

ALASKA ENERGY AUTHORITY

AEA OVERVIEW

Curtis W. Thayer
Executive Director

Southeast Conference Mid-Session
Summit and Transportation Symposium
February 1, 2023



Safe,
Reliable, and
Affordable
Energy
Solutions

Who We Are



Our Mission
Reduce the cost of
energy in Alaska.



Created in 1976 by the Alaska Legislature, the Alaska Energy Authority (AEA) is a public corporation of the State of Alaska governed by a board of directors with the mission to “reduce the cost of energy in Alaska.” AEA is the state's energy office and lead agency for statewide energy policy and program development.

What We Do

AEA's mission is to reduce the cost of energy in Alaska. To achieve this mission, AEA works to diversify Alaska's energy portfolio.



Railbelt Energy – AEA owns the Bradley Lake Hydroelectric Project, the Alaska Intertie, and the Sterling to Quartz Creek Transmission Line – all of which benefit Railbelt consumers by reducing the cost of power.



Alternative Energy and Energy Efficiency – AEA provides funding, technical assistance, and analysis on alternative energy technologies to benefit Alaskans. These include biomass, hydro, solar, wind, and others.



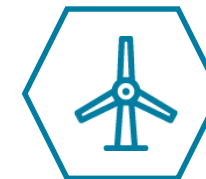
Power Cost Equalization (PCE) – PCE reduces the cost of electricity in rural Alaska for residential customers and community facilities, which helps ensure the sustainability of centralized power.



Grants and Loans – AEA provides loans to local utilities, local governments, and independent power producers for the construction or upgrade of power generation and other energy facilities.




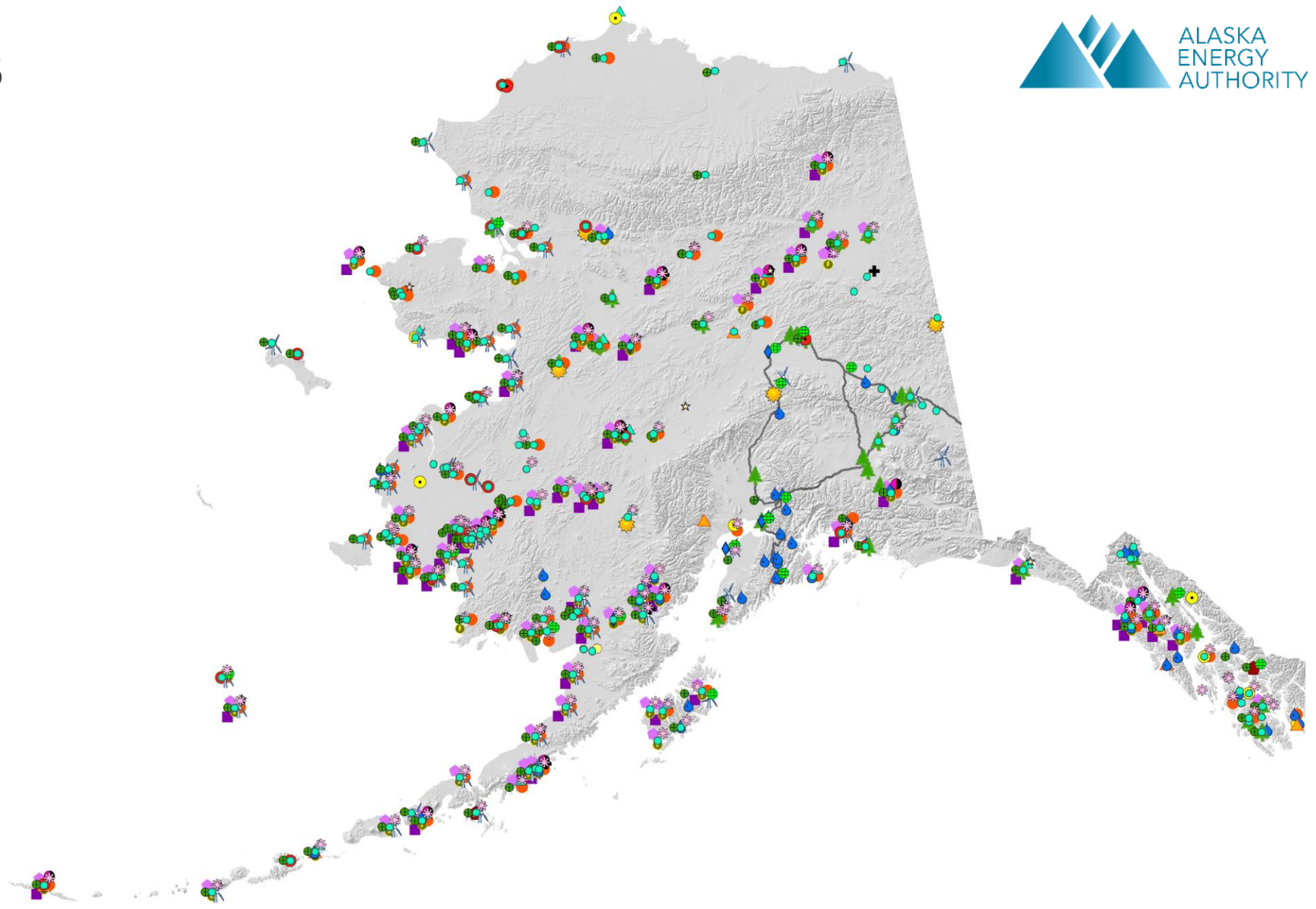
Rural Energy – AEA constructs bulk fuel tank farms, diesel powerhouses, and electrical distribution grids in rural villages. AEA supports the operation of these facilities through circuit rider and emergency response programs.



Energy Planning – In collaboration with local and regional partners, AEA provides economic and engineering analysis to plan the development of cost-effective energy infrastructure.

Active Projects and Services

-  Biomass/Biofuels
-  Bulk Fuel Upgrades
-  Circuit Rider Assistance
-  Diesel Emission Reduction Act
-  Electrical Emergency Response
-  Emerging Energy Technology Fund
-  Heat Pump
-  Heat Recovery
-  Hydroelectric
-  Maintenance and Improvement
-  Ocean/River
-  PCE Community
-  PCE Utility Clerk Training
-  Rural Power System Upgrade
-  Solar
-  Storage
-  Transmission
-  Utility Operator Training
-  Utility Technical Assistance
-  VEPP (Efficiency)
- Wind





CAPACITY

120MW

Bradley Lake generators are rated to produce up to 120 MW of power.

ENERGY

10%

Bradley Lake generates about 10 percent of the total annual electrical energy used by Railbelt electric utilities.

GENERATION COST PER KWH

\$0.04

From 1995 through 2020, the project averaged 392,000 MWh of energy production annually at \$0.04 per kWh.

Bradley Lake Hydroelectric Project

- Bradley Lake is Alaska's **largest source of renewable energy**. Energized in 1991, the project is situated 27-air miles northeast of Homer on the Kenai Peninsula.
- The 120 MW facility provides **low-cost energy to 550,000+** members on the Railbelt.
- Bradley Lake's **annual energy production** is ~10% of Railbelt electricity at 4.5 cents/kWh (or ~54,400 homes/year) and over \$20 million in savings per year to Railbelt utilities from Bradley Lake versus natural gas.
- The **Dixon Diversion Project** would expand Bradley Lake and generate electricity for 14,000-28,000 homes on the Railbelt every year.

Alaska Intertie

- Constructed in the mid-1980s, the Alaska Intertie is a 170 mile-long, 345 kilovolt (kV) transmission line from **Willow to Healy**.
- Operated by AEA and Railbelt utilities, within Railbelt system **the transmission line improves reliability**.
- Allows Golden Valley Electric Association (GVEA) to connect to and **benefit from lower cost power**.
- Between 2008 and 2021, the Intertie provided an average annual **cost savings of \$37 million to GVEA** customers.



Transmission Upgrades and Battery Storage

AEA and the Railbelt utilities closed on **\$166 million in bond financing** to improve the efficiency and deliverable capacity of power from the Bradley Lake Hydroelectric Project. The bonding comes at no additional cost to ratepayers or burden on the State treasury.



Upgrade transmission line between **Bradley Lake and Soldotna** Substation



Upgrade transmission line between **Soldotna Substation and Sterling** Substation



Upgrade transmission line between **Sterling Substation and Quartz Creek** Substation



Battery Energy Storage Systems for Grid Stabilization

These projects will reduce constraints on the Railbelt by improving the Kenai Peninsula's transmission capacity to export power from Bradley Lake — and allow for the integration of additional renewable energy generation.

Statewide Grid Resilience and Reliability IJA Formula Grant Program, 40101(d)



Per IJA section 40101(a)(1),⁸ a disruptive event is defined as “an event in which operations of the electric grid are disrupted, preventively shut off, or cannot operate safely due to extreme weather, wildfire, or a natural disaster.”

- These federal formula grant funds will provide **\$60 million** to Alaska over five years, including **\$22.2 Million** for the first year allocation, to catalyze projects that **increase grid resilience against disruptive events**.
- Resilience measures include but are not limited to:
 - Relocating or reconductoring powerlines
 - Improvements to make the grid resistant to extreme weather
 - Increasing fire resistant components
 - Integrating distributed energy resources like microgrids and energy storage
- Formula-based funding requires a **15% state match** and a **33% small utility match**.

State of Alaska Electric Vehicle (EV) Infrastructure Implementation Plan

AEA and the Alaska Department of Transportation & Public Facilities (DOT&PF), submitted their **State of Alaska EV Infrastructure Implementation Plan (The Plan)** to the United States Joint Office of Energy and Transportation, as required by the Infrastructure Investment and Jobs Act's (IIJA) NEVI Formula Program.

- On September 27, 2022, **The Plan was approved.**
- The announcement unlocks **\$19 million** to expand EV charging infrastructure in Alaska.
- Over the **next five years**, AEA anticipates receiving **\$52 million**. Funds will be received by DOT&PF and administered by AEA.
- On March 1, 2023, AEA will issue a **Request for Applications** for to site hosts compete for a share of Alaska's NEVI program funding.



State of Alaska Electric Vehicle Infrastructure Implementation Plan



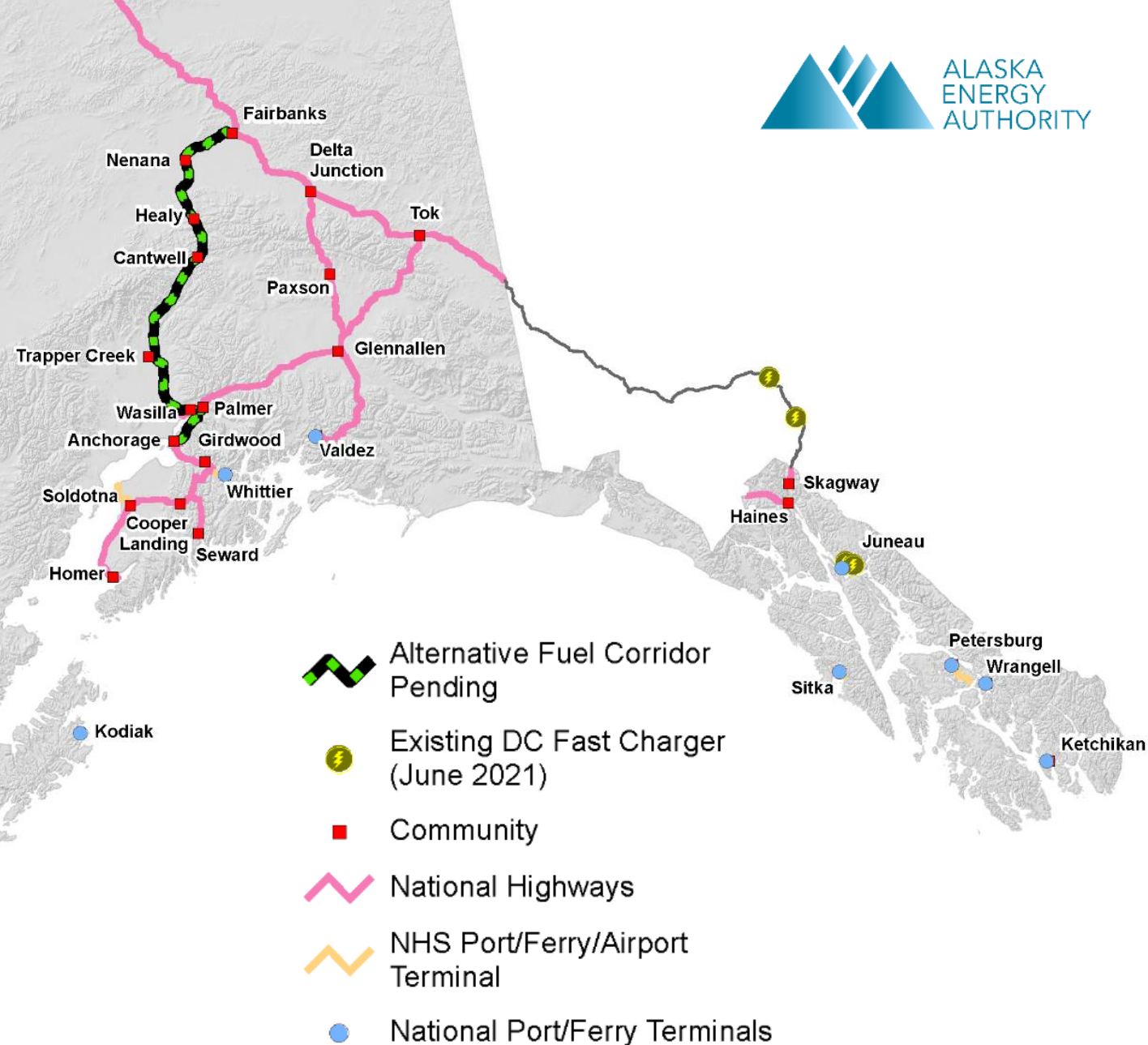
ALASKA
ENERGY
AUTHORITY



NEVI Requirements

Funding must be used to build out Alternative Fuel Corridors (AFCs) first

- Alaska currently has one AFC (pending)
- After AFC buildout, funding can be used elsewhere
- Charging infrastructure must be **DC fast-charging**
 - 4 Combined Charging System Connectors
 - >150 kW each
- Chargers must be located no more than **1 driving mile from AFC**
- Charging stations must be located no more than **50 miles** apart along designated AFC
- Match Requirements
 - Federal share: 80%
 - Private entity or other: 20%
- Justice40 Requirements



Other Energy Infrastructure Project Opportunities



- **Defense Community Infrastructure Pilot Program: Black Rapids Training Site – \$12.8 Million**
- **Alaska High Efficiency Home Rebate Program – \$37 Million**
- **Inflation Reduction Act Alaska Hope for Homes – \$37 Million**
- **IIJA: Energy Auditor Training – \$315,000 (Over Five Years)**
- **IIJA Competitive: Alaska Rural EVSE Deployment – \$2 Million**
- **IIJA Competitive: Energy Efficiency Revolving Loan Fund – \$4.5 Million**

Power Cost Equalization (PCE)

The PCE program was established in 1985 as one of the components of a statewide energy plan.



192

RURAL COMMUNITIES



91

ELECTRIC UTILITIES



81,700

ALASKANS



The cost of electricity for Alaska's rural residents is notably higher than for urban residents. PCE lowers the cost of electric service paid by rural residents. Ultimately ensuring the viability of rural utilities and the availability of reliable, centralized power.

750 kWh

RESIDENTIAL

Residential customers are eligible for PCE credit up to 750 kWhs per month.

70 kWh

PUBLIC FACILITIES

Community facilities can receive PCE credit for up to 70 kWhs per month multiplied by the number of residents in a community.

\$29M

FUNDS DISTRIBUTED

In Fiscal Year 2021, AEA disbursed \$29 million to rural electric utilities for the benefit of our rural communities.

Grid Resilience and Innovation Partnerships (GRIP)

To enhance the power system's resilience to extreme weather and climate change, the Grid Deployment Office is administering a \$10.5 billion GRIP program under the Bipartisan Infrastructure Law.



1) Railbelt Backbone Reconstruction Project – \$615 Million



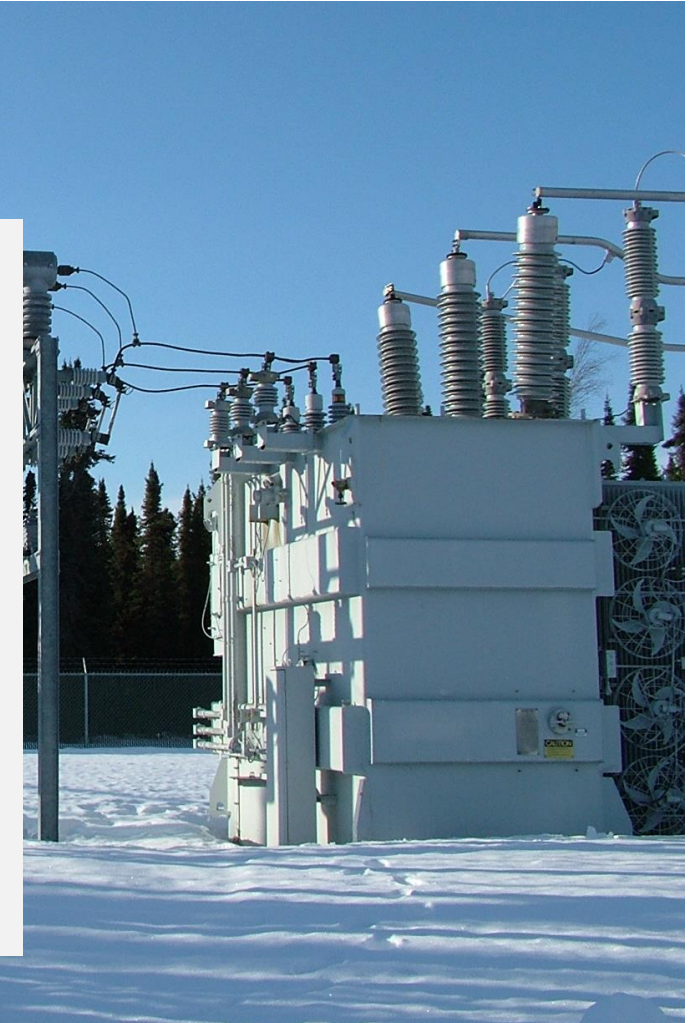
2) Battery Energy Storage/HVDC Coordinated Control – \$29.3 Million



3) Railbelt Innovation Resiliency Project) – \$298.6 Million



3) Rural Alaska Microgrid Transformation – \$250 Million



Rural Power Systems Upgrades and Bulk Fuel Upgrades

AEA and Federal Partners (Denali Commission)

Capital Request: State Match – \$10 Million
Federal Receipt Authority – \$25 Million

Rural Power Systems Upgrade



- ~197 eligible communities
- Active projects — 10 full and 13 Maintenance and Improvement / Diesel Emissions Reduction Act



Capital Request: State Match – \$5.5 Million
Federal Receipt Authority – \$7.5 Million

Bulk Fuel Upgrade



- ~400 rural bulk fuel facilities
- Active projects — 13 full and 22 Maintenance and Improvement



Renewable Energy Fund (REF) Grant Program

Established in 2008, REF provides grant funding (subject to Legislative approval) incentivizing the development of qualifying and competitively selected renewable energy projects. The program is designed to produce cost-effective renewable energy for heat and power to benefit Alaskans statewide.



STATEWIDE INVESTMENT

271 Grants Awarded
Totaling \$300 Million



ACTIVE PROJECTS

100 Projects in Operation
44 in Development



ROUND 13 AWARDS

11 Projects Awarded
\$4.75 Million Appropriated



ROUND 14 REVIEW

27 Applications
\$15 Million Requested

ROUND 15: 31 applications totaling request of \$33 Million

Power Project Fund (PPF) Loan Program

The PPF loan program qualifies applicants seeking low-interest loans for eligible power projects. PPF provides local utilities, local governments, or independent power producers an avenue to seek funding for the development, expansion, or upgrade of electric power facilities.



COMMUNITY BORROWING

\$27.2 Million in
Outstanding Loans



AVAILABLE CAPITAL

\$6.5 Million
Available for Lending



COMPETITIVE RATES

Current PPF Interest Rate
4.63% (as of Jan. 23, 2023)



FLEXIBLE FINANCING

Low-Cost Patient
Capital Revolving Loan

State Energy Security Plan (SESP)



Following approval of SESP by the Governor, the plan will be submitted to the Department of Energy to meet the requirements set out by the IJA for funding eligibility.

An **SESP** shall:

- (1)** address all energy sources and regulated and unregulated energy providers;
- (2)** provide a State energy profile, including an assessment of energy production, transmission, distribution, and end-use;
- (3)** address potential hazards to each energy sector or system, including—
 - physical threats and vulnerabilities; and
 - cybersecurity threats and vulnerabilities;
- (4)** provide a risk assessment of energy infrastructure and cross-sector interdependencies;
- (5)** provide a risk mitigation approach to enhance reliability and end-use resilience; and
- (6)** address
 - multi-State and regional coordination, planning, and response; and
 - coordination with Indian Tribes with respect to planning and response; and
 - to the extent practicable, encourage mutual assistance in cyber and physical response plans.

AEA provides
energy solutions
to meet the
unique needs of
Alaska's rural
and urban
communities.

Alaska Energy Authority

813 W Northern Lights Blvd.
Anchorage, AK 99503



Main: (907) 771-3000
Fax: (907) 771-3044



akenergyauthority.org



[@alaskaenergyauthority](https://www.facebook.com/alaskaenergyauthority)



[@alaskaenergyauthority](https://www.linkedin.com/company/alaskaenergyauthority)

