

TO: Curtis Thayer, Executive Director

THROUGH: TW, Patch, Director of Planning

FROM: Conner Erickson, Planning Manager

DATE: March 30, 2022

RE: Renewable Energy Fund Grant – Round 14 Update

Round 14 (FY2023)

As of the January 18th, 2022 deadline for applications, AEA received a total of 39 REF applications for a total request of \$19.2 million in REF funds. On January 28th, 2022, and in accordance with Alaska Statute AS 42.45.045(d)(3), AEA provided an update regarding the status of the current Round 14 Renewable Energy Fund (REF) solicitation to the Alaska State Legislature.

As per 3 AAC 107.635 – “Acceptance of applications for consideration; eligibility review”, AEA in its initial, stage 1 review of those received applications rejected 10 applications on the basis of ineligible applicants, late applications, and being substantially incomplete, as summarized in Table 1 below.

Table 1

Rd 14 Rejections - Per 3 AAC 107.635 - Eligibility Review

Reason for Denial	No. of Applications	REF Funding Requested (\$)
Ineligible Applicant	4	\$ 532,500
Late Application	4	\$ 735,000
Substantially Incomplete	2	\$ 342,525
Total	10	\$ 1,610,025

Upon AEA’s issuance of the rejection letters to those 10 applicants in late January, AEA received an appeal from a sole applicant. AEA’s decision to cease further consideration of the application, upon further review and agreement from AEA’s Executive Director as allowed per 3 AAC 107.650(b), was upheld owing to the application being duplicative and substantially incomplete. The remaining 29 applications account for a total request of \$18.7 million in REF funds, as indicated in Table 2 below.

Table 2**Rd 14 Summary of Applications by Energy Region - Post Stage 1 Review**

Energy Region	No. of Applications	REF Funding Requested (\$)
Aleutians	1	\$ 321,000
Bering Straits	1	\$ 2,000,000
Bristol Bay	2	\$ 2,495,500
Kodiak	1	\$ 172,600
Lower Yukon-Kuskokwim	7	\$ 1,988,392
Northwest Arctic	3	\$ 3,192,435
Railbelt	11	\$ 6,334,707
Southeast	1	\$ 62,368
Yukon-Koyukuk/Upper Tanana	2	\$ 2,135,000
Total	29	\$ 18,702,002

The evaluation process is now in the stage 2 (3 AAC 107.645) and stage 3 (3 AAC 107.655) scoring reviews. All reviews by the State of Alaska Dept. of Natural Resources (DNR) have been completed. The DNR reviews those submitted applications for their potential impact on State owned land and resources. All reviews have also been completed by the contracted economists. The contracted economists provide cost-benefit analyses and reviews concerning the economic feasibility of those submitted applications. Owing to those stage 2 and 3 scoring reviews which have been completed, one application has been subject to a reduction in its grant request by \$1 million, reducing overall grants funds requested to \$17.7 million. The per project cap for REF funding is \$2 million for high cost energy areas and this project was awarded \$1 million in grant funds in round 13, thus limiting its request for the current Round 14 to \$1 million. Additionally, owing to further review of the applications, one application was found to be an ineligible project. The applicant was sent a notice of rejection and has since appealed. This appeal is currently under review. Should the appeal be denied, this will reduce the overall grant request by \$375,000. The remaining stage 2 and 3 scoring reviews will take place through April 11th, and it is anticipated, based on past rounds, that a portion of those remaining applications will be rejected owing to items concerning economic and/or technical feasibility.

Consultation with REFAC on AEA's Recommendations of Applications to the Legislature

AEA is currently coordinating a meeting with the REFAC members for April 14th or April 15th, in fulfillment of AS 42.45.045(e). Upon the solicitation of the REFAC's counsel, AEA will forward on its recommendations to the Legislature for their consideration of award and appropriation within the FY2023 budget. AEA's transmittal of its recommendations to the Legislature is anticipated for April 18th. It should be noted that any and all REF appropriations are at the full discretion of the Legislature.

Attachments

- Round 14 Project Description Summaries

App Number	Applicant Name	Project Title	Community (Nearest)	Project Phase(s)	Applicant Type	Energy Region	Election District	Grant Funds Requested	Technology	Project Description
14001	Nushagak Electric & Telephone Cooperative	Nuyakuk River Hydroelectric Project	Dillingham	Feasibility and Conceptual Design	Utility	Bristol Bay	37-S	\$ 2,000,000.00	Hydro	The proposed Project is a new 10-12 MW run of river hydropower project consisting of an intake structure, power conduit, powerhouse forebay, powerhouse, and tailrace channel approximately 4 miles downstream of the Tikchik Lake outlet above a natural fall on the Nuyakuk River. Power from the Project would be available to the customers of the Cooperative and potentially other areas in the region. The renewable power provided by the Project would represent a significant upgrade to the current distribution system and minimize the reliance of local communities on fossil fuels as their primary source of electricity. Currently, the population that would be served by this Project relies wholly on diesel generation, which is barged upstream through the Nushagak River drainage to requisite locations. The reduction (or elimination) of water transport of fuels will reduce the potential for negative environmental impacts due to spills. The primary industry in the Project service area is related to commercial harvest and processing of salmon. The long-term demand for more reliable, efficient, and cost-effective renewable electric power, dispatchable renewable thermal heat, high-speed broadband, along with the likely limited resource impacts makes this Project a highly viable opportunity
14002	Alaska Village Electric Cooperative	Holy Cross Solar Energy & Battery Storage Feasibility Study Project	Holy Cross	Feasibility and Conceptual Design	Utility	Yukon-Koyukuk/Upper Tanana	37-S	\$ 135,000.00	Solar	Alaska Village Electric Cooperative, Inc. (AVEC) is requesting \$135,000 through an Alaska Energy Authority (AEA) Renewable Energy Fund (REF) grant to conduct a feasibility study for local solar energy and battery storage potential in Holy Cross, Alaska. The proposed project involves analyzing solar data, examining potential location alternatives, and creating a conceptual design for local solar energy and battery storage. Like many communities in Alaska, Holy Cross experiences high and unstable energy costs. The community depends on diesel fuel to power the three local generators responsible for all available energy in Holy Cross. Solar energy has proven a viable energy resource through projects in the similar communities of Eagle and Kaltag. Dependent on the results of the proposed feasibility study, AVEC would secure funding to prepare a final design, complete permitting, and develop solar energy in Holy Cross.
14003	Point MacKenzie Solar	Point MacKenzie Solar	Point Mackenzie	Reconnaissance; Feasibility and Conceptual Design; Final Design and Permitting; Construction	Independent Power Producer	Railbelt	8-D	\$ 1,000,000.00	Solar	This will be a Solar PV Facility, with installed capacity of 5.9 MW, highly reliable and most available in the summer months, with 500 MWh average to be delivered each month. A 6 MegaWatt DC/5 Megawatt AC utility-scale solar farm is planned for the proposed system. The system will be interconnected to the CEA power grid via a medium-voltage line extension to the site feeding the two Y-Y 2.5 MVA transformers. Each of the two transformers will feed one of the two 4,000 Amp service MDP's with backfeed rated circuit breakers for collecting solar inverters. The 5 Megawatt of AC rated inverters will be interconnected to the MDP's by 480V 3 phase. The solar inverters will collect the 6 MegaWatt of 480 Watt solar modules for conversion to AC power. The solar modules will be mounted in a fixed position on a ground-mounted racking system positioned in rows to maximize the use of the land available for the greatest overall efficiency. The DC wiring will be operating at approximately 1,200 Volts DC per string providing 6 million KWh annually.
14004	Alaska Village Electric Cooperative	Pilot Station Wind Energy Feasibility Study & Conceptual Design Project	Pilot Station	Feasibility and Conceptual Design	Utility	Lower Yukon-Kuskokwim	39-T	\$ 229,500.00	Wind	Alaska Village Electric Cooperative, Inc. (AVEC) is requesting \$229,500 and will provide a match of \$29,500 to conduct a wind power and wind-to-heat feasibility and conceptual design project for the community of Pilot Station. AVEC, with the cooperation of the community, would assess the feasibility of wind resources suited to provide power to the community and prepare a conceptual design of a wind facility.
14005	City of Ouzinkie	Ouzinkie Wind Energy Feasibility and Conceptual Design Project	Ouzinkie	Feasibility and Conceptual Design	Local Government	Kodiak	32-P	\$ 172,600.00	Wind	The City of Ouzinkie is requesting \$172,600 to conduct a wind power feasibility and conceptual design project for the community of Ouzinkie. The City proposes to assess the feasibility of wind resources suited to provide power to the community and to prepare a conceptual design of a wind facility. The City would provide an in-kind match of \$14,400 and Ouzinkie Tribe will provide \$50,000 cash match for the project. Ouzinkie Native Corporation (ONC) would provide contracting and project management assistance at no cost.
14006	City of Homer, Department of Public Works	Homer Energy Recovery Project	Homer	Final Design and Permitting; Construction	Local Government	Railbelt	31-P	\$ 492,500.00	Hydro	In the City of Homer, there exist three pressure control facilities located in the City's 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. These pressure control facilities are 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 at each site 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 19 kW and generate 93,000 kwh that will be used to reduce operating costs for the City's Department of Public Works.
14007	Northwest Arctic Borough	Design and Permitting for Solar PV and Battery Storage for Ambler, Kiana, Noorvik, and Selawik	Ambler / Kiana / Noorvik / Selawik	Final Design and Permitting	Local Government	Northwest Arctic	40-T	\$ 590,000.00	Solar	The Northwest Arctic borough (NAB) is requesting \$590,000 for the Phase III Final Design and Permitting for four high penetration distributed solar PV, battery, and diesel hybrid systems for the communities of Ambler, Kiana, Noorvik, and Selawik. The intent of this project is to leverage the economies of scale for the design of the systems to significantly reduce the project development costs and improve the project economics. The economies of scale will also be leveraged in the future construction phase of the systems through equipment procurement and construction contracts. Based on Hybrid Optimization for Multiple Energy Resources (HOMER) software modeling and AEA's B/C Ratio model, when constructed these systems will displace about 102,099 gallons of imported diesel fuel annually and will result in about 3717 hours of diesels-off operation in the communities, saving the communities about \$486,152 during the 1 st year of operation. Lifetime savings for the project are estimated at \$13,458,097. In addition to reducing the cost of electrical generation, the installation of the batteries will dramatically increase the efficiency and resilience of the power generation system by providing spinning reserve and significantly reducing brown-outs and black-outs. This project will leverage the key learnings from other high penetration systems operating and in development in the Northwest Arctic Borough, including Kotzebue, Deering, Buckland, Shungnak, and Noatak.
14008	Alaska Electric & Energy Cooperative, Inc.	AEEC Ninilchik Wind	Ninilchik	Feasibility and Conceptual Design	Utility	Railbelt	31-P	\$ 192,000.00	Wind	Homer Electric Association, Inc. (HEA) through its generation subsidiary Alaska Electric & Energy Cooperative, Inc. (AEEC) plans to construct a 30-MW wind energy generation facility located on the Kenai peninsula. The project will consist of 9 wind turbines disbursed throughout the site and electrically interconnected to the HEA transmission system. In addition to turbines, the project will need to construct turbine access roads and crane pads, plus connect the turbines through an electrical collector system. The proposed project will study the feasibility of locating the wind energy generation facility in the western Kenai Peninsula south of Ninilchik and north of Happy Valley.
14009	Alaska Electric & Energy Cooperative, Inc.	AEEC Summit Lake Wind	Moose Pass	Feasibility and Conceptual Design	Utility	Railbelt	29-O	\$ 232,000.00	Wind	Homer Electric Association, Inc. (HEA) through its generation subsidiary Alaska Electric & Energy Cooperative, Inc. (AEEC) plans to construct a 30-MW wind energy generation facility located on the Kenai peninsula. The project will consist of 9 wind turbines disbursed throughout the site and electrically interconnected to the HEA transmission system. In addition to turbines, the project will need to construct turbine access roads and crane pads, plus connect the turbines through an electrical collector system. The proposed project will study the feasibility of locating the wind energy generation facility in the northeastern Kenai Peninsula on the mountain ridgelines above Summit Lake to the east of the Seward Highway.
14010	Alaska Electric & Energy Cooperative, Inc.	AEEC East Foreland/Nikiski Wind	Nikiski	Feasibility and Conceptual Design	Utility	Railbelt	29-O	\$ 200,000.00	Wind	Homer Electric Association, Inc. (HEA) through its generation subsidiary Alaska Electric & Energy Cooperative, Inc. (AEEC) plans to construct a 30-MW wind energy generation facility located on the Kenai peninsula. The project will consist of 9 wind turbines disbursed throughout the site and electrically interconnected to the HEA transmission system. In addition to turbines, the project will need to construct turbine access roads and crane pads, plus connect the turbines through an electrical collector system. The proposed project will study the feasibility of locating the wind energy generation facility in the East Foreland / Nikiski Industrial Area, in Nikiski, Alaska.
14011	Alaska Electric & Energy Cooperative, Inc.	AEEC Caribou Hills Wind	Ninilchik/Fox River	Feasibility and Conceptual Design	Utility	Railbelt	31-P	\$ 209,600.00	Wind	Homer Electric Association, Inc. (HEA) through its generation subsidiary Alaska Electric & Energy Cooperative, Inc. (AEEC) plans to construct a 30-MW wind energy generation facility located on the Kenai peninsula. The project will consist of 9 wind turbines disbursed throughout the site and electrically interconnected to the HEA transmission system. In addition to turbines, the project will need to construct turbine access roads and crane pads, plus connect the turbines through an electrical collector system. The proposed project will study the feasibility of locating the wind energy generation facility in the Caribou Hills on the southern Kenai Peninsula.
14012	Alaska Electric & Energy Cooperative, Inc.	AEEC/KPB CPL Landfill Gas CHP Project	Soldotna	Final Design and Permitting	Utility	Railbelt	31-P	\$ 884,986.00	Biomass	the installation of a Combined Heat & Power Project at the KPB's Central Peninsula Landfill (CPL). The proposed Project would generate electricity from collected landfill gas and initially 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.
14015	City of Kotzebue	Kotzebue Wind to Heat System	Kotzebue	Feasibility and Conceptual Design; Final Design and Permitting; Construction	Local Government	Northwest Arctic	40-T	\$ 702,435.00	Wind (to heat)	This project would utilize 213,000 KWH of excess wind energy from the non-profit Kotzebue Electric Association, Inc.'s (KEA) wind turbines in the form of heat delivered to the Water Treatment Plant (WTP). This utilizes wind energy that would otherwise be wasted. The proposed project will provide public benefits to both the local electric utility and individual rate payers in the form of additional revenue for KEA and reduced water utility bills for community members due to the avoided diesel fuel use. This project would make the local utility financially stronger, keep money that would have otherwise have gone to the fuel provider circulating within the community, and reduce both fuel costs and fuel use. As KEA adds more turbines, solar, and batteries to their grid over the next two to three years, the amount of recovered heat available from the power plant will decrease significantly, raising the price of operating the WTP. This rise in costs can be mitigated and reversed with the addition of an electric boiler, control panels, and a transformer to allow curtailed wind to be utilized and sold at a discounted rate to the city. The newly constructed WTP includes space for a future electric boiler with hydronics already installed to accommodate a project like this.
14016	Kwig Power Company	Kwiggillingok Wind Turbine Upgrade	Kwiggillingok	Construction	Utility	Lower Yukon-Kuskokwim	38-S	\$ 278,176.00	Wind	Kwig Power Company's existing wind renewable system is due for upgrades and expansion. Its five wind turbines still have 15,000 cfm blades installed, which are inefficient and not optimized for the rough conditions of southwest Alaska. KPC proposes to upgrade these turbines by acquiring four (4) sets of SERI Thin Airfoil blades. The new blades will increase energy production through improved aerodynamic efficiency allowing the rotors to harvest more energy from a given rotor area and through improved peak stall characteristics which will allow an increase of rotor RPM from 50 to 56 or 60 RPM. In addition, we must purchase our own up-tower crane to service our turbines/blades.
14017	Native Village of Kwinhagak	Kwinhagak Reconnaissance Study	Quinhagak	Reconnaissance	Local Government	Lower Yukon-Kuskokwim	38-S	\$ 81,000.00	Solar	Reconnaissance study will focus on collecting and analyzing Kwinhagak's solar resources along with its current electric and thermal load data and diesel-wind system. This baseline data will then be used to create a conceptual design for an energy system that incorporates wind/solar/battery with the current wind-diesel system. Estimated costs and financing will also be included in the final Reconnaissance Study Report.
14018	Kotzebue Electric Association, Inc.	Kotzebue Wind to PV Transition Utilizing Existing Wind Infrastructure	Kotzebue	Construction	Utility	Northwest Arctic	40-T	\$ 1,900,000.00	Solar	Kotzebue Electric Association (KEA) built the first utility-scale wind farm in Alaska beginning in the late-1990s. KEA has been operating a fleet of 66kW wind turbines that are now obsolete and not cost effective to operate and maintain in comparison to the two EWT 900kW turbines. The nonfunctioning 66kW turbines are a negative aspect of renewable energy and KEA is planning to retire the fleet. Unfortunately there is not a suitable small-scale (~50kW) wind turbine available on the US market to replace the 66kW turbines. Though the existing 66kW wind turbines are being retired, the installed power transformers, underground power lines, fiber optic communications, control shelters, SCADA and access roads are still useful for a PV power installation. KEA will convert eight, existing 66kW wind turbine installations into 66kW PV arrays. KEA intends to leave the wind turbine 12" steel piling foundations in place to allow for future testing of small scale (~50-300kW) wind turbines and other energy technologies in a true Arctic environment in cooperation with NREL, UAF-ACEP and other interested entities.
14019	Native Village of Eklutna	Eklutna Village Solar Energy Project - Feasibility Study	Native Village of Eklutna (Palmer proxy)	Feasibility and Conceptual Design	Local Government	Railbelt	12-F	\$ 22,500.00	Solar	Village of Eklutna, with assistance from Eklutna, Onc., are pursuing a "next use" of these properties to incorporate a long-term, renewable energy source providing income to NVE and Eklutna, Inc by increasing benefits to shareholders and providing employment to tribal member within walking distance from their homes. This project would be a source of pride for shareholders and would allow Eklutna to expand its ongoing relationship with Matanuska Electric Association. NVE is requesting support to assess Eklutna, Inc. lands for redevelopment for solar energy deployment.

14020	Puvuruaq Power Company	Kongiganak Wind Upgrade with Airfoil Blades for Turbines	Kongiganak	Construction	Utility	Lower Yukon-Kuskokwim	38-S	\$ 328,716.00	Wind	optimized for the rough conditions of southwest Alaska. PPC proposes to upgrade these turbines by acquiring four (4) blade sets of SERI Thin Airfoil blades to add to the two it has already received funding to purchase. The new blades will increase energy production through improved aerodynamic efficiency allowing the rotors to harvest more energy from a given rotor area and through improved peak stall characteristics which will allow an increase of rotor RPM from 50 to 56 or 60 RPM. In addition, we must purchase our own up-tower crane to service our turbines/blades.
14021	Akiachak Native Community	Akiachak Wind Feasibility	Akiachak	Reconnaissance; Feasibility and Conceptual Design	Local Government	Lower Yukon-Kuskokwim	38-S	\$ 371,000.00	Wind	The Reconnaissance Study phase of this project will focus on collecting data and analyzing Akiachak's current diesel system and wind and solar resources along with electric and thermal load data. These baseline data will then be used to create a conceptual design for an energy system that integrates wind/solar/battery with the current diesel system. A detailed cost estimate and financing plan will also be included in the final Reconnaissance Study Report. For the Phase II portion, we seek to investigate the economic viability of installing wind turbine generators for electrical generation facilities. AC is proposing to install a reference 50-meter meteorological tower as well as a LIDAR meteorological unit to simultaneously collect and correlate wind data across the community at heights greater than or equal to 50 meters. The monitoring program will evaluate specific sites in and around Akiachak and can be easily expanded to surrounding communities through redeployment of the Lidar unit, and continued use of the Akiachak reference station. The monitoring program in Akiachak will continue for 12 months. Monthly wind resource reports will be produced with a final report summarizing the data
14022	Chugach Electric Association, Inc. On behalf of the Bradley Lake Management Committee (BPMC)	Dixon Diversion Feasibility Project	Fritz Creek/ Fox River	Feasibility and Conceptual Design	Utility	Railbelt	32-P	\$ 1,000,000.00	Hydro	Dixon Diversion would be an expansion to the Bradley Lake Hydroelectric Project. Two project alternatives are currently being studied. The primary option would build a tunnel to divert water from the Dixon Glacier watershed to Bradley Lake to increase the energy output of the existing Bradley Lake power plant. The other alternative would transport water by tunnel to a new power plant located on the Lower Martin River. Either alternative would generate enough energy annually to be among the largest hydroelectric projects in Alaska. The diversion project would generate an estimated 168,000 MWh annually, which would increase Bradley Lake's energy output by about 44 percent. This application uses the first option of diverting water to Bradley Lake for the estimated project costs and energy generation. The Martin River alternative is likely to have similar but higher costs and energy generation.
14024	Naterqaq Light Plant	Naterqaq Light Plant Battery Installation and Integration	Chefornak	Construction	Utility	Lower Yukon-Kuskokwim	38-S	\$ 325,000.00	Storage	Naterqaq Light Plant (NLP) is constructing a high penetration wind diesel battery system. NLP is requesting a grant of \$355,000 to complete and improve the battery installation and optimize its performance. Intelligent Energy Systems (IES) has teamed with Hatachi Energy Grid Edge Solutions to furnish, install and integrate a 500kW/713 kWh battery energy storage system into the community of Chefornak's electrical grid. NLP has contracted with Intelligent Energy Systems (IES) of Anchorage, which has in turn teamed with Hatachi Energy Grid Edge Solutions to furnish, install, and integrate a 500kW/713 kWh battery energy storage system into the community of Chefornak's electrical grid. Combined IES and Hatachi Energy represent the most experienced team in Alaska to successfully deliver this project successfully. NLP is requesting a grant of \$352,000 from round 14 of the REF to complete and improve the performance of the overall project.
14025	City of Pilot Point	Pilot Point Comprehensive Community Wind/Solar/Storage & Heat Project	Pilot Point	Construction	Local Government	Bristol Bay	37-S	\$ 495,500.00	Storage	Purchase and install 10kW Energy Storage System (ESS) and 10kW battery system, with expansion to 500 kW/552 kWh battery energy storage system (BESS); this will be integrated into and accommodates existing infrastructure installed in 2019 consisting of two 100 kW XANT wind turbines and 16 installed ETS heaters in community. Another 10 ETS already purchased by the community will be installed/integrated in homes in Pilot Point. Due to the remoteness and complex integration of this system, post-installation support is required and included in this project.
14026	Nome Joint Utility System	Nome Battery Energy Storage System	Nome	Construction	Utility	Bering Straits	39-T	\$ 2,000,000.00	Storage	Nome Joint Utility System (NJUS) proposes construction of a 2 MW/2 MWh battery energy storage system (BESS) to improve utilization (net capacity factor) of its two EWT DW52-900 wind turbines and to enable future expansion of renewable energy, including additional wind turbine, and wind-to-heat systems in the community. A BESS will allow NJUS to operate a smaller and more efficient diesel generator with the wind turbines and will eventually enable occasional diesels-off operation where power will be provided solely by wind turbines and the BESS.
14027	Inside Passage Electric Cooperative	Jenny Creek Hydro Reconnaissance - Kake IPEC	Kake	Reconnaissance	Utility	Southeast	35-R	\$ 62,368.00	Hydro	Inside Passage Electric Cooperative (IPEC) is the local electric provider for Kake, AK. We recently completed the Gunnuk Creek hydro project in Kake, and we are now looking to add additional renewable energy resources to IPEC's generation mix at Kake. IPEC has spent the past decade working to identify renewable energy projects for the benefit of its member-consumers in order to reduce rates, and to reduce carbon emissions from diesel generation. Jenny Creek, located approximately .75 miles from the Kake boat harbor, has long been identified as a potential site for a new run-of-river hydro project. IPEC desires to perform a reconnaissance level study to help decide if further investigation of Jenny Creek's potential is warranted. IPEC plans to work with HDR Engineering, Inc. (HDR) to accomplish this.
14028	City of Nenana	Nenana Biomass District Heat System	Nenana	Construction	Local Government	Railbelt	6-C	\$ 676,121.00	Biomass	the residents of the City of Nenana and the members of the Nenana Native Association. The boiler, a building frame, and structural insulated panels (SIP) have already been purchased for the project. The demolition, sitework, foundation work, installation of district heat piping, and engineering for the building have all been completed. Floor slabs have begun to be poured and work has commenced on erecting the building frame.
14029	Golden Valley Electric Association	Interior Alaska Wind Energy Resource Assessment	Deltana Area (Delta Junction) Donnelly Dome (Fort Greely) Pedro Dome (Fox) Wickersham Dome (Fox)	Reconnaissance; Feasibility and Conceptual Design	Utility	Railbelt	9-E	\$ 1,425,000.00	Wind	Funds from this project will be used to complete wind resource assessments at up to five sites in Interior Alaska (3-5 sites depending on grant funding). Each location will host 1-2 masts with multiple sensors at various elevations to provide quality/representative data for use in a site resource model and bank ready feasibility study. Data collection will continue for a minimum of two years. Data and final reports will be used to document, model, support financing and encourage economically competitive development of utility scale wind projects with a target size of about to 100 MW per site.
14031	Atmautluak Tribal Utilities	Atmautluak Light Plant Battery, Thermal Stove, and Metering Installation	Atmautluak	Construction	Utility	Lower Yukon-Kuskokwim	38-S	\$ 375,000.00	Storage	Atmautluak Light Plant (ALP) is a standalone diesel generating and electrical distribution utility which provides electricity to the Village of Atmautluak. In 2019, ALP received a grant of \$2,900,000 from the USDA High Energy Cost Program to construct a 200 kW wind heat system and integrate the energy into their power system. This system is currently under construction and the funds have been used to install 2, Frontier 24-100 kW wind turbines on 40 meter tilt-up towers; upgrade .5 miles of electrical distribution to interconnect the wind farm; and install a wind diesel supervisory control system, a 200 kW load balancing boiler, and 20 electric thermal storage devices to capture surplus wind energy to displace heating fuel. Construction began in Fall 2021. The wind turbines and powerline have been constructed. The project was subjected to a number of unpredictable cost increases, mostly due to supply chain uncertainties. ALP is requesting \$375,000 to complete the installation and integration of the 250kW/377kWh battery energy storage system and 20 electric thermal stoves to enable upwards of 3,200 hours of diesel off operation annually. This AEA funding will also provide ALP with two years of ongoing technical assistance and an advanced monitoring system to ensure overall power productivity, improve system reliability, grid stability, increase renewable availability and optimize overall power system operations. In sum, the award will enable ALP to produce 40,000 surplus kWh of wind energy annually, displace 30,000 gallons of diesel fuel used for power generation (equivalent to a savings of \$105,000 at \$3.50/gal), and generate deferred diesel operational savings of \$28,800 annually (at \$9 per operating hour). This is an annual benefit of \$133,800. Additionally, the wind system has the potential to produce an additional 66,000 kWh of surplus electricity, which is available to displace Galena Community Scale Solar PV and Battery Project proposes to install a 1.2 MW solar photovoltaic (PV) and 500 kW/800 kWh battery energy storage system (BESS). This project will be integrated into the City of Galena's existing stand-alone diesel electric generation and distribution grid and save the community over 80,000 gallons of diesel fuel annually and over 2,000,000 gallons over the projected 25-year life of the installation. The project will be installed on City land above certified flood level and will use a combination of contracted and local labor. This clean energy initiative will build on recent efforts that include a large-scale biomass district heating system, powerplant upgrades to automated switchgear, improved diesel generator controls and higher efficiency engines, transformer upgrades and changeouts that have already saved several thousand gallons of fuel annually, LED lighting improvements, and a highly trained workforce. The community has already secured \$1.5 million to initiate this project and is seeking \$2 million from the AEA Renewable Energy Fund. If awarded, it is expected that final design, permitting, and long lead-time equipment procurement will occur in 2022 and early 2023, construction will commence in summer of 2023, and system performance verification and reporting
14034	City of Galena	Galena Community Scale Solar PV and Battery Project	Galena	Final Design and Permitting; Construction	Local Government	Yukon-Koyukuk/Upper Tanana	39-T	\$ 2,000,000.00	Solar	
14035	City of False Pass	UNGA Man Creek Hydroelectric Project	False Pass	Final Design and Permitting	Local Government	Aleutians	37-S	\$ 321,000.00	Hydro	Unga Man Creek Hydro Project is a proposed 180 kW run-of-river project on Unga Man Creek north of False Pass. The recommended project configuration would include 4,400 feet of 24-inch HDPE penstock to convey 18 cubic feet per second of water from a diversion structure upstream of the east fork confluence at elevation 260 feet down to a powerhouse at elevation 70 feet, near the existing road bridge. The project would provide 83% of the utility's electricity at generation or ~588,000 kWh annually based on a typical year.