Intertie Management Committee
Resolution No. 24-02

In Suport of Application For Grant Preventing Outages and Enhancing the Resilience of the Electric Grid Formula Grant

INTRODUCTION

The Alaska Intertie Management Committee is responsible for the management, operation, maintenance, and improvement of the Alaska Intertie Project (Alaska Intertie), subject to the non-delegable duties of the Alaska Energy Authority (AEA). The Alaska Intertie transmission line is part of the Alaska Railbelt transmission backbone. It connects the population centers of Interior Alaska within the GVEA service area with the populations centers of South-Central Alaska and Kenai Peninsula.

PURPOSE

The purpose of Resolution 24-02 is to express support for the grant application to the Department of Energy for the construction of a Synchrophasor Data Collection Network (the "Project"), to provide a data collection network for unified wide area monitoring, reporting and analysis, and to authorize Golden Valley Electric Association ("GVEA"), Chugach Electric Association ("CEA"), Matanuska Electric Association ("MEA"), and Homer Electric Association ("HEA") to serve as the Sub-Recipients on behalf of the IMC.

IMC RESOLUTION 24-02

WHEREAS, the Intertie Management Committee is responsible for the management, operation, maintenance, and improvement of the Alaska Intertie Project ("Alaska Intertie"), subject to the non-delegable duties of AEA.

WHEREAS, the Alaska Intertie and the Railbelt have experienced disruptive oscillation events between 2018 and 2021. After multiple studies and investigations were performed to identify the cause, a sub-committee of the Alaska Intertie Operating Committee ("IOC") developed a plan for a communal system to stream, store and analyze synchrophasor data from high-speed data recorders at 12 key Railbelt substations.

WHEREAS, in October 2022, a formal request for proposals was prepared and issued by the IOC for a turn-key synchrophasor system. Electric Power Group (EPG) was chosen based in part on the fact that EPG's synchrophasor and disturbance reporting software applications are used by CAISO, PJM, ERCOT, TVA, NYISO, NERC and other regional reliability entities.

WHEREAS, A contract with EPG has not yet been signed, but funding for a pilot project was approved in the 2024 budget of the IOC and preparations are underway.

WHEREAS, The Project will address the system wide oscillation events. In addition, it will aid in the mitigation of future risk of disruptive events, as well as support reliable and safe operation of a future low carbon Railbelt electric grid with high levels of renewable energy flowing end to end between Interior Alaska and the Kenai Peninsula.

WHEREAS, Benefits from the Project also include early detection and identification of instability, assistance with grid planning, and improved system models validated by continuous empirical data, leading to a more sustainable and hardened grid, among other things.

WHEREAS, attached and incorporated herein by this reference is Exhibit 1, the Application pursuant to the Bipartisan Infrastructure Law – Section 40101(d).

WHEREAS, HEA has agreed to fund a portion of the cost match of this project based on Load Ratio Share with the remaining portion to be shared by the utilities based on the previous 5 year Intertie budget allocations excluding Administration and Capacity charges, that being GVEA at 89.13%, CEA at 0.00%, and MEA at 10.87%.

NOW, THEREFORE BE IT RESOLVED THAT, the foregoing recitals and Exhibit are incorporated herein by this reference.

BE IT FURTHER RESOLVED, the IMC is in support of the application for the Project to be filed by GVEA, CEA MEA and HEA.

BE IT FURTHER RESOLVED, so long as the final application is substantially similar to Exhibit 1, and to the extent necessary as authorized by the Board of Directors for each of the utilities applying for the Grant for the Project, the Chair is authorized to execute any additional documents necessary to prepare a complete application for the Project.

DATED at Anchorage Alaska, this _____ day of February, 2024.

2/15/2024 | 9:25:41 AM AKST

DocuSigned by:
Andrew Laughlin, PE
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Chair, Andrew Laughlin

Attest: DocuSigned by:
Bill Price
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Secretary, William Price

EXHIBIT 1
APPLICATION

Bipartisan Infrastructure Law – Section 40101(d) – PREVENTING OUTAGES AND ENHANCING THE RESILIENCE OF THE ELECTRIC GRID FORMULA GRANTS – APPLICATION FORM

Application Instructions

Applications for the Preventing outages and enhancing the resilience of the electric grid formula grants program will be accepted from **January 2nd, 2024 to February 16th, 2024**. To apply, please complete the following application form in its entirety and enclose the required following supplemental supporting documents. *Use of additional space is permissible by attaching supplemental material.*

a) **Authorization Letter** from the eligible entity electing to submit an application, signed by an authorized representative of the entity
b) **Project budget** using DOE SF-424 Budget Justification Notebook
c) **Eligible Entity Request Form** (if applicable)
d) **Environmental Questionnaire** (NEPA)
e) **Resilience Project Subaward Notification Form**

Application Form

A. Sub-Recipient Information

Sub-Recipient Name:	CEA - GVEA - MEA - HEA		
Entity Type:	An electric grid operator	xx	Other ☐ *If "other", please describe:*
	An electric storage operator	xx	
	An electricity generator	xx	
	A transmission owner or operator; or a State owner of transmission or generation assets without a CPCN	xx	

	Any other relevant entity, as determined by the Secretary (of DOE) ☐	
Eligible Entity Point of Contact:	Name:	Keith Palchikoff
	Title:	Grid Modernization Manager
	Phone:	907-451-5640
	E-mail:	kepalchikoff@gvea.com
	Address:	758 Illinois St., Fairbanks AK

B. Project Information

Project Title:	Alaska Railbelt Synchrophasor and Disturbance Reporting System	
	Engineering Design/Permits/Site Control Costs*:	$ 258,738
	Construction Costs†:	$ 1,760,986
	Administrative Expenses‡:	$ 140,800
	Other Miscellaneous Costs§:	$ 40,700
	1/3 Eligible Entity Cost Including In-Kind Match**:	$ $550,306
	Total Federal 40101(d) Cost: *(This is your grant request)*	$ 1,650,917
Description of Primary Service Area: *(counties/cities of eligible entity)*	The project covers all communities connected to the Alaska Railbelt transmission network - between Fairbanks and Homer. The main population centers are within the Fairbanks North Star Borough, Matanuska-Susitna Borough, city of Anchorage and Kenai Peninsula Borough,	

* Preliminary engineering shall not exceed 15% of overall construction costs and the project shall be constructed within the desired 5-year period of performance. Provide a line-item level of detail for costs if available.
† Provide a line-item level of detail if available.
‡ Provide a line-item level of detail if available.
§ Provide a line-item level of detail if available.
** Provide anticipated cash and in-kind match values if applicable.

Eligible entities if a joint application:		
Proposed electric grid service provided: *(check all that apply)* Other: ☐	Weatherization technologies and equipment	☐
	Fire-resistant technologies and fire prevention systems	☐
	Monitoring and control technologies	☒ Yes
	Undergrounding of electrical equipment	☐
	Utility pole management	☐
	Relocation of power lines or the reconductoring of power lines with low-sag, advanced conductors	☐
	Vegetation and fuel load management	☐
	The use or construction of "distributed energy sources" ("DERs") for enhancing system adaptive capacity during disruptive events, including: • Microgrids; and • Battery storage subcomponents	☐
	Adaptive protection technologies	☒ Yes
	Advanced modeling technologies	☒ Yes
	Hardening of power lines, facilities, substations, of other systems; and	☐
	Replacement of old overhead conductors and underground cables.	☐

C. Project Narrative

1. Project Description: Required but not scored

This project will increase the resiliency of the Alaska Railbelt transmission system through construction of a centralized, state of the art, synchrophasor data collection network for unified wide area monitoring, disruptive event reporting and analysis and stable operation of higher penetrations of inverter based resources.

The project is a partnership of four Railbelt utilities - GVEA, CEA, MEA and HEA. Each will construct or supplement an individual phasor data concentrator (PDC) system at their utility headquarters to collect and store synchrophasor data from phasor measurement units (PMU) at Railbelt transmission substations. The data from these four regional PDC systems will be shared in real time between themselves and with a central system hosted in a secure data center.

The central system will have software applications for advanced modeling, stability analysis and disturbance reporting. Grid operators and engineers at each utility will have concurrent access to a unified set of wide area visualizations and alerts.

The system will improve compliance with current Alaska reliability standards and help inform grid planners and reliability organizations with future updates to the standards.

The figures on the following pages illustrate the area covered by the system, the data collection topology and coordinated project implementation and operation plan. Substation PMUs will be added or upgraded as needed.

Background:

Railbelt wide disruptive oscillation events occurred between 2018 and 2021. Multiple studies and investigations were performed to identify the cause. Recommendations were made to increase the use of power system stabilizers / power system dampeners and to improve the accuracy of Railbelt planning models.

To improve the ongoing Railbelt oscillation remediation effort, a sub-committee of the Alaska Intertie Operating Committee (IOC) developed a plan for a communal system to stream, store and analyze synchrophasor data from high speed data recorders (PMU) at 12 key Railbelt substations. The PMU data recorders are part of network of approximately $2 million of underutilized recorders installed at 45 transmission substations across the Railbelt transmission system. For the past 20 years regional synchrophasor data networks have successfully been used throughout the Continental US electric grid for oscillation detection, source location and situational awareness of transmission system stability. In Alaska, CEA uses synchrophasor data to monitor areas of the South Central transmission network however the overall Railbelt does not have a coordinated and centralized system.

In October 2022, a formal request for proposals was issued for a turn-key synchrophasor system and advertised during a public presentation at the November NWPPA E&O Conference in Anchorage. Four proposals were received, reviewed and ranked and Pasadena, California based Electric Power Group (EPG) was chosen. EPG synchrophasor and disturbance reporting software applications are used by CAISO, PJM, ERCOT, TVA, NYISO, NERC and other regional reliability entities.

A contract with EPG has not yet been signed. Funding for a pilot project was approved in the 2024 budget of the Intertie Operating Committee and preparations are underway.

The system built with this project will provide two categories of capabilities -

1) Real time Applications for Situation Awareness of the Bulk Electric System:

Oscillation Detection
Intertie Phase Angle Monitoring for Power Transfer Stability Monitoring
Frequency Event Detection
Voltage Stability Monitoring
Railbelt Wide Situational Awareness
Immediate Access to a Detailed Disturbance Report after a Disruptive Event
State Estimation

2) Study Mode Applications -

Regulatory / Reliability / Renewable Plant Interconnection Compliance
Black Start / Contingency Response Training
Transmission System Model Validation and Accuracy Improvements
Power Plant Machine Model Validation and Accuracy Improvements
Post Disturbance Event Analysis and Forensics
Operator Training
Oscillation Mitigation Planning and Validation of Improvements

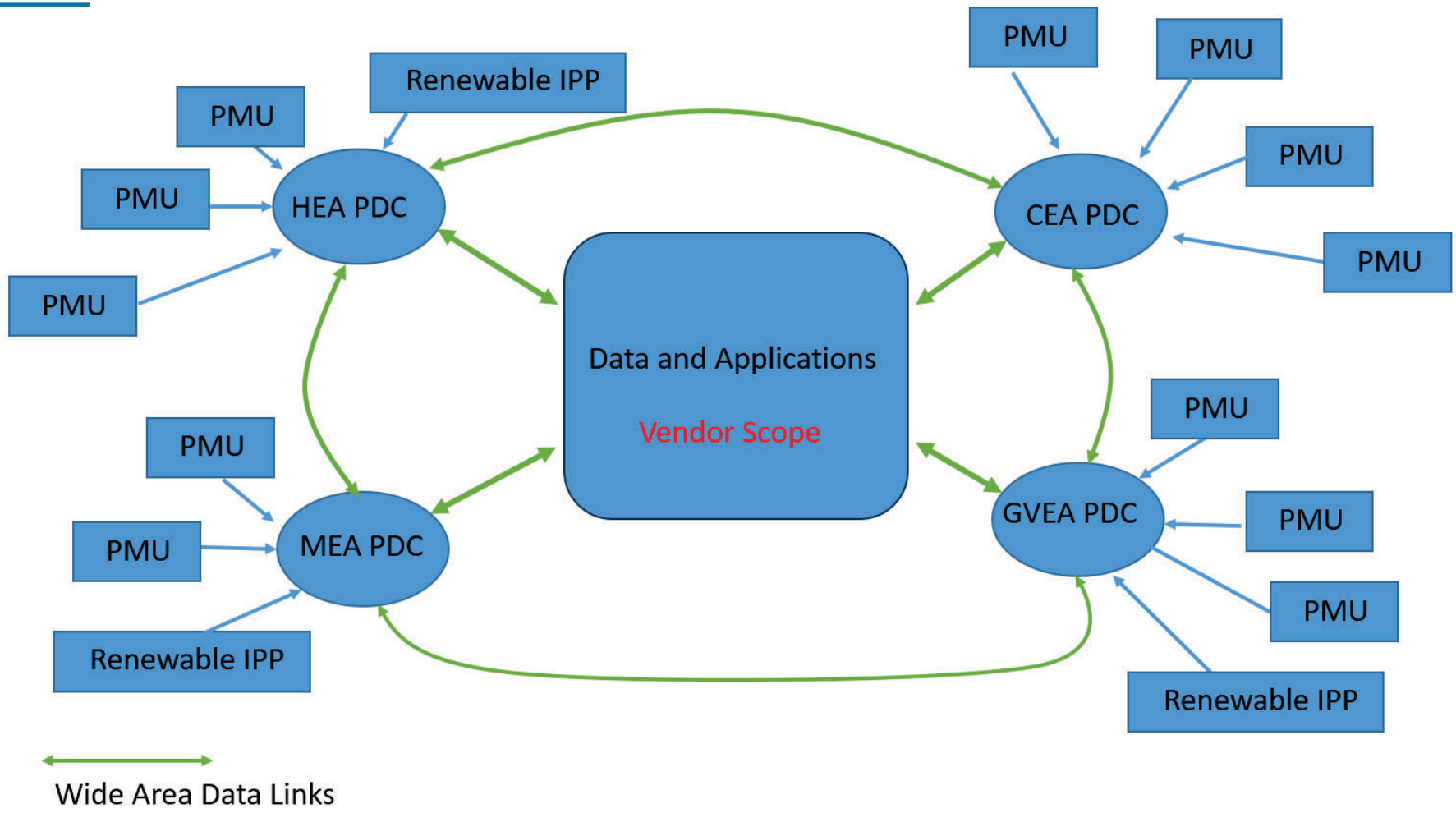
Project Cost:

The project will cost approximately $2 million spread over five years. The table below is an example of expenditures each year. Depending on the project work flow, the amounts could shift between years. Over the five year project schedule, the four Railbelt utilities will contribute, on average, $125,278 each of internal labor (in-kind match). The combined cash and in-kind labor represent 1/3 of the grant amount. The letter of support from the IMC states the four Railbelt utilities are committed to providing the match amount.

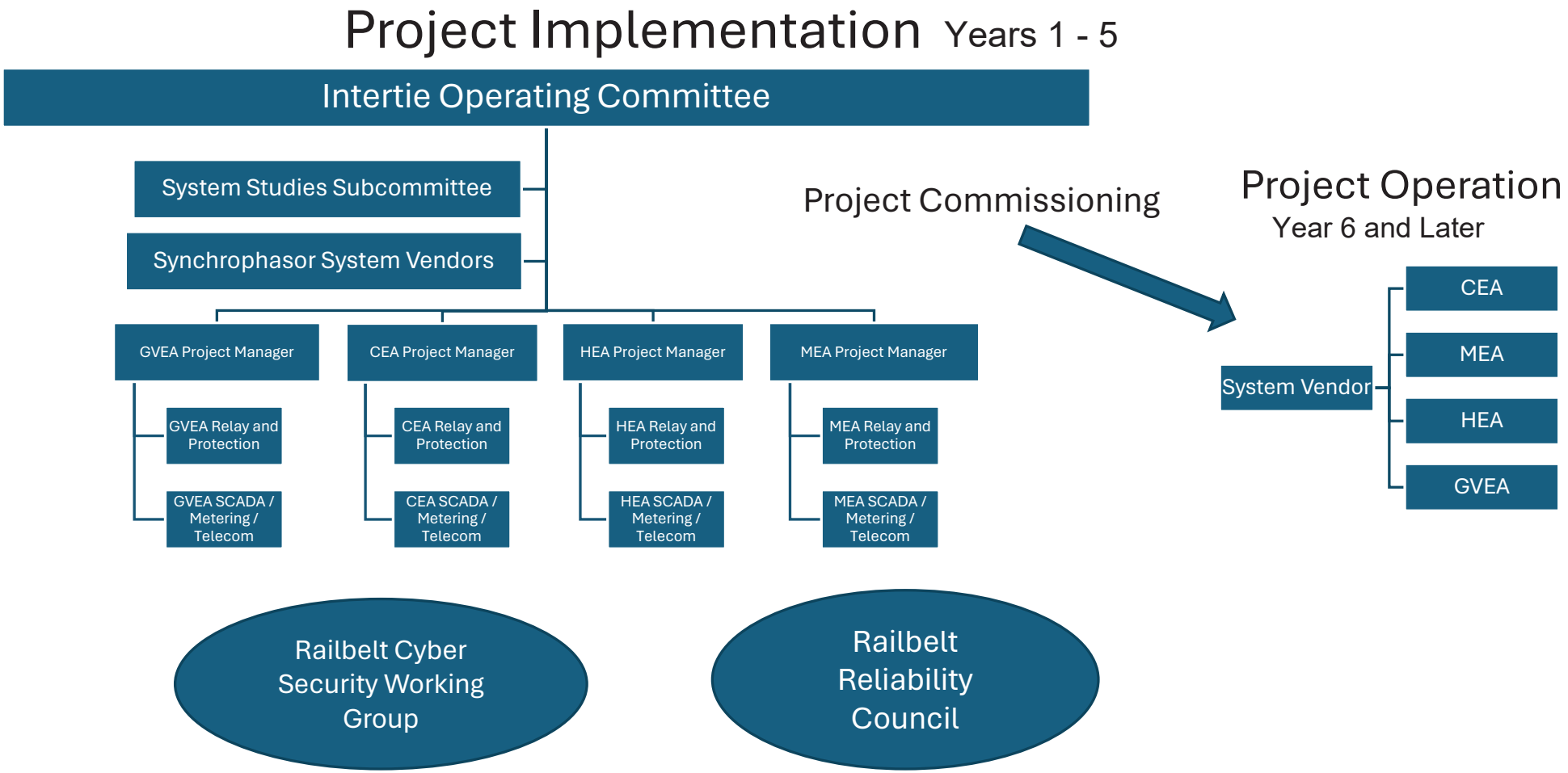
Five Year Average Project Expenditures by Year

Year	Project Cost	Railbelt Utilities Combined Cash Match	Railbelt Utilities - In Kind Contribution	Grant Contribution
1	$440,245	$9,839	$100,222	$330,183
2	$440,245	$9,839	$100,222	$330,183
3	$440,245	$9,839	$100,222	$330,183
4	$440,245	$9,839	$100,222	$330,183
5	$440,245	$9,839	$100,222	$330,183
Sub-Totals	$2,201,223	$49,194	$501,112	$1,650,917
Grant Amount	$1,650,917			
Utility Match	$550,306			
In-Kind Per Utility	$125,278			
Cash per Utility	$12,298			

Synchrophasor Topology



Roles and Responsibilities



2. Population Impacted: 30% or up to 30 points

- Please provide a description of total population served by the proposed project (no description = 0 points, less than 20,000 served = 3 points, each additional 10,000 served = 3 points with a maximum of 15 points possible).
- Please provide a description of how the proposed project will serve one or more census tracts defined as a disadvantaged community (no description = 0 points, each census tract is worth 3 points with a maximum of 15 points possible).
- Disadvantaged communities reporting tool

Improved resiliency of the interconnected Alaska Railbelt transmission network will benefit a population size of approximately 550,000. The main population centers reside within the:

Fairbanks North Star Borough, population 95,655
Matanuska-Susitna Borough, population 107,081
Municipality of Anchorage, population 287,145
Kenai Peninsula Borough, population 58,789

The Alaska Railbelt has many disadvantaged communities (DAC). Five of these, and their census track identification numbers, are listed below.

Nenana, Tract 02290000200 ;

Fairbanks (two census tracks), 02090000300, 0209000100 ;

Houston, 02170000401 ;

Big Lake, 0217000501

In addition - Municipality of Anchorage, 10 or more DAC census tracts

A more resilient and efficient Railbelt transmission network will positively impact DAC burdens by:

Reducing disruptive events
• Reducing the cost of electricity in the identified DACs
• Improving air quality via reduction of oil-fired power generation
• Providing jobs and training opportunities in surrounding DACs
• Increasing clean energy resilience state-wide and in surrounding DACS
• Increasing diversity in the workforce
• Reducing precursor emissions in an Environmental Protection Agency designated Serious Non-Attainment Area (Fairbanks)

- **Risk Reduction/Resilience Effectiveness: 20% or up to 20 points**
- Please describe how the project will reduce the current risk of disruptive events (an event in which operations of the electric grid are disrupted, preventatively shut off, or cannot operate safely due to capacity constraints, redundancy and/or equipment failure, etc. (not at all = 0 points, minimally = up to 3 points, partially = up to 6 points, mostly = up to 9 points, entirely = up to 12 points, and exceeds = up to 15 points).
- A 5 point bonus will be applied to projects which improve or enhance the resilience of transmission lines or assets of 69kV and above.

The synchrophasor system project will reduce the current risk of disruptive events and enhance the resilience of the Railbelt transmission network which operates at 69kV and above. The system will provide:

More informative, timely and accessible analysis of disruptive events allowing for informed application of corrective measures / reliable operating practices;

Pre-emptive detection, identification and source location of Railbelt oscillations. System operators can take action to isolate the source and prevent a disruptive event;

Coordinated operation between regional balancing authorities;

Dynamic calculation of system inertia to ensure adequacy of contingency reserves for primary frequency response.

Since this project is is for resiliency to the bulk electric system (BES), instead of using the IEEE distribution system reliability indices SAIDI, SAIFI, CAIFI to quantify an estimated reduction in disruptive events, an example is provided for the type of disruptive events this project will help prevent and improvements to compliance with the Alaska Reliability Standards.

Adequate reserve energy is needed for primary frequency response following a contingency event. Without adequate generation available for primary frequency response, the islanded Alaska grid experiences a rapid frequency decay and widespread load shedding.

The synchrophasor system will alert system operators of low or changing system inertia and need for additional fast spinning reserves. It will also provide detailed reports documenting the primary frequency response of each on-line generator. This analysis will facilitate improvement to dispatching practices to prevent under frequency events.

The synchrophasor system will provide the analysis and documentation for compliance with Railbelt Reliability modeling (MOD) and balancing (BAL) Standards, including the upcoming Primary Frequency Response policy.

The synchrophasor system is for the Railbelt transmission system which operates at 69 kV and above.

3. Extreme Weather, Wildfire, or Natural Disaster Event Adaptation: 15% or up to 15 points

- Please described how the proposed project would mitigate the future risk of disruptive events whereby operations or the electric grid are disrupted, preventatively shut off, or cannot operate safely due to extreme weather, wildfire, or natural disaster. Criterion score should be based on a qualitative assessment of whether the narrative includes details regarding how the project will reduce future disruptive events caused by extreme weather, wildfire, or natural disaster (qualitative assessment; not at all = 0 points, minimally = up to 3 points, partially = up to 6 points, mostly = up to 9 points, entirely = up to 12 points, and exceeds = up to 15 points).

This project will mitigate the future risk of disruptive events and support reliable and safe operation of a future low carbon Railbelt electric grid with high levels of renewable energy flowing end to end between Interior Alaska and the Kenai Peninsula.

NERC, regional reliability entities in the Continental US and utilities for isolated / islanded electric grids (Hawaii) report instability and disruptive events caused by high penetration of inverter based resources. Reference listed on last page of this application. Future extreme weather, combined with high penetration of renewables, could cause even more oscillatory disruptive events. The synchrophasor system will assist with detecting and alerting system operators and facilitate preventative actions.

The Alaska Railbelt is planning for a lower carbon future through increased integration and reliance on inverter based resources. A recent study from the Alaska Center for Energy and Power (ACEP) envisions the Railbelt grid powered by 100% renewable energy by 2050.

Synchrophasor data, combined with other variations of higher frequency measurements, will provide early detection and identification of instability. This will allow system operators to notify plant personnel or take corrective action to prevent a disruptive event.

Synchrophasor system applications will provide estimates of system strength (short circuit current), inertia, voltage stability and IBR Ride Through Capability - key attributes of the bulk electric system impacted by inverter based resources. When these attributes shift outside the expected ranges, the SCADA and EMS systems, used by the regional balancing authorities, can receive alerts directly from the synchrophasor system.

Grid planning and operations engineers will benefit from improved system models validated by continuous empirical data sampled at a high frequency.

The performance of the system and ability to reduce disruptive events will be measured and documented with ongoing assessments.

During and following commissioning, a recurring Key Performance Indicator (KPI) report will quantify the system value. This report will support the impact reporting for the DOE resiliency grant.

Improvement to Railbelt Real Time Operation

1. Synchrophasor system availability / up time – how reliable is the software system
2. Number of Railbelt disturbance events captured, reported to designated recipients within xx minutes with root cause analysis
3. Number of Railbelt stability / oscillation alarms reported and acted upon by system dispatchers.
4. Number of Railbelt oscillation sources detected.
5. Changes to Alaska Intertie capacity utilization due to real time stability reporting
6. Changes to Railbelt spinning reserve requirements due to inertia calculation

Improvements to Railbelt Engineering and Reliability Analysis

1. Number of PSS/E model checks and corrections
2. Number of Railbelt reliability standard compliance efforts – e.g... machine model validation reports / updated performed
3. Railbelt oscillation analysis report completed with recommendations for improvements, if needed.
4. Railbelt reserves performance analysis, inertia analysis and options for adjusting / optimizing reserve requirements.

4. Data Sources: 5% or up to 5 points

- Please provide a description of where the project is documented in a data-driven planning document and/or has been identified as a provider priority via a board priority/resolution related to system resiliency, and supporting documentation is referenced and/or the location of any supporting documentation is referenced and/or the location of any supporting data or narratives is provided in a linked below (not included = 0 points, included = 2 points).
- The application should reference which climate change model substantiates predictions to the changes of future physical environments including impacts to the safety and reliability of providing energy to utility customers (reference excluded = 0 points, reference included = 3 points).

Since 2022, the Railbelt synchrophasor project has been identified in Railbelt planning documents.

The 2022 / 2023 and 2023 / 2024 budgets for the Intertie Management Committee (IMC) included funding for a synchrophasor system pilot project. Approval of these synchrophasor project budgets were based an extensive data-driven research into solutions for improving resilience to inter-area oscillations. Various reports and cost/benefit evaluations were presented to the Intertie Operating Committee (IOC) for recommendation to the IMC.

These report and investigations include;

Synchrophasor System Memorandum Feb27_2023.pdf - recommendation to the IOC for a turn-key project contract with Electric Power Group to provide a synchrophasor system. Project and contract was deferred to 2024 budget.

Synchrophasor ROI Feb15_2023.xlsx - return on investment analysis of pursuing a synchrophasor project. Contains a list of benefits and annual value.

Analysis of Low Frequency Oscillations in Alaska Railbelt System, Siemens PTI, May 2020

Budget planning and justification memos, Intertie Management Committee, 2023 and 2024

Climate Model:

https://uaf-snap.org/

https://arcticeds.org/report/community/AK382#results - GFDL-CM3 RCP 4.5, 6.0 and 8.5 (NOAA coupled climate model)

5. Implementation Measures: 15% or up to 15 points

The application should include a detailed project schedule that includes design, permits, site control, and construction timeframe breakouts.

- The application schedule should indicate whether the project will go to construction within the desired 5-year period of performance. (Construction timeframe not addressed = 0 points, construction is not proposed within the 5-year period of performance = 0 points, construction is proposed within the 5-year period of performance = up to 2 points).
- The application schedule should include an appropriate level of detail and proposed timeframes should be adequate and reasonable, including project staff experience and availability of staff time during the proposed project period (details and timeframes are not included = 0 points, schedule details and proposed timeframes are minimally addressed = up to 3 points, schedule details and proposed timeframes are adequate and reasonable = up to 5 points).
- The application should include a reasonably specific and/or detailed explanation of the extent to which an eligible entity plans to utilize project labor agreements, local hire agreements, and/or has or will develop a plan to attract, train, and retain a local workforce including minority/women owned businesses (explanation excluded = 0 points, specific/detailed explanation included = up to 5 points).

This project will start and complete within five years of the grant award. Refer to the detailed project schedule included with this application.

The project consists of three phases.

Phase 1 - April 2, 2024 through November 20, 2025

a. Utilities, with assistance from EPG, will complete setup or modification of local phasor data concentrators
b. Setup and commissioning of secure central server with software applications
c. Setup and commissioning of secure communication data links between utilities and central system.

Phase 2 - March 2, 2026 through June 15, 2028

a. Add PMUs as needed.
b. Commission or tune remaining software applications not completed during initial phase

Phase 3 - June 16, 2028 through April 27, 2029

a. Add PMUs as needed.
b. Commission and tune applications for improved monitoring and stability assessment of renewable energy projects (Inverter Based Resources).

The Railbelt Synchrophasor and Event Reporting project will provide an overall economic benefit, increase reliability, and facilitate development and operation of new clean energy projects across the Alaska Railbelt. The project will utilize the local work force of each of the Railbelt utilities and specialty services from synchrophasor system contractors. Within each utility, the job clarifications expected to participate in this project include - engineers, system dispatchers, electricians, IT staff, project accountants, drafting, GIS technicians and various administrative staff.

The project will help the Alaska Railbelt utilities attract, train and retain engineering and technical staff by providing exposure and experience with software tools and technology in wide use in other regions of the US electric grid and not in wide use in Alaska.

The Workforce:

Project work will performed under collective bargaining agreements with the International Brotherhood of Electrical Workers (IBEW) and the International Union of Operating Engineers (IUOE). Each utility has collective bargaining agreements with the respective unions and personnel are classified differently at each utility.

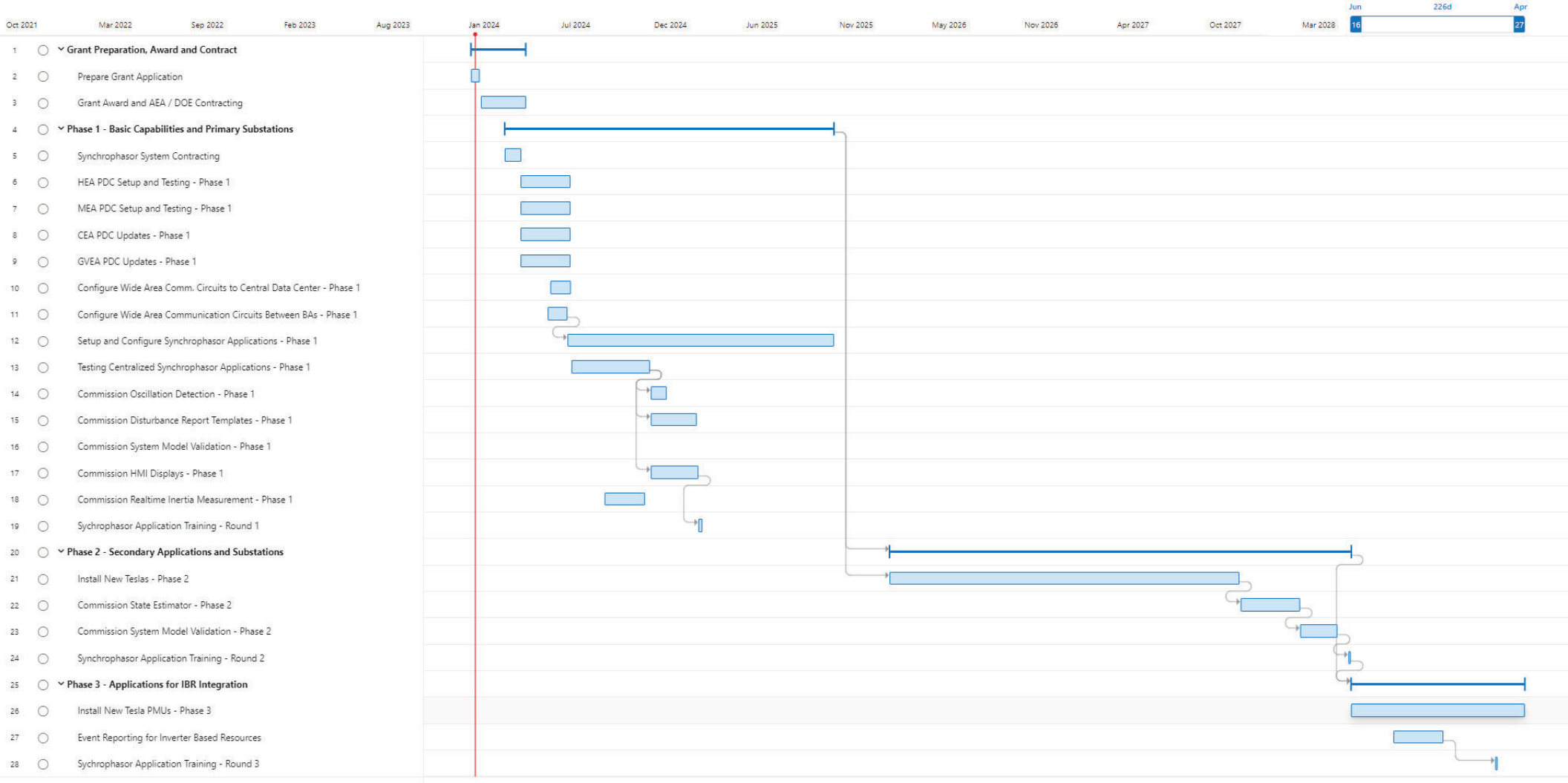
Wages:

This project will support the local economy through the recognition of organized labor and the provision of prevailing wages. The Railbelt utilities work with workforce development partners and labor unions to form agreements that protect workers' rights and pay them fair, equitable wages for the work being performed.

Alaska Railbelt Synchrophasor and Disturbance Reporting System - Copy

Feb 1, 2024 - Apr 27, 2029

Grid | Board | Timeline | Charts | People | Goals | ···



6. Community Engagement: 5% or up to 5 points

- The application should reference any utility public outreach plan for electronic and/or in-person stakeholder and public outreach associated with identification and development of the project (reference excluded = 0 points, reference included = up to 5 points).

A one hour public presentation of this project was delivered at the November 2022 Northwest Power Producers Association (NWPPA) annual conference in Anchorage. The conference attendees were from utilities throughout Alaska and other stakeholders interested in the future of Alaska's electric grid. A copy of the presentation is attached for reference.

Future outreach to the public and other stakeholders include:

1) In-person meetings with the Member Advisory Committees (MAC) of GVEA and CEA;
The MAC consists of utility customers selected to represent the customer base and provide input / feedback to utility planning / project efforts.

2) A project update presentation at the 2024 NWPPA Conference and other Alaska utility industry groups;

3) Public presentation, discussion and comments during meetings of the Intertie Management Committee, Intertie Operating Committee and Bradley Lake Project Management Committee ;

4) Public presentation and comment period for the Alaska state budget (if cash match is included in Intertie budget versus direct contributions from each utility);

5) Presentation and discussion during meetings of the MEA, CEA, HEA and GVEA board of directors. These meetings are open to utility member-customers which is the majority of the Alaska population.

7. Leveraging Partnerships: 10% or up to 10 points

Please include letters of support from partner organizations (letters of support excluded = 0 points, reference included = 2 points).

Please include a description of how the applicant will provide matching funds (e.g., in-kind and/or cash contributions) that are equal to 1/3 or more of the federal share of the project cost (non-federal matching funds equal to 1/3 of federal share = 4 points, every 5% greater than 1/3 of federal share = 1 additional point with a maximum of 8 points possible).

This project and grant application is supported by the Intertie Management Committee (IMC) and the Intertie Operating Committee (IOC) whose members include GVEA, MEA, CEA. The project is also supported by HEA. Letters of support both from the IMC and from HEA are included with this application.

Matching funds, equal to one-third of the grant amount, will be contributed together by the IMC member utilities and HEA. This is stated in the letter of support from the IMC, included with this application.

The total project cost and percentage of matching funds are summarized in Section B (page 2) of this application. The matching funds consist of 85% in-kind labor and 15% cash contributions. A complete and detailed list of all project costs and funding source is in the document "Synchrophasor System Cost Estimate.xlsx" included with this application. The four Railbelt utilities will agree on a method to split the in-kind labor and cash match.

LIST OF ADDITIONAL DOCUMENTATION SUBMITTED FOR CONSIDERATION
In the space below, please provide a list of additional information submitted for consideration.

Authorization Letter - IMC Letter of Support and Committment of Matching Funds.pdf
EPG 2023 Year in Reveiw.pdf
EPG Hosted Synchrophasor Solution for Alaska Railbet Budgetary Quote.pdf
HEA Letter of Support for Grid Resilience Formula Grant Application Synchrophasor Project.pdf
New Synchrophasor Systems -DOE.pdf
Synchrophasor Project 40101(d) Budget Justification Notebook SF424(1).xlsx
Synchrophasor Resilience Project Subaward Subcontract Notification Form.pdf
Synchrophasor System 40101(d) Grant Application - NEPA Environmental Questionnaire.pdf
Synchrophasor System Cost Estimate Details.xlsx

The undersigned certifies that this application for a resilience grant is truthful and correct, and that the applicant is in compliance with, and will continue to comply with, all federal and state laws including existing credit and federal tax obligations and that they can indeed commit the entity to these obligations.	
Print Name	Keith Palchikoff
Signature	Keith Palchikoff
Title	Grid Modernization Manager
Date	2/16/2024

Submission

Completed applications must be submitted by email or physical delivered to AEA by 4:00PM on February 16th, 2024.

Applicants may either submit their applications by (1) attaching their application and supporting documents to an email and sending it to the AEA grants coordinator, or (2) by having their applications physically delivered to AEA.

Applicants choosing to submit their application via email are asked to address the email to grants@akenergyauthority.org with the subject line of "IIJA 40101(D) Subaward Application". Applicants are asked to submit the application and applicable documentation in searchable PDF or other word searchable electronic format. Applicants using this method are encouraged to use delivery receipt and read receipt. It should be noted that AEA's email system limits attachments to 40MB and will not accept .zip files or executables.

Applicants choosing to submit their application via physical delivery method are asked to submit one (1) electronic version on an electronic storage device (i.e., CD/DVD or thumb drive) in a searchable PDF or other word searchable electronic format.

Additionally, if a hard copy of the completed application is submitted, AEA requires that the hard copy be double-sided with minimal binding, including appendices that can be duplicated. Physical delivery of either of the above must be in a sealed envelope(s) clearly labeled:

From: Applicant Return Address

To: Alaska Energy Authority
Renewable Energy Fund Grant Application
813 West Northern Lights Blvd
Anchorage, AK 99503

Any questions or concerns about filing an application should be directed to:

Grants Coordinator
Alaska Energy Authority
Direct Phone: (907) 771-3081
AEA Main Phone: (907) 771-3000
Email: grants@akenergyauthority.org