ALASKA ENERGY AUTHORITY

AEA OVERVIEW PRESENTATION

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Alaska Energy Security Task Force
May 9, 2023

ALASKA ENERGY AUTHORITY

Who We Are

Our Mission

Reduce the cost of energy in Alaska.

Created in 1976 by the Alaska State 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.

About AEA

AEA's mission is to reduce the cost of energy in Alaska. To achieve this mission, AEA strives to diversify Alaska's energy portfolio — increasing resiliency, reliability, and redundancy.

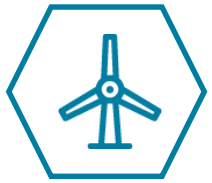
Railbelt Energy – AEA owns the Bradley Lake Hydroelectric Project, the Alaska Intertie, and the Sterling to Quartz Creek Transmission Line — all of which benefit Railbelt consumers by reducing the cost of power.

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.

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.

Renewable 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.

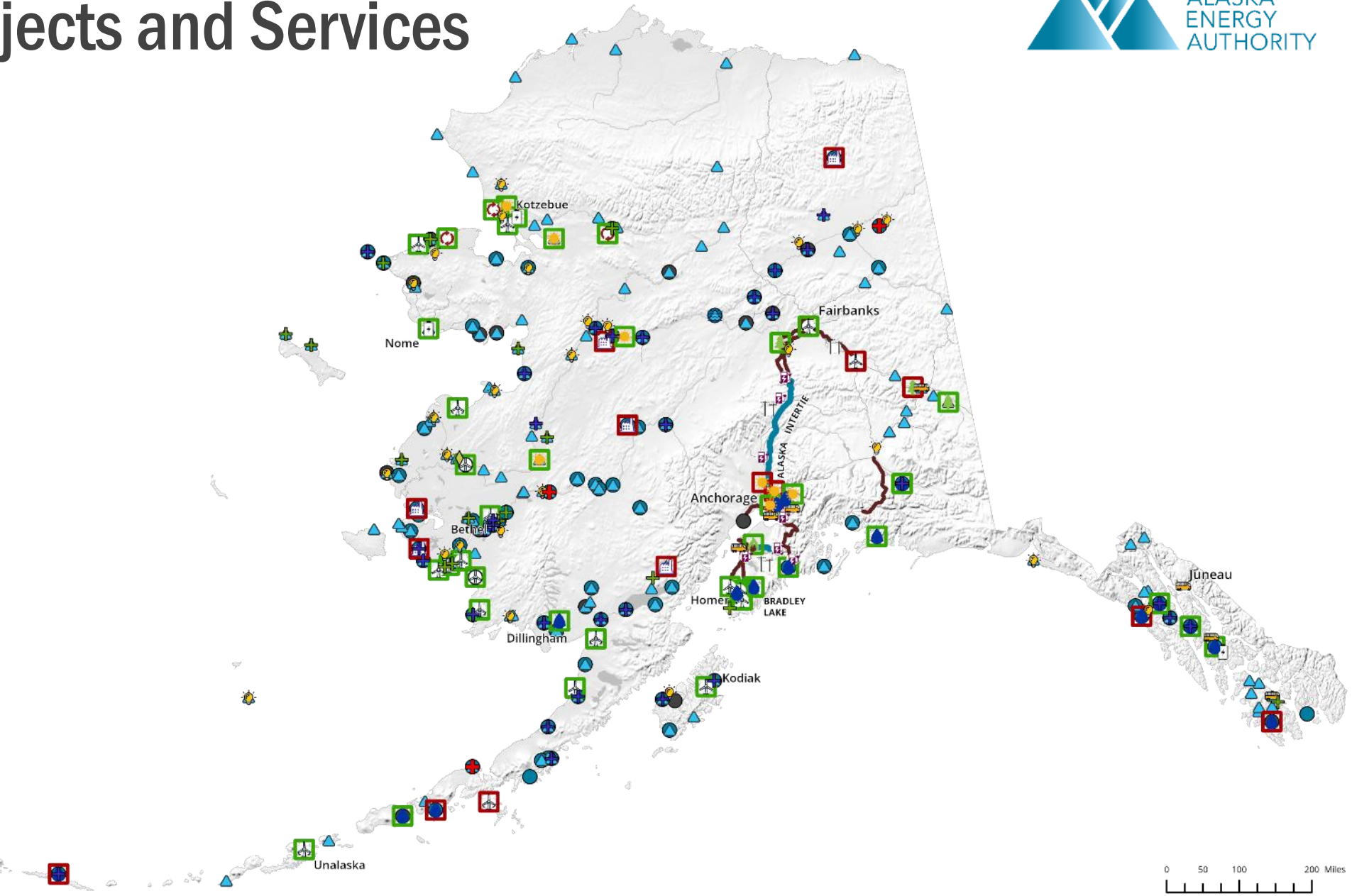
Grants and Loans – AEA provides loans to local utilities, local governments, and independent power producers for the construction or upgrade of power generation and other energy facilities.



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

AEA Active Projects and Services

- Rural Power System Upgrades (33)
- Bulk Fuel Upgrades (25)
- Village Energy Efficiency Program (27)
- Volkswagen Diesel Settlement Grants (7)
- Biogas (1)
- Biomass (4)
- Diesel (6)
- Emerging Energy Technology Fund (1)
- Electric Vehicles (9)
- Heat Recovery (3)
- Hydroelectric (18)
- Hydrokinetic (1)
- Solar (8)
- Storage (3)
- Transmission (3)
- Wind (21)
- Transmission Line owned by AEA
- Other Transmission Line
- Power Project Fund (16)
- Renewable Energy Fund (44)
- PCE Communities (193)
- Emergency Assistance (3)
- Circuit Rider Assistance (93)
- Utility Training (81)



URBAN ENERGY

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

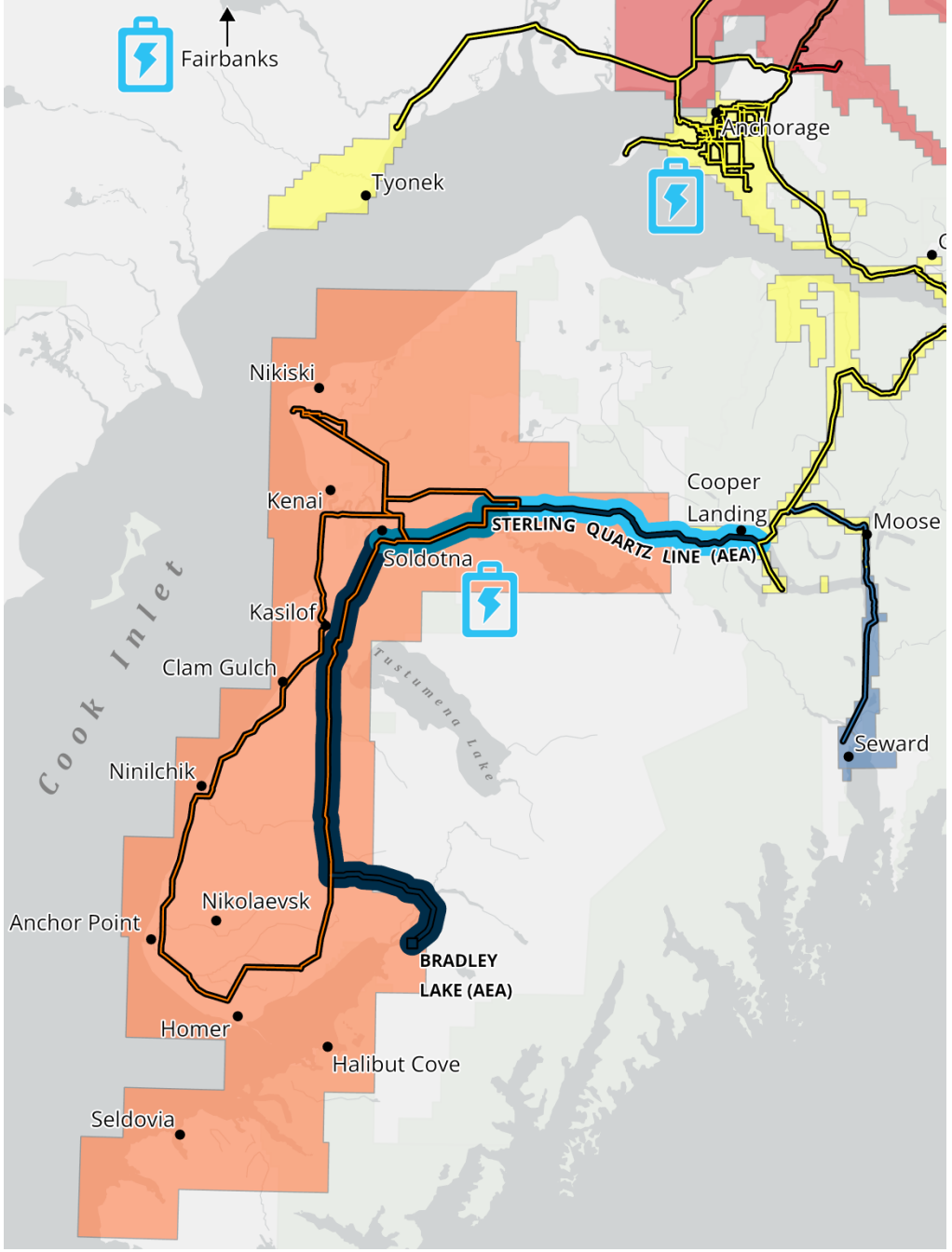
From 1995 through 2020, the project averaged 392,000 MWh of energy production annually at $0.04 per kWh.

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.
- AEA, in partnership with the Railbelt utilities, **is studying the Dixon Diversion Project** which would increase the annual energy production of Bradley Lake by 50% — or the equivalent of 14,000-28,000 homes.

BPMC

The Bradley Lake Hydroelectric Project is owned by AEA and managed by the Bradley Lake Project Management Committee (BPMC), which is comprised of a member from each of the five participating Railbelt utilities:
Chugach Electric Association,
Golden Valley Electric Association,
Homer Electric Association,
Matanuska Electric Association, and
Seward Electric System.



ALASKA ENERGY AUTHORITY

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.

Alaska Intertie

Constructed in the mid-1980s with $124 million in State of Alaska appropriations, there is no debt associated with the Alaska Intertie.

- AEA owns the **170-mile Alaska Intertie transmission line that runs between Willow and Healy**. The line operates at 138 kV (it was designed to operate at 345 kV) and includes 850 structures.
- A **vital section of the Railbelt transmission system**, the Intertie is the only link for transferring power between northern and southern utilities.
- The Intertie transmits power north into the Golden Valley Electric Association (GVEA) system and provides Interior customers with low-cost, reliable power — between 2008 and 2021, the Intertie **saved GVEA customers an average of $37 million annually**.
- The Intertie provides benefits to Southcentral customers as well through **cost savings and resilience to unexpected events**.

RURAL ENERGY

Power Cost Equalization (PCE)

AEA, along with the Regulatory Commission of Alaska, administers the PCE program, which serves remote communities that are largely reliant on diesel fuel for power generation.

193
RURAL COMMUNITIES

91
ELECTRIC UTILITIES

82,000
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.

$27.4M
FUNDS DISTRIBUTED
In Fiscal Year 2022, AEA disbursed $27.4 million for payment of PCE to rural electric utilities for the benefit of our rural communities.

Who is Eligible to Participate in PCE?

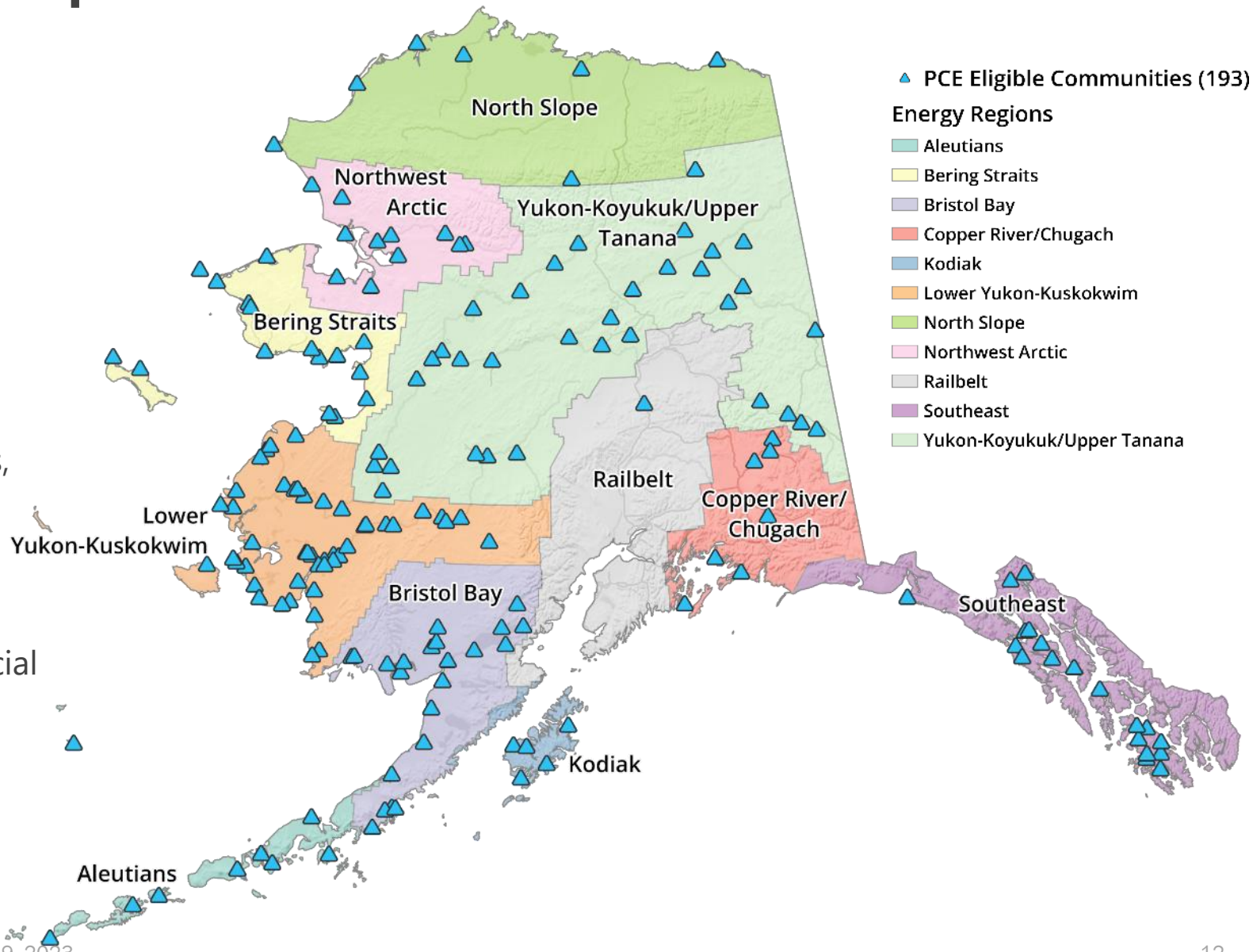
PCE eligibility is determined by the Regulatory Commission of Alaska in accordance with Alaska Statute 42.45.100-170.

Eligible customers include:

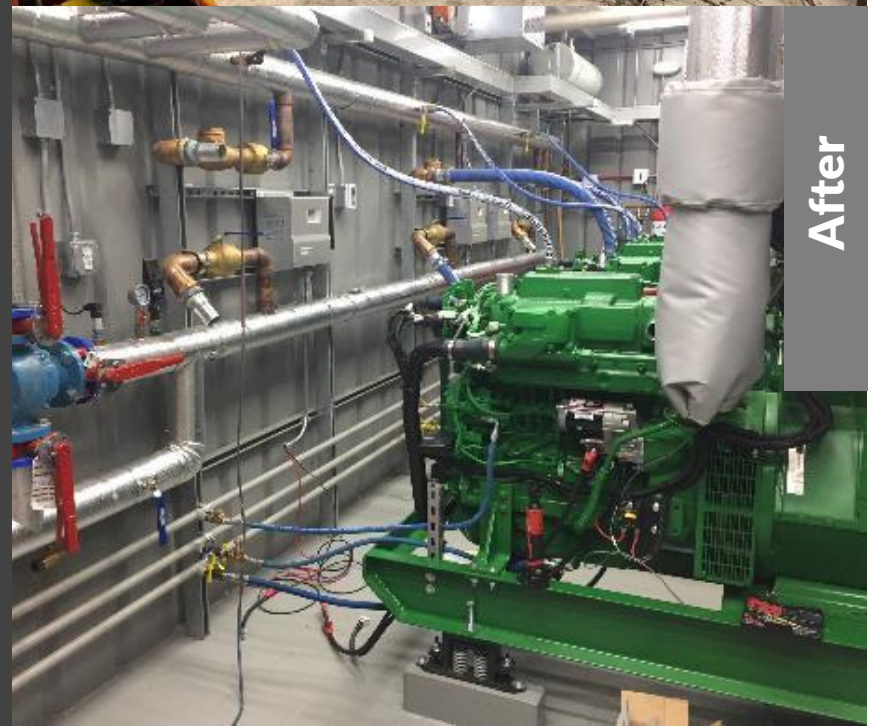
- Residential and community facilities (water, sewer, public lighting, and clinics, etc.)

Non-eligible customers include:

- State and federal facilities and commercial customers
- Any community with rates lower than the urban average (the PCE floor)



Rural Power System Upgrades



- ~197 communities eligible for Rural Power System Upgrade
- Goal — improve power system efficiency, safety, and reliability
- Aging infrastructure and Operation and Maintenance
- Active projects — 7 full and 16 Maintenance and Improvement/Diesel Emissions Reduction Act
- Deferred maintenance is $300 million

Bulk Fuel Upgrades

- ~400 rural bulk fuel facilities
- Goal — code compliant fuel storage facilities and prevention of spills and contamination
- Aging infrastructure, erosion, and catastrophic failure
- Active projects — 8 full and 18 Maintenance and Improvement; no funding for two years
- Leveraging Coast Guard regulatory efforts to capture BFU assessments to prioritize projects
- Deferred maintenance is $800 million

FINANCING TOOLS

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
$6.4 Million
Available for Lending

COMPETITIVE RATES
Current PPF Interest Rate
5.03% as of May 1, 2023

FLEXIBLE FINANCING
Low-Cost Financing Tailored
to Project and Borrower

Capital Request: General Fund - $7.5 Million

Renewable Energy Fund (REF)

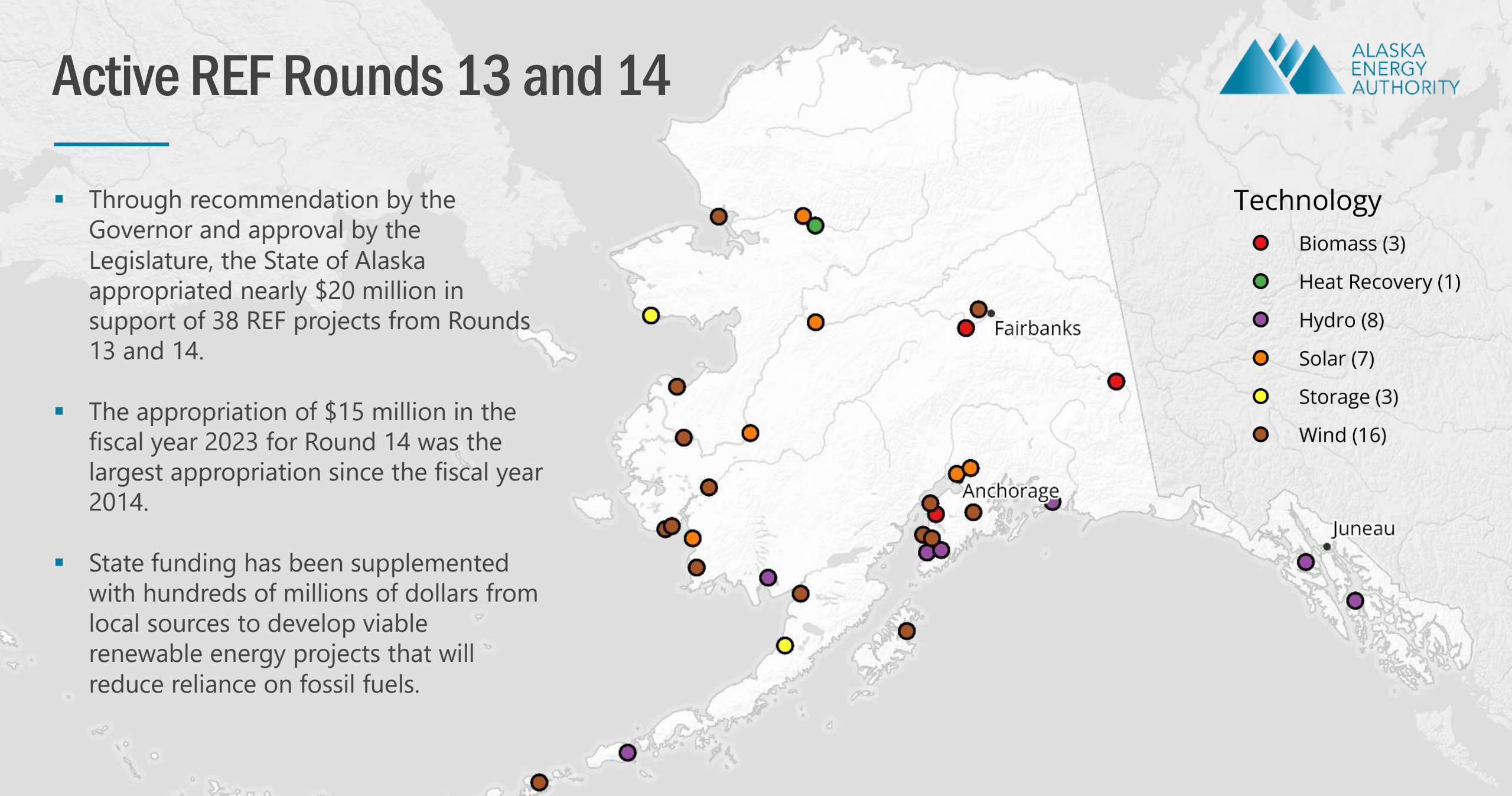
Established in 2008, the REF is a unique and robust competitive grant program, which provides critical financial assistance for statewide renewable energy projects, across a variety of project phases.

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

- Nearly $300 million invested in the REF by the State.
- Over 100 operational projects and 44 in development.
- The REF Advisory Committee unanimously approved 27 Round 15 projects for a total of $25.25 million.

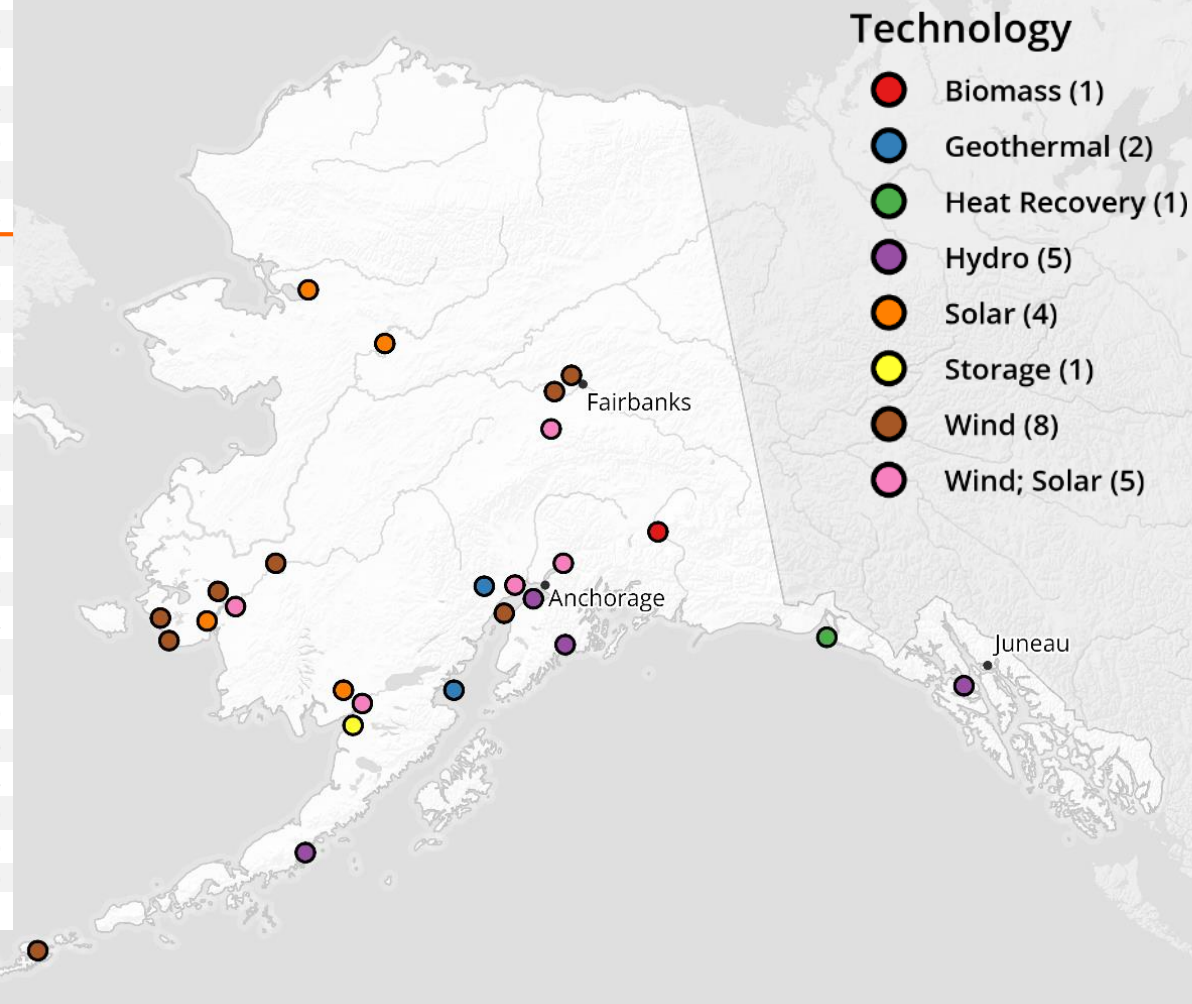
Active REF Rounds 13 and 14

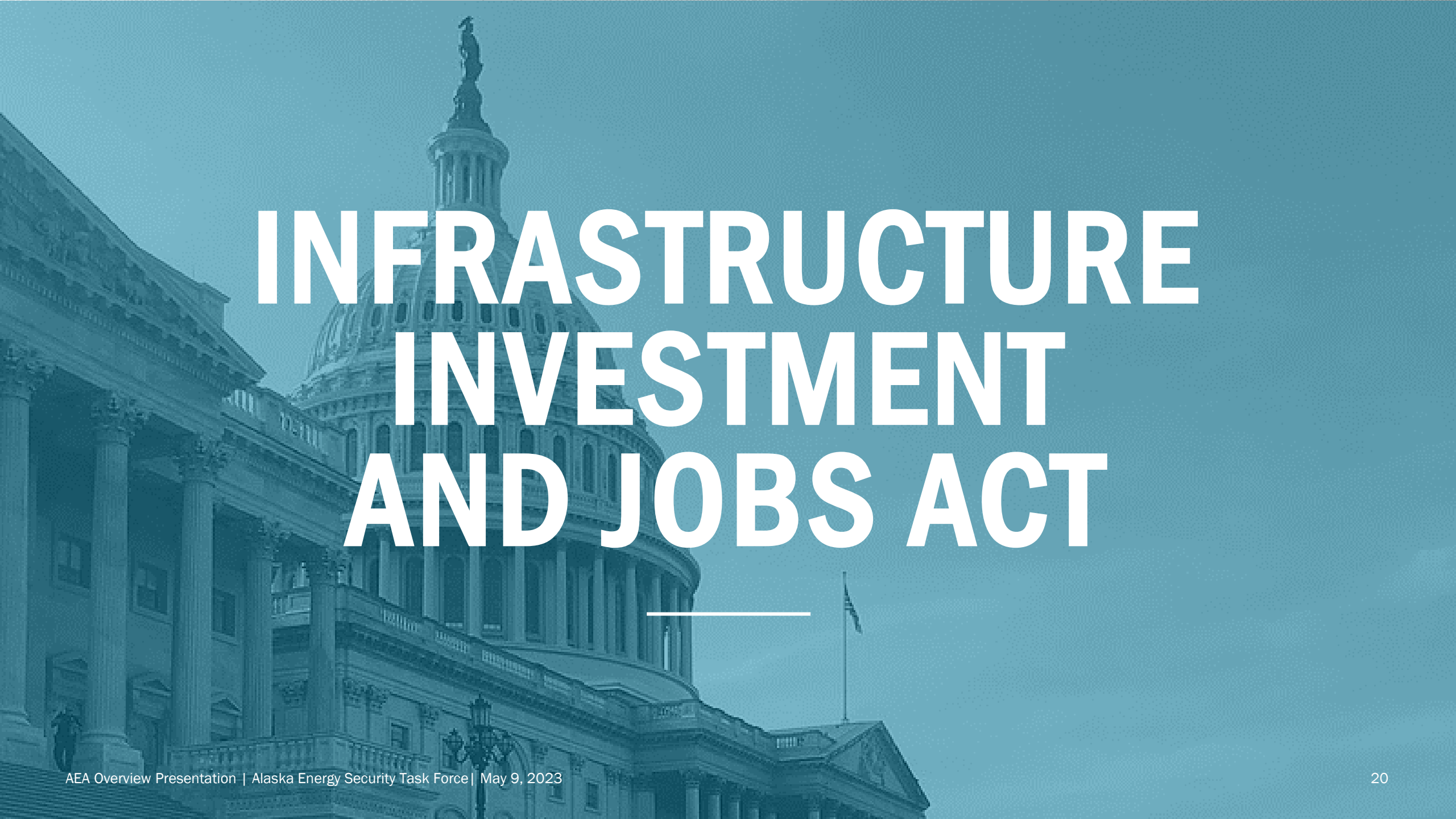
- Through recommendation by the Governor and approval by the Legislature, the State of Alaska appropriated nearly $20 million in support of 38 REF projects from Rounds 13 and 14.
- The appropriation of $15 million in the fiscal year 2023 for Round 14 was the largest appropriation since the fiscal year 2014.
- State funding has been supplemented with hundreds of millions of dollars from local sources to develop viable renewable energy projects that will reduce reliance on fossil fuels.



REF Round 15 Recommendations

Community	Project	Amount
Adak	Hydropower - Feasibility and Conceptual Design	497,650
Railbelt / GVEA Serving Area	LIDAR Improvement to Interior Wind Energy Assessments	250,000
Railbelt / HEA Serving Area	Mount Spurr Geothermal Feasibility and Conceptual Design	45,500
Railbelt / HEA Serving Area	Augustine Island Geothermal Feasibility and Conceptual Design	68,000
Naknek, South Naknek, King Salmon	Electric Battery Energy Storage System Design	2,172,984
Native Village of Kluti-Kaah (Copper Center)	Woodchip Heating Project	500,000
Kipnuk	Battery Installation, Integration and Commissioning	434,000
Hoonah	Water Supply Creek Hydro Construction	3,538,526
Beluga	Beluga Area Renewable Resource Assessment	298,000
Chefornak	Battery Installation, Integration, and Commissioning	437,000
Healy	Healy Area Renewable Resource Assessment	298,000
Railbelt / HEA Serving Area	Cook Inlet Oil Platform Wind Project	214,400
Huslia	Community-Scale Solar PV and Battery Project	2,082,000
Railbelt / MEA Serving Area	Railbelt Wind Feasbility Study and Conceptual Design	1,833,333
Selawik	Solar PV Array	1,134,500
Yakutat	Community Health Center Heat Recovery Project	1,000,000
Kalskag	Wind Feasibility and Conceptual Design	267,300
Railbelt	Utility-Scale Railbelt Wind – Alaska Renewables	2,000,000
New Stuyahok, Ekwok	Solar Energy and Battery Storage Project	2,520,000
Chignik	Hydroelectric Power System Design	802,394
Atmautluak	Battery and Thermal Stove Installation, Integration and Commissioning	577,000
Railbelt / CEA Serving Area	Godwin Creek Hydroelectric Project	1,729,000
Railbelt	Turnagain Arm Tidal Electricity Generation Project (TATEG)	400,000
Tuntutuliak	Community Services Association Solar Energy Project	1,197,768
Unalaska	Wind Farm Design	420,000
Napaskiak	Reconnaissance and Wind Assessment Project	337,500
Levelock	Renewables Feasibility and Conceptual Design	197,000
	Total:	25,251,855





INFRASTRUCTURE INVESTMENT AND JOBS ACT

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

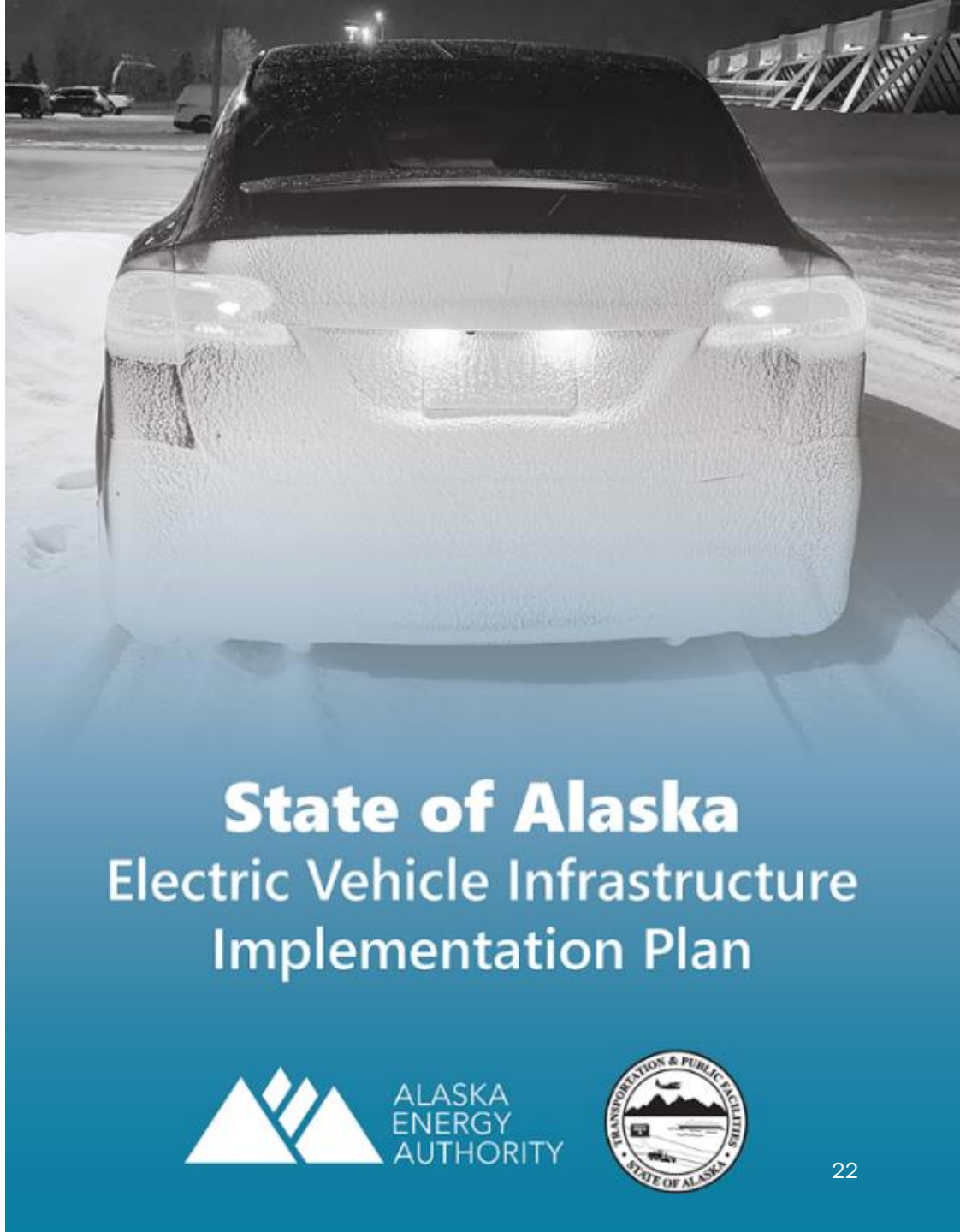
Per IIJA section 40101(a)(1),8 a disruptive event is defined as "an event in which operations of the electric grid are disrupted, preventively shut off, or cannot operate safely due to extreme weather, wildfire, or a natural disaster."

- These federal formula grant funds will provide **$60 million** to Alaska over five years, including **$22.2 Million** for the first two years 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.

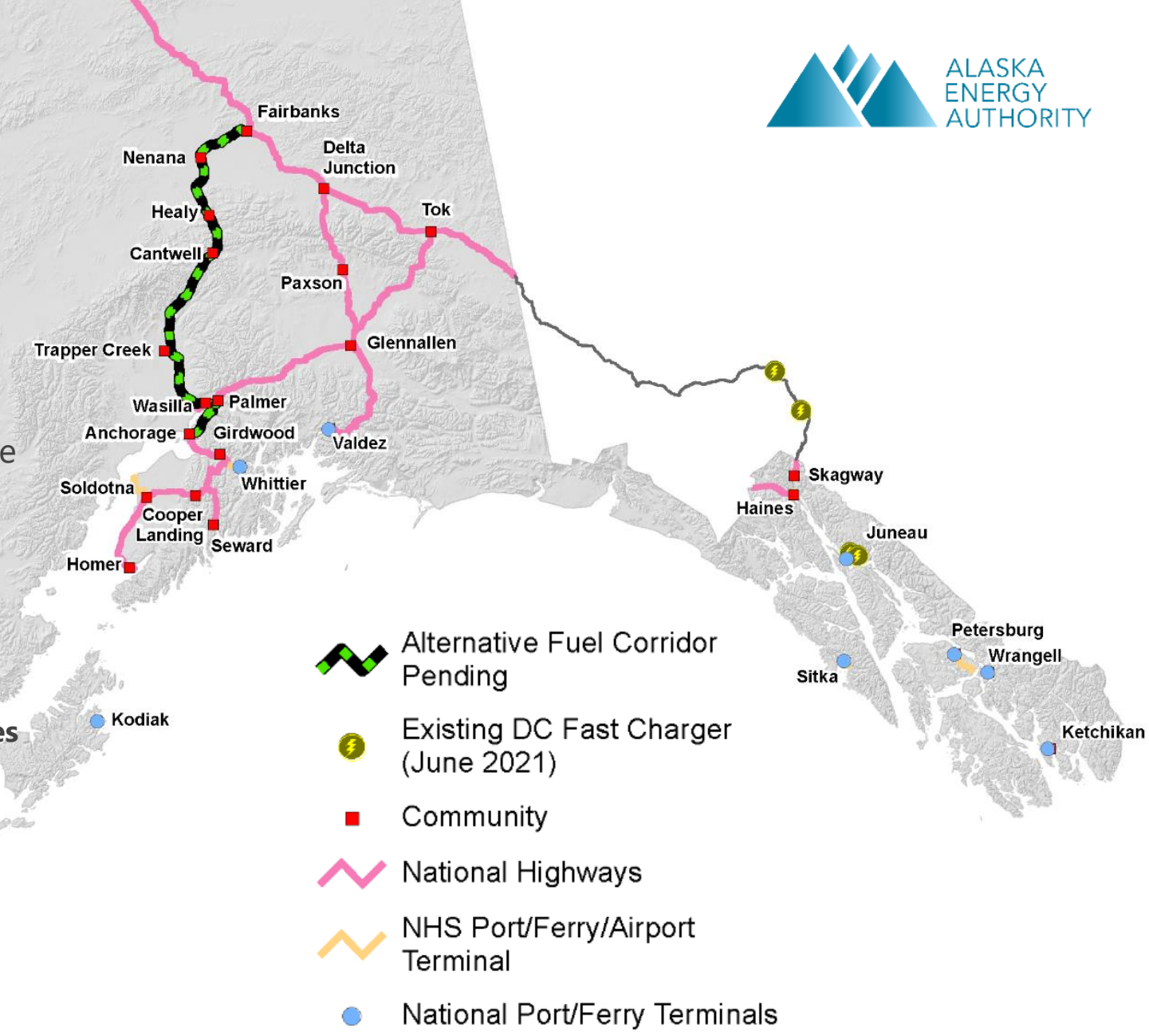
- On September 27, 2022, **The Plan was approved**. The announcement unlocks **$19 million** to expand EV charging infrastructure in Alaska.
- Over the **next five years, AEA anticipates receiving $52 million**. Funds will be received by DOT&PF and administered by AEA.
- On March 1, 2023, AEA issued a **Request for Applications** for to site hosts compete for a share of Alaska's NEVI program funding. Applications are due by 4 p.m. on May 15, 2023.



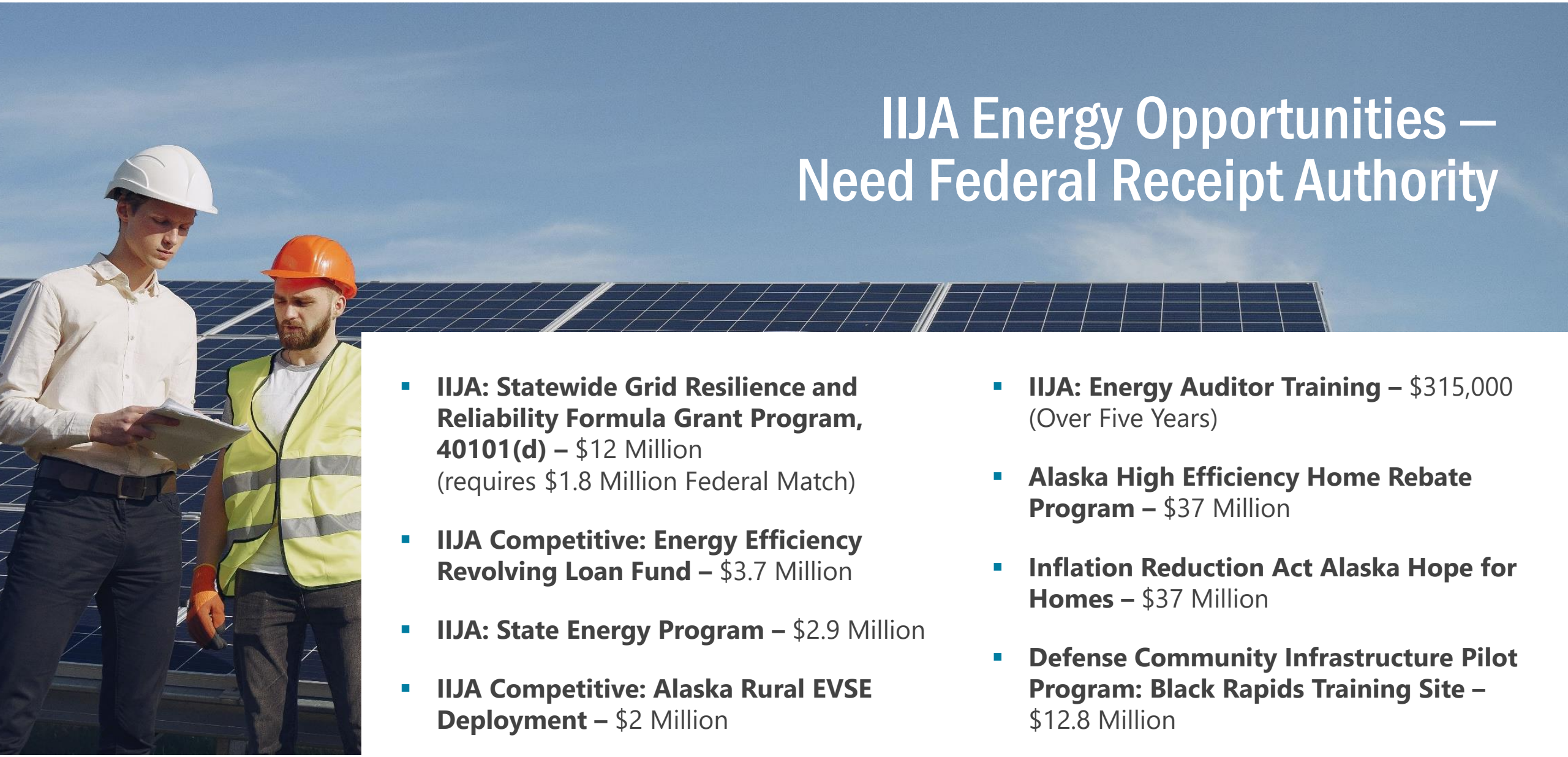
NEVI Requirements

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



IIJA Energy Opportunities — Need Federal Receipt Authority



- **IIJA: Statewide Grid Resilience and Reliability Formula Grant Program, 40101(d) –** $12 Million (requires $1.8 Million Federal Match)
- **IIJA Competitive: Energy Efficiency Revolving Loan Fund –** $3.7 Million
- **IIJA: State Energy Program –** $2.9 Million
- **IIJA Competitive: Alaska Rural EVSE Deployment –** $2 Million
- **IIJA: Energy Auditor Training –** $315,000 (Over Five Years)
- **Alaska High Efficiency Home Rebate Program –** $37 Million
- **Inflation Reduction Act Alaska Hope for Homes –** $37 Million
- **Defense Community Infrastructure Pilot Program: Black Rapids Training Site –** $12.8 Million

IIJA Competitive: 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
$100 Million*
(Requested of DOE; submitted April 5, 2023)

2) Battery Energy Storage/HVDC Coordinated Control
$16 Million*
(Requested of DOE; submitted March 16, 2023)

3) Railbelt Innovation Resiliency Project)
$299 Million*
(Due May 19, 2023)

3) Rural Alaska Microgrid Transformation
$250 Million*
(Due May 19, 2023)

*All four GRIP programs are in application phase.

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

ALASKA ENERGY AUTHORITY

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APPENDIX

FY2024 Capital Budget Overview

Project/Program	Budget Year	Federal	State UGF	Total
IIJA - Statewide Grid Resilience and Reliability Formula	FY24	12,110,523	1,816,579	13,927,102
IIJA - New Energy Efficiency Revolving Loan Fund Capitalization	FY24	3,773,780	-	3,773,780
IIJA - State Energy Program	FY23 Suppl.*	2,865,930	-	2,865,930
IIJA - EV Charging Equipment Competitive	FY24*	1,670,000	-	1,670,000
IIJA - Energy Auditor Training	FY24	63,600	-	63,600
IRA - Home Energy and High Efficiency Rebate Allocations	FY24	74,519,420	-	74,519,420
Black Rapids Training Site - Defense Community Infrastructure Pilot Program	FY23 Suppl.*	12,752,540	-	12,752,540
Rural Power Systems Upgrades	FY24	25,000,000	7,500,000	32,500,000
Renewable Energy Fund Round 15	FY24	-	7,500,000	7,500,000
Bulk Fuel Upgrades	FY24	7,500,000	5,500,000	13,000,000
Hydroelectric Development - Dixon & Godwin Creek Studies	FY24	-	5,000,000	5,000,000
Renewable Energy & Efficiency Programs	FY24	-	5,000,000	5,000,000
Delta Phase 3 Power	FY24		3,000,000	3,000,000
Electrical Emergencies	FY24	-	200,000	200,000
TOTAL		**140,255,793**	**35,516,579**	**175,772,372**

- Statewide Grid Resilience and Reliability Formula - $60 million over five years
- National Electric Vehicle Infrastructure Formula Program (funds from Department of Transportation RSA) - $52 million over five years