450 kWh battery energy storage system (BESS). This project will be integrated into the City of Ruby's existing stand-alone diesel electric generation and distribution grid and save the community approximately 35,405 gallons of diesel fuel annually and about 906,289 gallons over the projected 25-year life of the installation. The project will be installed on City land above the certified flood level and will use a combination of contracted and local labor. This clean energy initiative will build on recent efforts that include power plant upgrades to automated switchgear, improved diesel generator controls and higher efficiency engines, transformer upgrades and changeouts that are expected to save several thousand gallons of fuel annually. TCC is seeking \$2,008,113 from the AEA Renewable Energy Fund for this project. If awarded, it is expected that final design, permitting, and long lead-time equipment procurement will occur in 2024 and early 2025, construction will commence in summer of 2025, and system performance verification and reporting will continue through the end of 2035, per AEA reporting requirements. TCC will serve as an Independent Power Producer and the City of Ruby will purchase the renewable power through a Power Purchase Agreement (PPA).

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/2587> may have some useful information about general geology. General area is subject to erosion and flooding. 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 low to moderate, averaging below detection to 4 pCi/L.

Renewable Energy Fund: Round 16 Application Summaries



Ruby Community Solar PV and Battery Storage

App #16028

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)	29.13	Stage 2 Tech & Econ Score (100)	80.67
2. Matching Resources (15)	19.50	Benefit/Cost Ratio	1.23
3. Stage 2 Feasibility (25)	20.17		
4. Project Readiness (5)	3.67	Project Rank	
5. Benefits (10)	5.92	Statewide (of 27 Standard applications)	1
6. Local Support (5)	2.00	Regional (of all applications)	
7. Sustainability (10)	9.33	Stage 3 Ranking Score (100)	89.71
Total Stage 3 Score (100)	89.71		

Funding & Cost	Requested	Recommended		
Total Cost Through Construction	\$2,883,019	\$2,883,019	Cost of Electricity	\$0.75/kWh
REF Grant Funds	\$2,008,113	\$2,008,113	Price of Fuel	\$6.75/Gal
Matching Funds	\$874,906	\$874,906	Household Energy Cost	\$12,913

AEA Review Comments & Recommendation

Full Funding with Special Provision

Special Provisions: Provision of Executed Power Purchase Agreement prior to full disbursement of REF funds. Provision of final design documents prior to grant reimbursements for construction related phases.

Election District: 36-R

Godwin Creek Hydroelectric Project

App #16029

Standard Application

Project Type: Hydro

Energy Region: Railbelt

Applicant: Chugach Electric Association

Proposed Phase(s): Feasibility

Applicant Type: Utility

Recommended Phase(s): Feasibility

Project Description

There are two conceptual configurations for the proposed Project. The first is a run-of-river hydroelectric project with a diversion structure on Godwin Creek approximately one mile upstream from the confluence with Fourth of July Creek. From the diversion structure, water would be conveyed through a penstock to a powerhouse located near the confluence of both creeks (see Figure 1). This configuration was developed in 2014 based on early reconnaissance efforts, and all Project features would be located on State or City owned land. Since 2014, the Godwin Glacier has retreated significantly creating a natural lake at the base of the glacier. The lake has two lake outlets (a northern outlet and a southern outlet). Given this new development, an alternative configuration would be to construct a dam at both lake outlets to create some amount of storage potential. It should be noted that these Project features would be located on USFS land and would therefore trigger the need for a FERC license. Under this configuration the intake structure would likely be located near the southern lake outlet, from which point water would be diverted through a penstock to a powerhouse located near the confluence with Fourth of July Creek. For both configurations, tailwater from the powerhouse would be conveyed into Fourth of July Creek or Godwin Creek near the confluence of both creeks. A transmission line would be constructed from the powerhouse to an existing substation approximately 10,900 feet west of the proposed powerhouse location. Access roads, including a bridge crossing Godwin Creek would also be necessary for the construction and operation of the Project.

Renewable Energy Fund: Round 16 Application Summaries



Godwin Creek Hydroelectric Project

App #16029

Standard Application

Stage 3 Scoring Summary

Criterion (Max Score)	Score	Feasibility Analysis	
1. Cost of Energy (30)		Stage 2 Tech & Econ Score (100)	
2. Matching Resources (15)		Benefit/Cost Ratio	0.00
3. Stage 2 Feasibility (25)			
4. Project Readiness (5)		Project Rank	
5. Benefits (10)		Statewide (of 27 Standard applications)	
6. Local Support (5)		Regional (of all applications)	
7. Sustainability (10)		Stage 3 Ranking Score (100)	
Total Stage 3 Score (100)			
Funding & Cost	Requested	Recommended	
Total Cost Through Construction	\$	\$	Cost of Electricity \$0.00/kWh
REF Grant Funds	\$1,729,000	\$0	Price of Fuel \$0.00/Gal
Matching Funds	\$306,117	\$0	Household Energy Cost \$0

AEA Review Comments & Recommendation

Did Not Pass Stage 1

Election District: various