

Alaska Energy Authority Programs & Projects Update

Curtis W. Thayer
Executive Director
Alaska Energy Authority

FEDC: Energy for All Alaska Task Force
July 28, 2020



Who We Are



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



Owned Assets – AEA owns the Alaska Intertie and the Bradley Lake Hydroelectric Project. These assets benefit Railbelt consumers by reducing the cost of power.



Energy Technology Programs – AEA provides renewable energy and energy efficiency grants, analysis, and expertise. These include hydro, biomass, wind, solar, and others.



Power Cost Equalization – The Power Cost Equalization Program reduces the unit cost of electricity in rural Alaska for residential customers and community customers of eligible utilities.



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

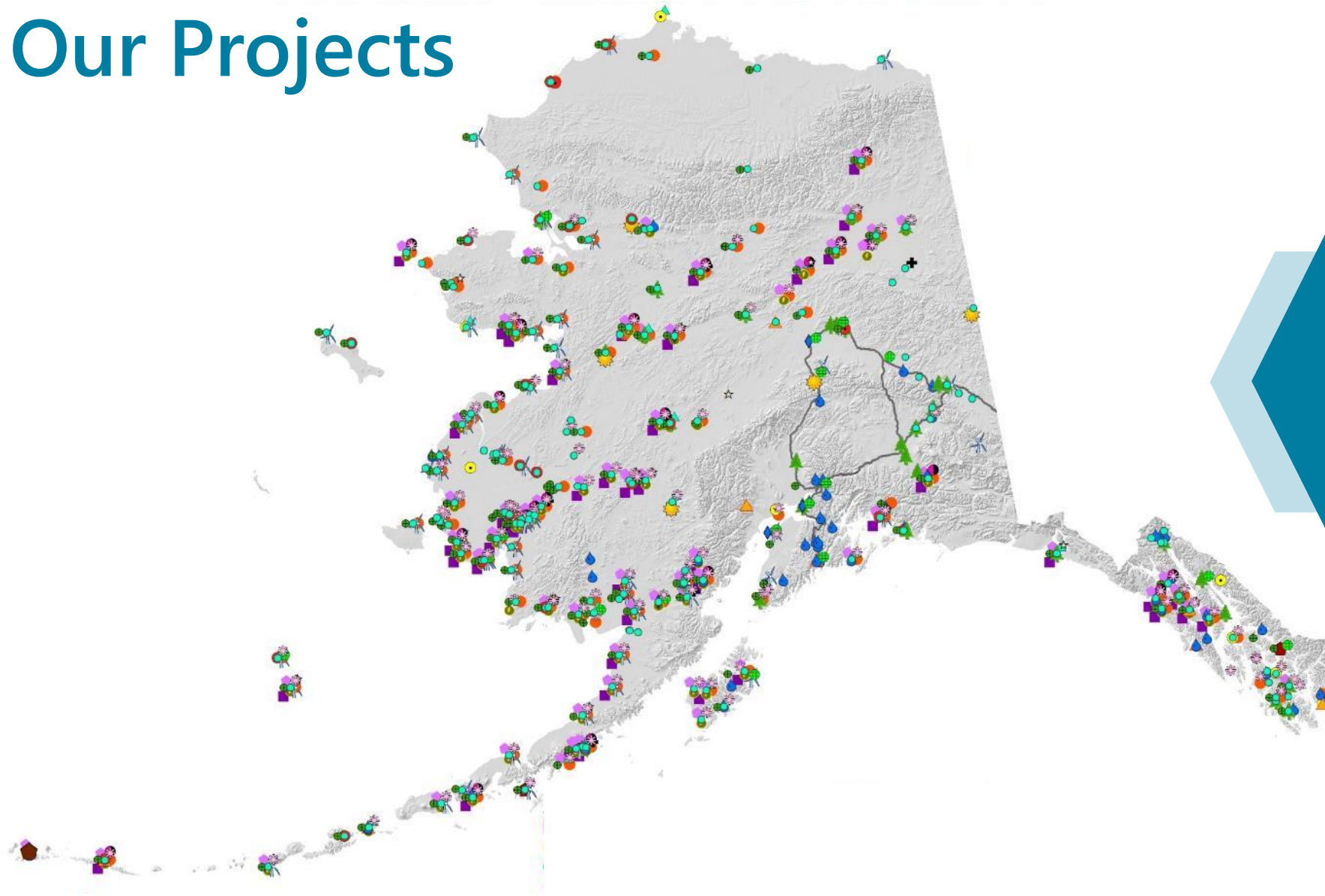


Rural Energy Assistance – AEA constructs bulk fuel tank farms, diesel powerhouses, and electrical distribution grids in rural villages. AEA supports the operation of these facilities through circuit rider and emergency response programs.



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

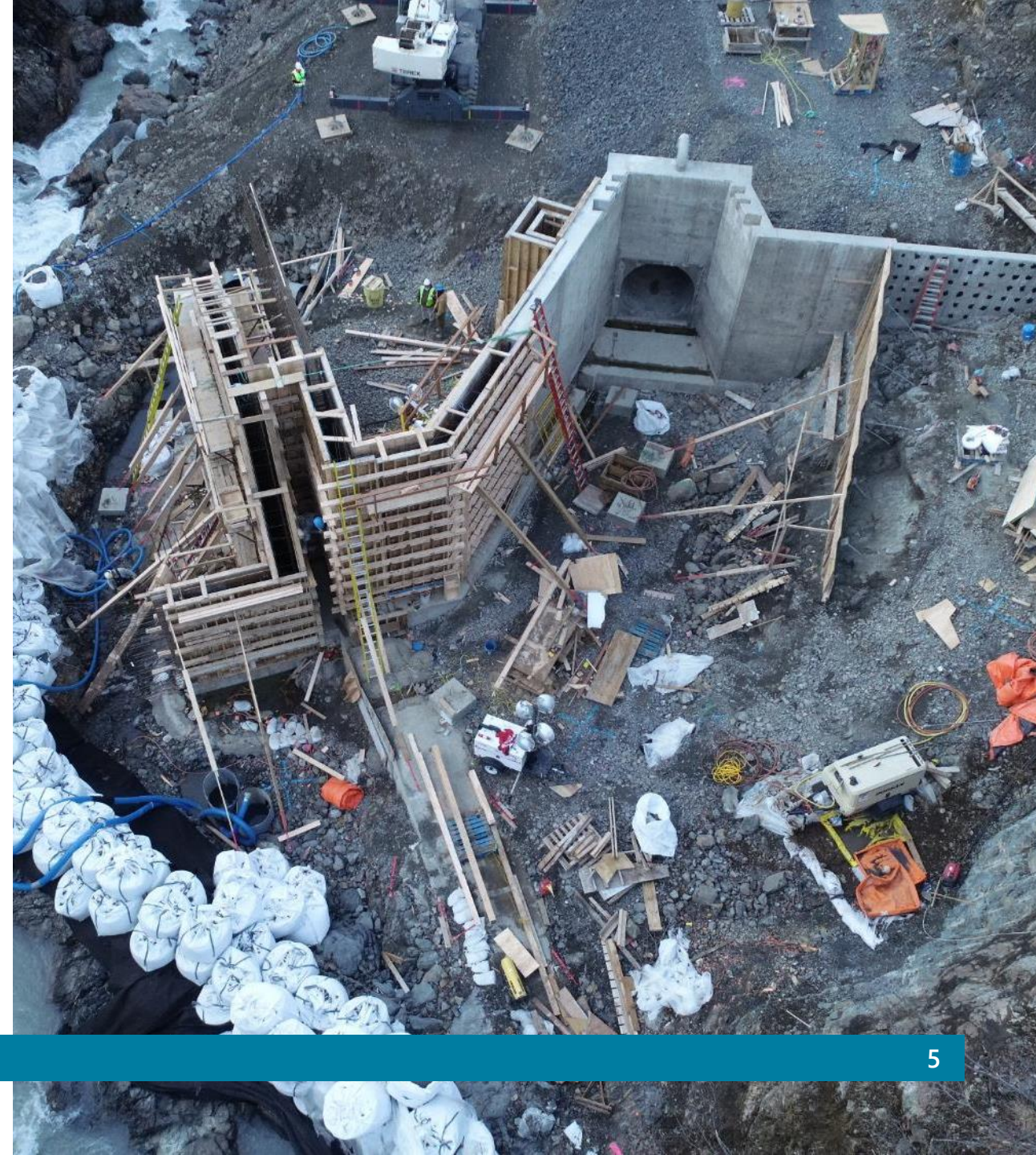
Our Projects



AEA works with its Alaska partners and stakeholders to provide reliable and affordable energy solutions.

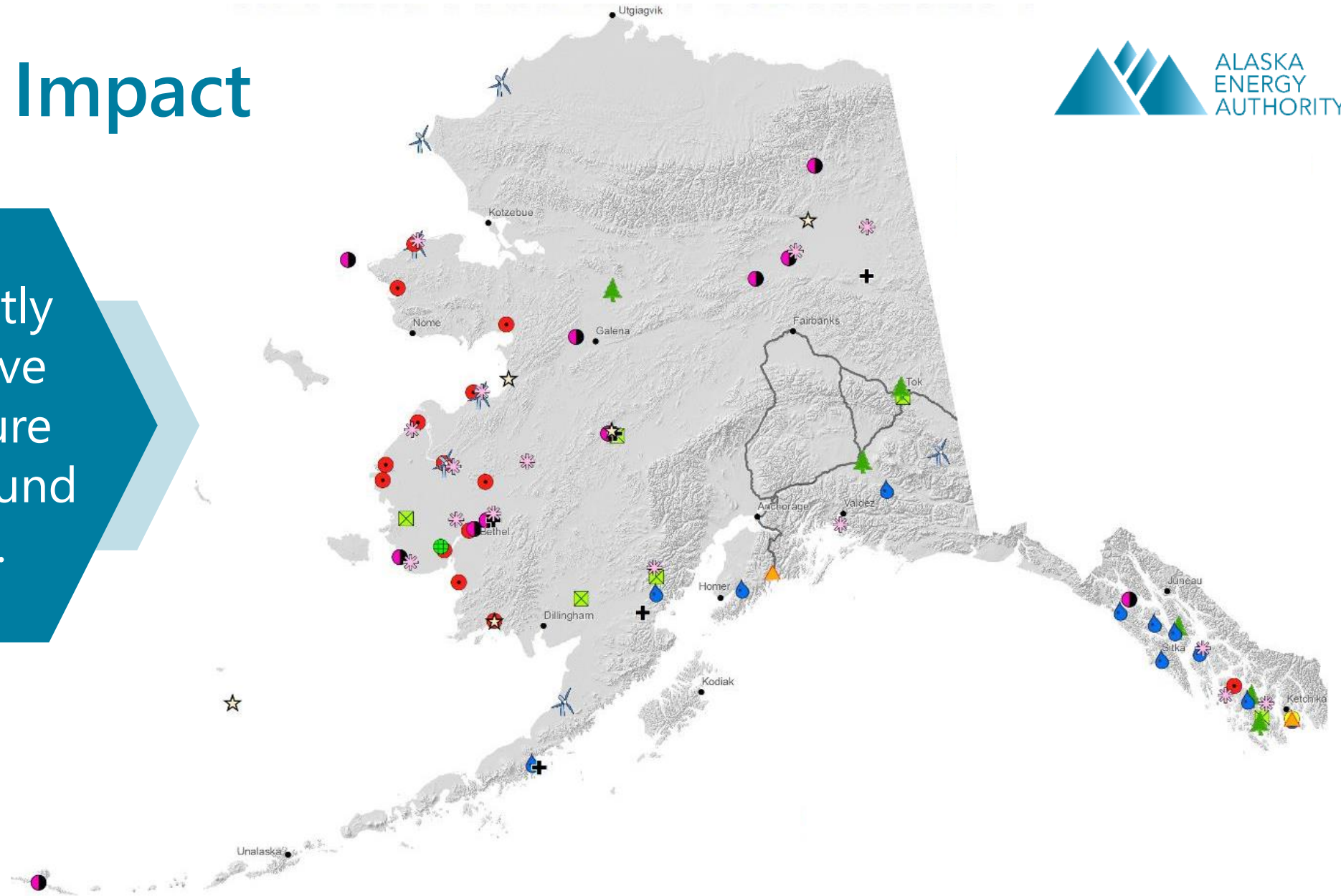
Programs and Projects

- ▶ Alaska Intertie
- ▶ Bradley Lake Hydroelectric Project
- ▶ Power Cost Equalization
- ▶ Rural Power System Upgrades
- ▶ Bulk Fuel Upgrades
- ▶ Rural Utility Assistance
- ▶ Power Project Fund
- ▶ Renewable Energy Fund
- ▶ Energy Efficiency
- ▶ Alaska C-PACE
- ▶ Alternative Energy
- ▶ Energy Project Development



Statewide Impact

AEA currently
has 88 active
infrastructure
projects around
the state.

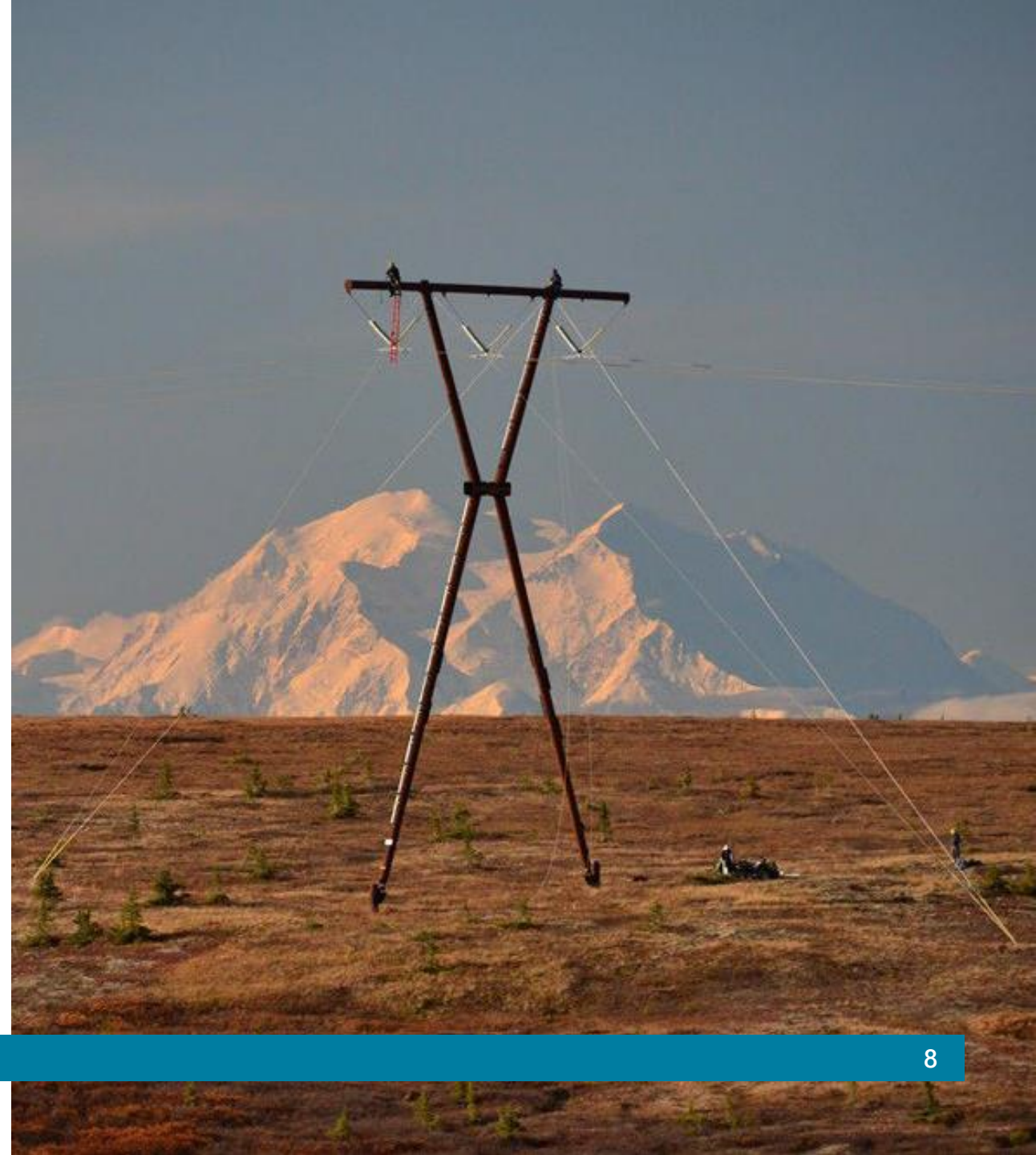




Owned Assets

Alaska Intertie

- ▶ 170 miles from Willow to Healy
- ▶ Allows Golden Valley Electric Association (GVEA) to connect to and benefit from lower cost power
- ▶ Improves reliability within Railbelt system
- ▶ Operated by AEA and Railbelt utilities
- ▶ \$40 million savings for GVEA in Fiscal Year 2019



An aerial photograph of the Bradley Lake Hydroelectric Project. The image shows a large concrete dam structure across a river. To the left of the dam is a powerhouse with a white roof. The river flows from the top left, through the dam, and then turns to the right, creating a series of rapids and a waterfall. The surrounding landscape is rugged with green vegetation and rocky terrain. A road or path is visible on the right side of the dam.

Bradley Lake Hydroelectric Project

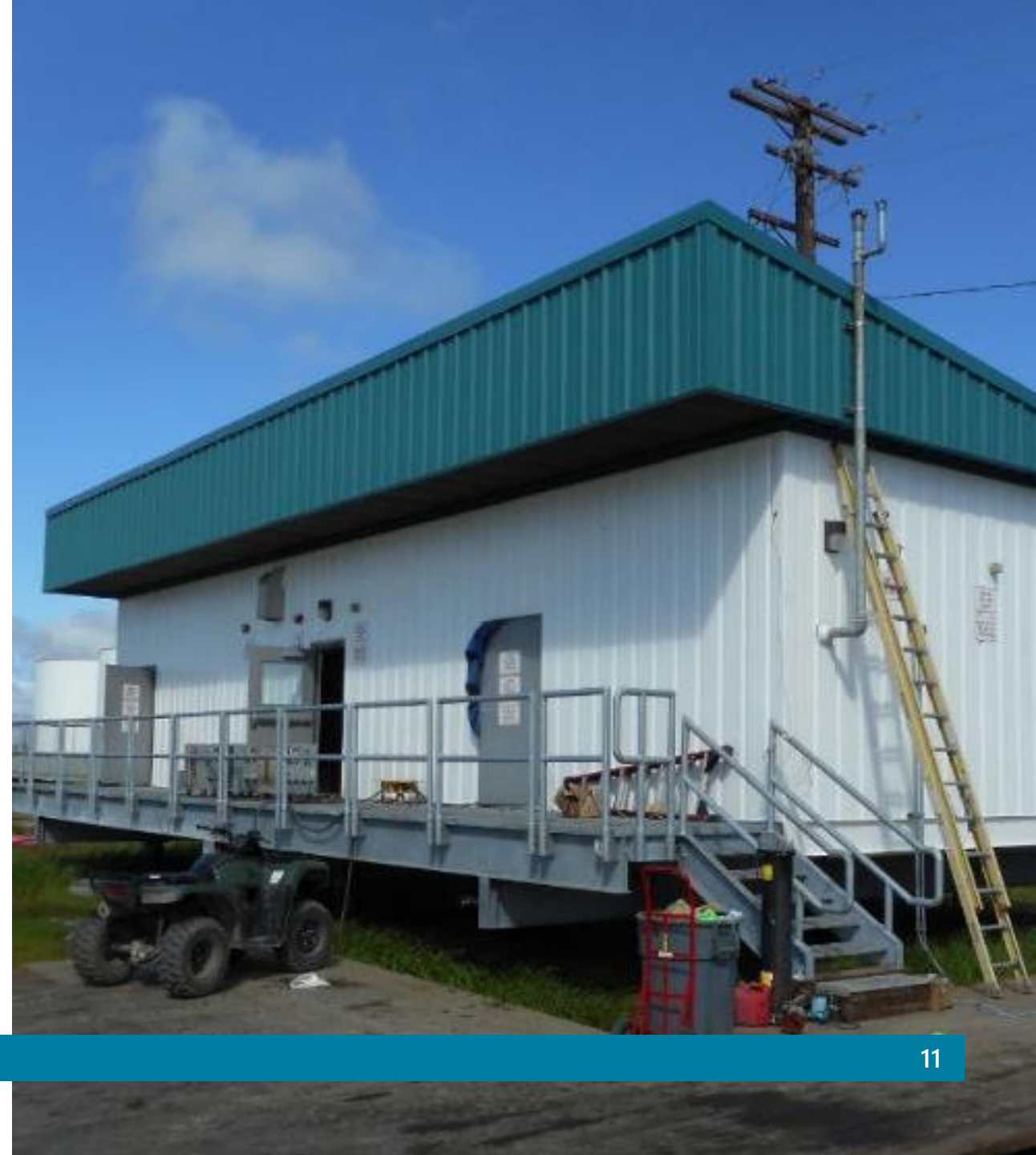
- ▶ Produces ~10% of Railbelt electricity, 4.5 cents/kWh
- ▶ Benefits members of:
 - ▷ Chugach Electric Association
 - ▷ City of Seward
 - ▷ Golden Valley Electric Association
 - ▷ Homer Electric Association
 - ▷ Matanuska Electric Association
 - ▷ Municipal Light & Power
- ▶ Battle Creek Diversion Project: \$47 million, will add ~10% energy



Rural Energy Assistance

Rural Power System Upgrades

- ▶ Improving power system efficiency, safety, and reliability
- ▶ Building code compliant facilities to provide stable and reliable power
- ▶ ~10%, 20%, 30% efficiency improvement in diesel generation
- ▶ 98 projects completed since 2000



Bulk Fuel Tank Farm Upgrades

- ▶ Code-compliant fuel storage facilities
- ▶ Prevention of spills and contamination
- ▶ Reduction of fuel cost by allowing the community to purchase bulk quantities
- ▶ 131 projects completed
- ▶ 8 are in design or construction



Rural Utility Assistance



109

Communities received Circuit Rider and/or Technical Assistance in Fiscal Year 2019



36

Operators from 33 communities received training in Fiscal Year 2019



5

Communities received electrical emergency assistance in Fiscal Year 2019



Power Cost Equalization

Power Cost Equalization

- ▶ **History** – Established in 1985, the Power Cost Equalization (PCE) Program provides electric power to rural residential customers and community facilities at costs similar those in Anchorage, Fairbanks, and Juneau
- ▶ **PCE Endowment Fund** – Created and capitalized in Fiscal Year 2001, the \$1.1 billion PCE Endowment Fund is managed by the Department of Revenue
- ▶ **Calculation of PCE Rate** – The Regulatory Commission of Alaska determines the effective rate based on rural utility expenses and power sales

PCE Program



197
Communities
Served



\$28.3 Million
Disbursed in
Fiscal Year 2019



Supported by
AEA Rural Utility
Assistance



Web Portal
to Increase
Accuracy





Energy Technology Programs

Alternative Energy and Energy Efficiency



Energy Efficiency

AEA focuses its energy efficiency programs on commercial buildings, public buildings, industrial facilities, and electrical efficiency.



Biomass

AEA's biomass program supports the construction of wood-fired boilers using local fuels that provide heat for public facilities.



Hydroelectric

In addition to Bradley Lake, AEA continues to analyze, develop, construct, and fund hydroelectric projects throughout Alaska.



Wind

AEA supports the development and construction of wind projects across Alaska – from the Railbelt Grid to rural villages.

Alaska C-PACE

- ▶ Adopted by over 20 states, Commercial Property Assessed Clean Energy (C-PACE) is an effective financing program tool to attract private capital for energy upgrades
- ▶ In 2017, legislation was passed to develop a C-PACE program in Alaska
- ▶ AEA is leading an ad hoc group of stakeholders to initiate programs in municipalities and boroughs statewide
- ▶ Under the C-PACE model, debt associated with doing the improvements is repaid via a line item on local tax assessments

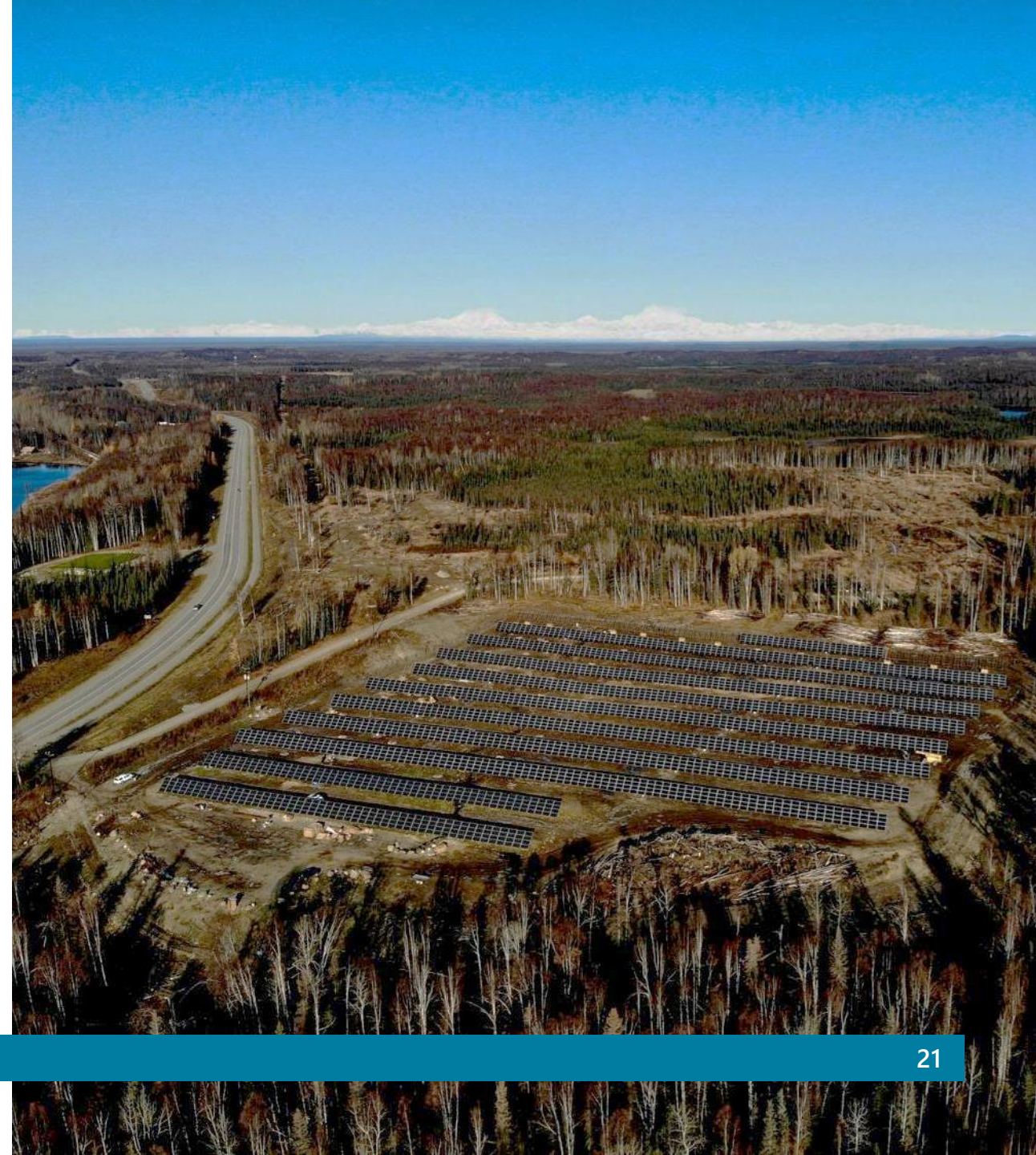




Grants and Loans

Power Project Fund

- ▶ ~\$38 million committed or disbursed for 18 performing loans
- ▶ \$10.7 million uncommitted
- ▶ Flexible loan program
- ▶ Covers all aspects of supply side system
- ▶ Relies on unique, in-house technical expertise for evaluation of loan viability and regulatory compliance
- ▶ Loan applications are vetted for economic and finance viability
- ▶ Critical resource in shift from grant funded to debt financed energy projects

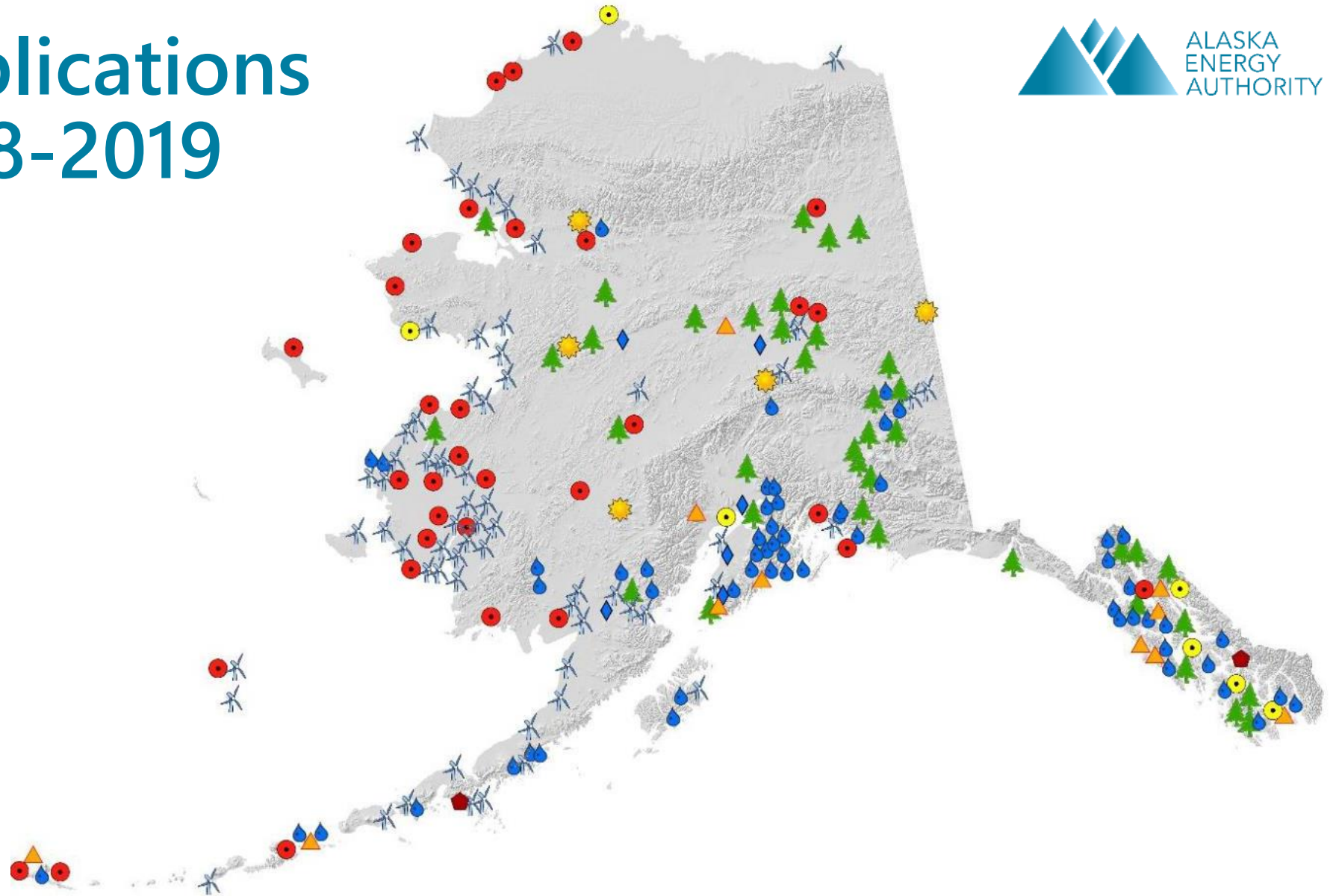
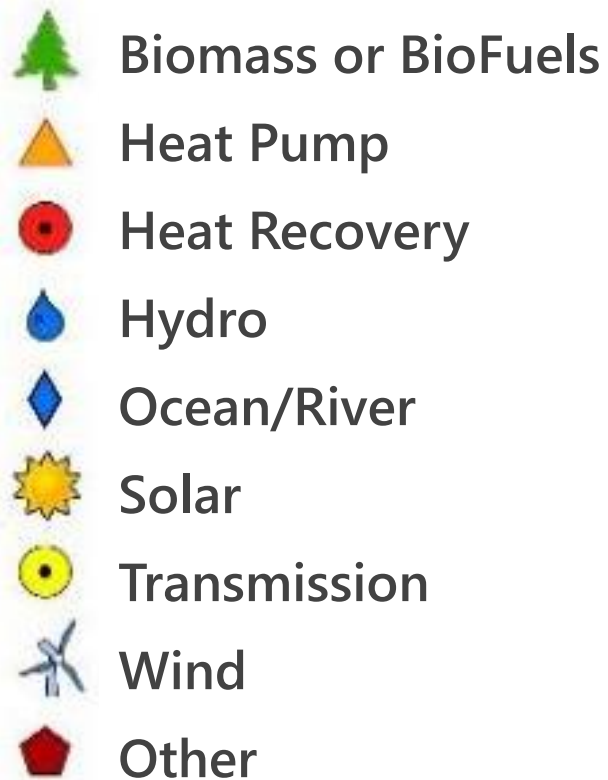


Renewable Energy Fund

- ▶ \$268 million invested in the Renewable Energy Fund by the State
- ▶ Boosted renewable energy market in Alaska
- ▶ Leveraged hundreds of millions of federal and private dollars
- ▶ 90 operational projects, 30 in development
- ▶ Saving more than 30 million gallons of diesel each year
- ▶ ~\$74 million in fuel savings in 2017

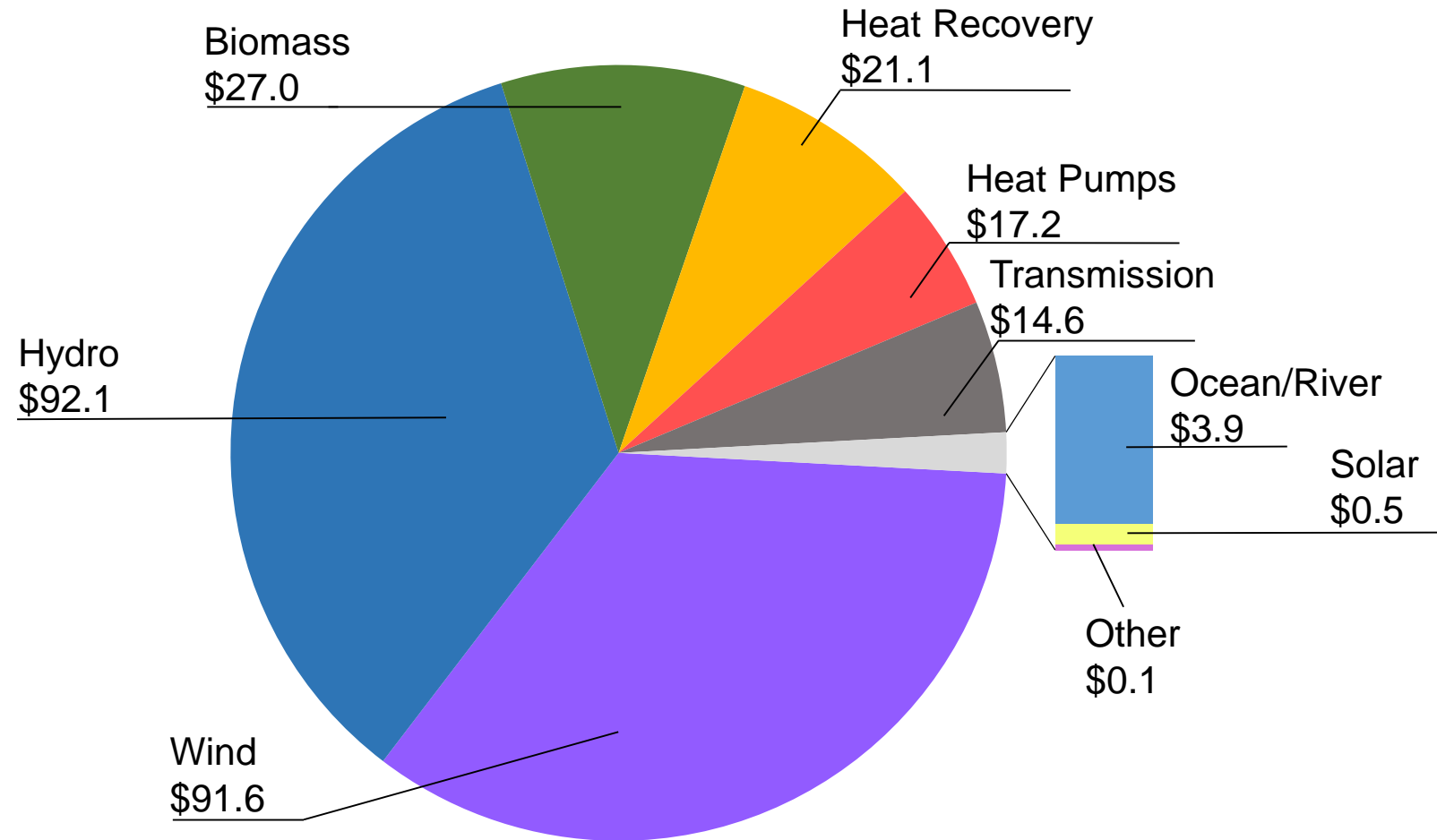


295 REF Applications Funded 2008-2019



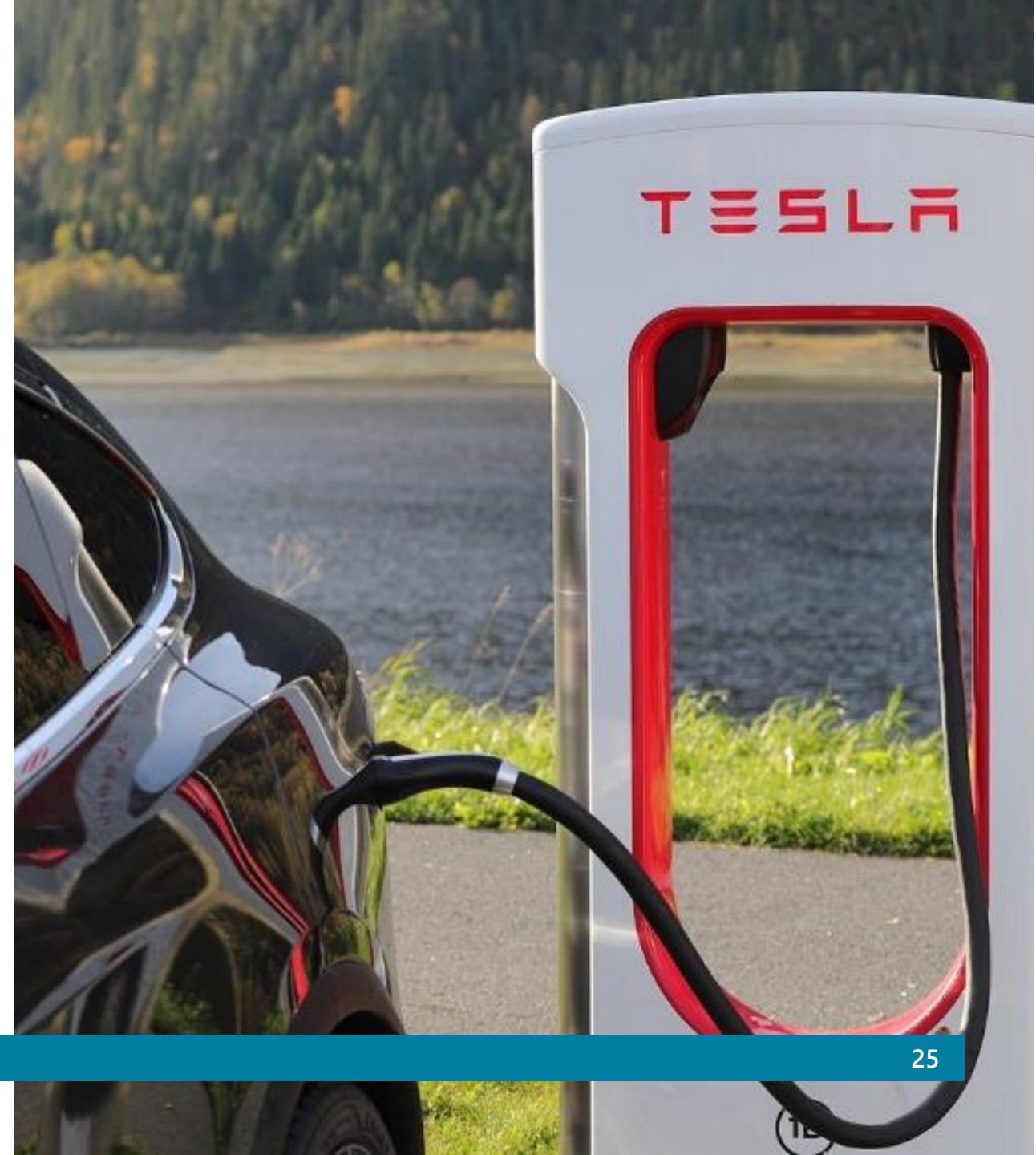
REF Funding by Energy Resource (\$ millions)

Rounds I-IX (2008-2019)



VW Settlement Funds

- ▶ On January 29, 2018, Alaska became the beneficiary of a \$8.125 million “Volkswagen (VW) Settlement”
- ▶ AEA is the State’s lead agency to develop and implement a Beneficiary Mitigation Plan
- ▶ The following projects have been selected to reduce NOx emissions by more than 2.5 times Alaska’s mitigation goal:
 - ▷ Replacement of Diesel Engines used for Prime Power (~\$813K)
 - ▷ Public Transit Bus Replacement (~\$234K)
 - ▷ School Bus Replacement (~\$4.3M)
 - ▷ Electric Vehicle Charging Infrastructure (~\$1.2M)






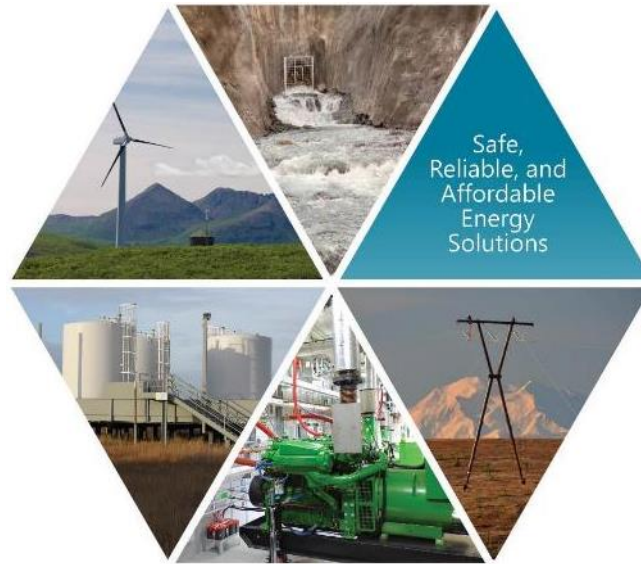
Energy Planning

Energy Project Development and Financing

- ▶ Planning, evaluation, and project development assistance
- ▶ Data collection and reporting
- ▶ Financing
- ▶ Critical federal partnerships
(Denali Commission, Department of Energy, USDA Office of Rural Development)



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



ALASKA ENERGY AUTHORITY

813 West Northern Lights Blvd.
Anchorage, Alaska 99503
Phone: (907) 771-3000
Fax: (907) 771-3044
Toll Free (888) 300-8534

akenergyauthority.org

For more information, please contact AEA Executive Director Curtis W. Thayer