



ALASKA
ENERGY
AUTHORITY

2021 ANNUAL REPORT



**THE ALASKA ENERGY
AUTHORITY (AEA)
POSITIVELY IMPACTS
NEARLY EVERY COMMUNITY
AND RATEPAYER IN ALASKA.**

CONTENTS

- 4 Message from the Governor
- 5 About AEA
- 6 Message from the Chair
- 7 Message from the Executive Director
- 8 Owned Assets
- 10 Power Cost Equalization
- 12 Rural Energy
- 16 Alternative Energy and Energy Efficiency Programs
- 22 Grants and Loans
- 24 Financial Highlights
- 26 Board of Directors
- 27 Executive Team

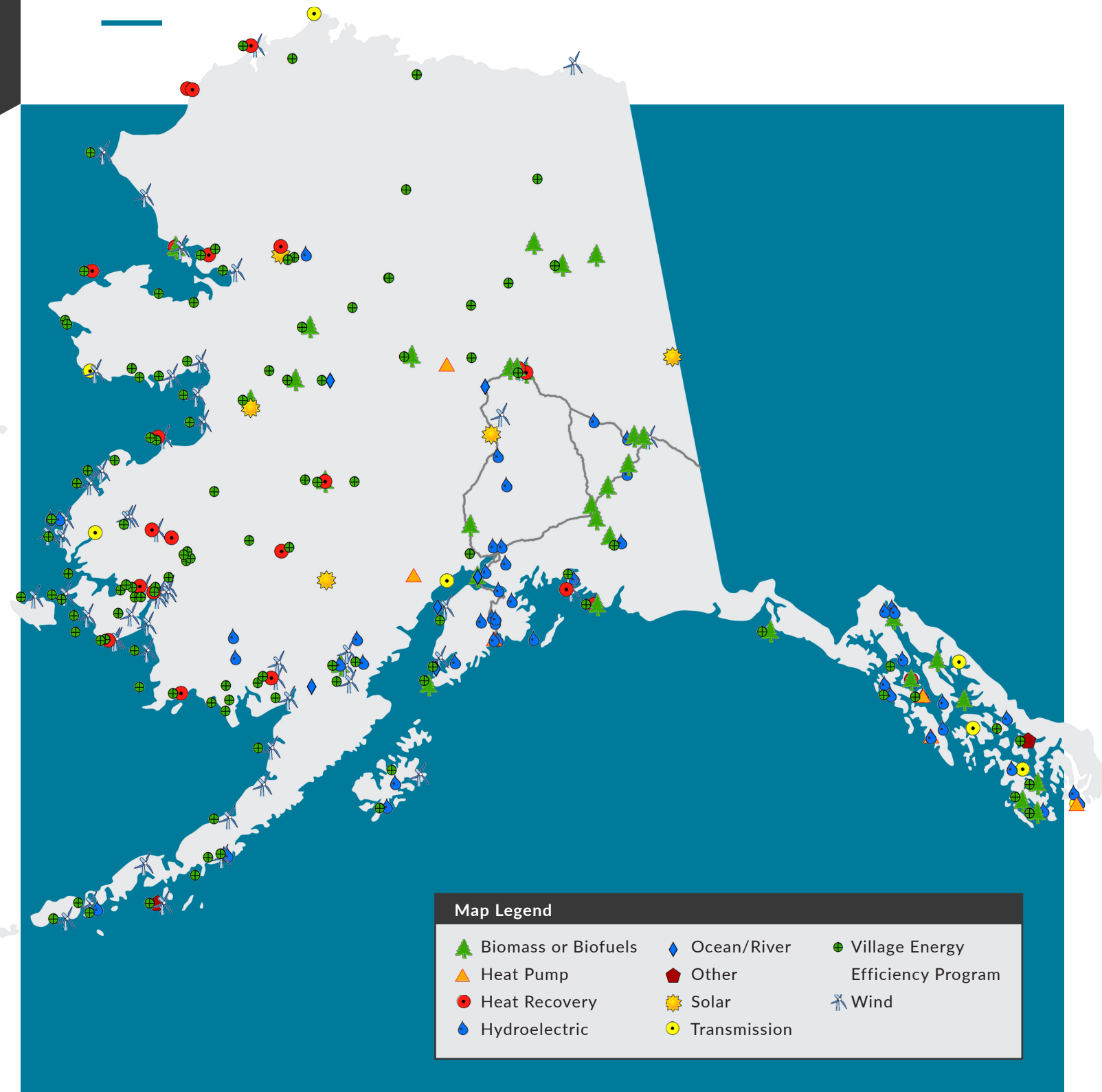
Annual Report Requirements

The publication on the activities and financial condition of AEA is submitted in accordance with Alaska Statute (AS) 44.83.940. The report was printed in Anchorage, Alaska at a cost of \$5.95 per copy for a total number of 500 copies. Design and production by AEA. Printed by Service Business Printing.

Cover Photo

AEA and FreeWire Technologies held a ribbon-cutting ceremony on September 23, 2021 at AJ's OldTown Steakhouse & Tavern in Homer to commemorate the commissioning of the first of nine EV fast-charging stations to be installed on a statewide network and the very first ultrafast EV charger in Alaska. Photo by Kachemak Communications.

AEA ACTIVE PROJECTS AND SERVICES



MESSAGE FROM THE GOVERNOR

Dear Fellow Alaskans,

The Alaska Energy Authority (AEA) is home to the state's energy office and lead agency for energy policy and program development. For more than 45 years, AEA has worked to ensure that Alaskans have access to safe, reliable, affordable energy.

AEA owns the Bradley Lake Hydroelectric Project, the largest hydropower facility in Alaska. Energized in 1991, the project provides low-cost power to more than 550,000 Alaskans. To optimize the project's value, AEA, in partnership with the Railbelt utilities, is working to reduce current transmission constraints to more efficiently deliver power at no increased cost to ratepayers or burden to the State.

In rural Alaska, AEA reduces the high cost of electricity through its administration of the Power Cost Equalization (PCE) program. PCE serves 81,200 Alaskans in 193 rural communities primarily reliant on diesel for power generation. Last year's total PCE budget was \$29 million. AEA also invests in energy projects in rural Alaska lowering the costs for our rural neighbors. Since 2000, AEA has invested almost \$400 million in rural energy infrastructure.

To prepare Alaska for electrification of transportation, AEA has developed a strategic plan to establish a statewide electric vehicle fast-charging network along Alaska highways. AEA has teamed up with site hosts to install 15 fast-chargers and eight Level 2 chargers at nine locations from Homer and Seward to Fairbanks. All chargers are anticipated to be operational by summer 2022.

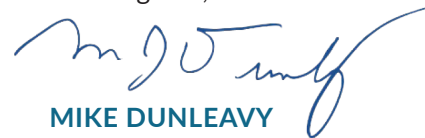
AEA manages the Renewable Energy Fund (REF), a program that diversifies energy sources and provides



resiliency through developing renewable energy projects. Working with the Legislature, we identified 11 projects and approved \$4.7 million in grant funding in Fiscal Year 2022. In my proposed budget for the Fiscal Year 2023, I included \$15 million for the REF program, the largest capitalization of the fund since the Fiscal Year 2014 to continue investing in renewable energy.

We have only begun to tap Alaska's renewable energy potential. Increasing our investment in clean energy today will provide future Alaskans with a sustainable energy future tomorrow.

Best regards,


MIKE DUNLEAVY
Governor

About AEA

Created in 1976 by the Alaska Legislature, 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.



OWNED ASSETS

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



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.



RURAL ENERGY

In rural Alaska, AEA constructs bulk fuel tank farms, diesel powerhouses, and electrical distribution grids. Through circuit rider, emergency response, and training for operators and utility managers, AEA supports the operation of these facilities.



ALTERNATIVE ENERGY AND ENERGY EFFICIENCY

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



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.



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.

MESSAGE FROM THE CHAIR

AEA's mission is to develop and implement low-cost, reliable energy solutions for more than 730,000 Alaskans. Over the past year, we did just that – overcoming the challenges brought on by COVID-19 disruptions, supply-chain issues, and workforce constraints.



Our mission has never been more relevant. We are working hard to ensure that Alaska's energy infrastructure is operationally safe, efficient, and resilient in the face of these challenges.

Alaska's Railbelt transmission infrastructure was constructed more than 40 years. To extend its useful life, AEA acquired a component of the interconnected system located on the Kenai Peninsula in December 2020. That line will soon benefit from \$53 million in upgrades critical to the delivery of power from AEA's Bradley Lake Hydroelectric Project. These upgrades will reduce losses and increase the reliability of this low-cost and carbon-free power for customers along the Railbelt from Kenai Peninsula to Fairbanks.

AEA has taken an active role in the development of an Electric Reliability Organization (ERO), which was mandated by the Legislature under Senate Bill 123. The ERO will make the Alaska Railbelt's Bulk Electric System more reliable and resilient by developing and enforcing system-wide standards, and creating an integrated resource plan. These measures will allow the Railbelt region to more effectively meet future load requirements.

Last year, AEA budgeted \$29 million in Power Cost Equalization (PCE) payments to rural electric utilities

for the benefit of 193 communities and nearly 82,000 Alaskans. PCE is a long-term, stable financing source benefiting residential customers and community facilities.

Another highlight was AEA's award of \$1 million in competitive grants to support the installation of eight Level 2 electric vehicle (EV) chargers and 15 fast chargers at nine locations from Seward and Homer to Fairbanks. These charging stations will be located less than 100 miles apart along the state's backbone highway system. Deploying EV charging infrastructure is critical for the growth of Alaska's EV market.

To help support statewide COVID-19 recovery, AEA administered the Electric Utility Relief Program and distributed nearly \$5 million of federally provided funds to 33 electric utilities compensating them for residential members who experienced financial hardship due to the COVID-19 pandemic.

As AEA Board Members, we know our decisions affects all Alaskans. This next year will bring new challenges and opportunities, and we are confident that AEA is prepared to respond.

J. DANA PRUHS
Chair

MESSAGE FROM THE EXECUTIVE DIRECTOR

This year, AEA again delivered on its commitment to pursuing energy solutions that meet the unique needs of Alaska's rural and urban communities. Through its actions, AEA helped Alaskans develop and thrive.



Across our energy projects, programs, and services we focused on finding more efficient and sustainable ways for Alaskans to access clean, dependable, and affordable energy resources to improve living standards, promote economic growth, and create jobs.

Throughout the year, we sought ways to optimize the value of our assets. AEA identified opportunities that will enhance Alaska's largest hydroelectric facility, the Bradley Lake Hydroelectric Project, and is working with its Railbelt utility partners to upgrade and improve Bradley Lake power generation and operations for the benefit of the more than 550,000 Alaskans on the Railbelt.

Following the successful completion of the West Fork Upper Battle Creek Diversion project in 2020, AEA is studying a new project to optimize the energy potential of Bradley Lake. Similar to Battle Creek, the Dixon Diversion Project would divert water from Dixon Glacier increasing the annual energy production of Bradley Lake.

AEA is improving critical infrastructure across rural Alaska by leveraging federal partnerships to develop an inventory and assessment of eligible community rural power systems to prioritize assistance. For the first time, AEA deployed three-dimensional imaging and geographic information system software to

provide a more accurate complete picture of each power system.

Through its Renewable Energy Fund (REF), AEA is expanding investment in those energy projects to achieve deployment of clean, sustainable, energy solutions that benefit our residents by lowering costs and diminishing our carbon footprint. Over the life of REF, \$275 million of funding has been deployed towards the development of renewable energy. Almost 300 renewable energy projects are part of the REF catalog. AEA estimates that approximately \$70 million in fuel cost savings have been achieved by over 95 operational REF projects.

Recent weather extremes remind us how vital reliable energy infrastructure is. The federal Infrastructure Investment and Jobs Act will deliver historic levels of new infrastructure investment to Alaska, enabling us to modernize our infrastructure for the benefit of our families and children.

Thank you to all of our partners for your continued support and commitment to energy efficiency, renewable energy, transportation electrification, and low-cost energy access for all Alaskans.

CURTIS W. THAYER
Executive Director

OWNED ASSETS

Throughout the 1980s, AEA developed the state’s energy resources to help diversify Alaska’s economy and provide affordable energy to Alaskans. AEA built and owns several key pieces of Railbelt electric infrastructure – the Alaska Intertie, the Bradley Lake Hydroelectric Project, and the Sterling to Quartz Creek transmission line.

ALASKA INTERTIE

Completed in 1986, the Alaska Intertie is a 170-mile long, 345-kilovolt (kV) transmission line that stretches between Willow and Healy and operates at 138 kV. The Intertie connects Golden Valley Electric Association (GVEA), the utility that serves areas north of the Alaska Range, with Southcentral Alaska utilities. It was funded with State of Alaska appropriations totalling \$124 million and has no debt service.

The Intertie provides significant cost savings through the transmission of economy energy to GVEA. It delivers to GVEA its power share of Bradley Lake and enables the sharing of reserve generation capacity between the Anchorage and Fairbanks load centers.

Operation of the Intertie is governed by the Alaska Intertie Agreement signed in 1985 and amended thereafter. The parties to the agreement are AEA, Chugach Electric Association, GVEA, and Matanuska Electric Association. Each of these entities has a seat on the Intertie Management Committee (IMC), which has responsibility for managing the Intertie.

Through AEA’s leadership as an IMC member and with its step-in rights on financial decisions regarding the Intertie, AEA is uniquely positioned to ensure that ratepayers across the electrically interconnected Railbelt region benefit as intended under the current Alaska Intertie Agreement.

In Fiscal Year 2021, the IMC created an Asset Management Plan for the Alaska Intertie. The plan includes a preventive maintenance program, multi-year projections of maintenance and repair funding, climate change considerations, and analysis of factors affecting future use. The plan incorporates and facilitates some of the major changes anticipated on the Railbelt, such as increasing renewable power generation, reduced greenhouse gas production, and participation by Independent Power Producers.

\$30M

AVERAGE COST SAVINGS

Between 2008 and 2018, the Intertie provided an average annual cost savings of \$30 million to GVEA.

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

Energized in September 1991, the Bradley Lake Hydroelectric Project located near Homer, Alaska has been a low-cost source of electricity for the Railbelt for more than 30 years. The 120-megawatt (MW) facility generates about 10 percent of the total annual power used by Railbelt electric utilities at some of the lowest-cost power to more than 550,000 Alaskans.

The power generation potential of Bradley Lake was first studied in 1955 by the United States Army Corps of Engineers. AEA, then the Alaska Power Authority, assumed responsibility for the project in 1982. To date, the total project cost is approximately \$400 million. The project was funded through legislative appropriations and AEA revenue bonds that are being repaid by the participating utilities. The Bradley Lake Project Management Committee (BPMC) manages the project, subject to AEA’s non-delegable rights, duties, and responsibilities.

Throughout the year, AEA sought ways to optimize the value of the project. Following the successful completion of the West Fork Upper Battle Creek Diversion Project in 2020, AEA is studying a new project to optimize the energy potential of Bradley Lake. Similar to Battle Creek, the Dixon Diversion Project would divert water from Dixon Glacier increasing the annual energy production of Bradley Lake.

AEA acquired a component of the interconnected transmission system located on the Kenai Peninsula in December 2020. That line will soon benefit from \$53 million in upgrades critical to the delivery of power from Bradley Lake. The upgrades will reduce losses and increase the reliability of this low-cost and carbon-free power for Railbelt customers.

POWER COST EQUALIZATION

The Power Cost Equalization Program (PCE) was enacted to lower the cost of electrical power born by rural residents and community facilities to a level comparable to that paid by residents of Alaska's larger cities.

Established in 1985, the PCE program makes payments to eligible rural electric utility companies and those companies credit their residential and community facility customers with payments made from the program up to a level of consumption. Those payments result in a reduction of the unit cost of power to residential and community customers. The pre-PCE cost of electricity in rural communities is almost always significantly more than the electricity costs borne by customers in Alaska's urban areas. Residential and community facility buildings and assets in nearly 200 communities see the benefits of PCE credits.

AEA calculates the amount an eligible electric utility is due based on a filing made by the utility and issues monthly payments. The PCE program staff also provides technical assistance to utility clerks who need help preparing and filing PCE reports. The PCE disbursements are funded from the PCE Endowment Fund. AS 42.45.085 provides that five percent of the PCE Endowment Fund's three-year monthly average market value may be appropriated to the PCE program. In recent years, the five-percent draw on the endowment has been sufficient to fully fund PCE disbursements. Fiscal year 2018 saw the enactment of statutory changes that addresses how excess PCE Endowment Fund earnings are to be used. These changes allowed the endowment fund earnings to pay for PCE program administration costs fully and the

earnings could also contribute \$30 million to other state programs such as the Community Assistance Program, the Renewable Energy Fund Program, and for some Rural Power System Upgrade projects.

AEA is now using a web portal through which participating PCE-communities may submit their Utility Monthly Reports (UMR). The electronically filed UMR should see shortened processing times and that should lead to quicker payments. As the web portal gains broader acceptance and as utility companies gain experience in electronically filing their monthly reports, there will likely also be a reduction in administrative costs to the electric utility companies and AEA. Hand in glove with the portal, AEA is migrating to mandated electronic fund transfer of funds for lowered costs and enhanced security of payments to utility companies.

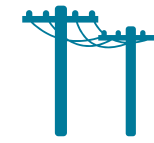
The cost of electricity for Alaska's rural residents is notably higher than for urban residents. PCE lowers the cost of electric service paid by rural residents. Ultimately ensuring the viability of rural utilities and the availability of reliable, centralized power.

In accordance with AS 44.83.940, AEA produces an annual PCE Statistical Report on the stats and operations of the program. Data is based on information submitted by the utility and is available by community and utility. To view the reports, visit akenergyauthority.org.



193

RURAL COMMUNITIES



91

ELECTRIC UTILITIES



81,200

ALASKANS



500 kWh

RESIDENTIAL

Residential customers are eligible for PCE credit up to 500 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 BUDGETED

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



St. George, Alaska

RURAL ENERGY

In rural Alaska, AEA constructs bulk fuel tank farms, diesel powerhouses, and electrical distribution grids. Through circuit rider, emergency response, and training for operators and utility managers, AEA supports the operation of these facilities. Through innovation and collaboration, AEA provides the tools and the guidance necessary for all rural communities to embrace a better energy future.

RURAL POWER SYSTEMS UPGRADE

AEA's Rural Power Systems Upgrade (RPSU) program builds and retrofits facilities in communities of less than 2,000 people, providing stable and reliable power. The typical efficiency improvement in diesel generation is between 10 and 20 percent. Upgrades may include efficiency improvements, powerhouse upgrades or replacements, line assessments, demand-side enhancements, heat recovery, and repairs to generation and distribution systems. The Denali Commission is AEA's major federal funding partner, which requires a state match of 50 percent for non-distressed communities or 20 percent for distressed communities.

RPSU also manages the State's allocation through the Environmental Protection Agency's (EPA's) Diesel Emissions Reduction Act (DERA). Pending yearly funding from Congress, states can apply for DERA funds based on population. In addition to the state program, EPA also has a tribal DERA program that awards funds competitively nationwide. AEA uses DERA funds to replace prime power diesel engines in rural Alaska. AEA selects communities for engine replacement through the DERA program based on current engine condition,

redundancy, efficiency, and engine eligibility. In Calendar Year 2021, AEA initiated five RPSU powerhouse replacement projects in Napaskiak, Nelson Lagoon, Nikolai, Rampart, and Venetie. Additional RPSU design and construction work, including engine replacement with DERA funds, was completed in Arctic Village (three engines) and Anvik (one engine). Design has been completed for the Chenega DERA project (two engines).

AEA has switched emphasis from full facility replacement to improving operations and maintenance to maximize the benefit to rural power systems. There are currently 22 active Maintenance and Improvement (M&I) projects, which target high return investment in eligible community power systems. Typical projects include replacing old switchgear and control systems, maximizing heat recovery, and updating engine controls to improve efficiency and sometimes replacing diesel gensets.



\$300M

DEFERRED COSTS

The deferred maintenance for RPSU is estimated at approximately \$300 million.



\$800M

DEFERRED COSTS

The deferred maintenance for BFU is estimated at approximately \$800 million.



BULK FUEL UPGRADE

Rural Alaska depends on liquid fuels for most of its energy needs — diesel for power generation, and heating and gasoline for transportation. Most rural villages are located along rivers or on the coast, so fuel is delivered primarily by barge. Delivery is often limited by season or weather. Most communities receive barge fuel deliveries once or twice a year.

Many of rural Alaska's bulk fuel facilities were built in the mid-1900s and do not comply with modern regulations. Yet they typically continue in service until upgraded or replaced, posing risks to personal safety and the environment.

AEA's Bulk Fuel Upgrade (BFU) program repairs or upgrades fuel storage facilities in communities with fewer than 2,000 residents. These facilities help decrease the per-unit cost of fuel by allowing the community to purchase fuel in bulk quantities. In Calendar Year 2021 there are five full BFU projects underway.

In recent years, AEA has switched its emphasis from bulk fuel facility replacement to Maintenance and Improvement (M&I) projects. There are 18 M&I projects planned currently, which target high-return investment in eligible community power systems. In Calendar Year 2021, AEA completed a full-facility BFU project in the traditional Alutiiq coastal Native Village of Tatitlek.

56

Operators from
38 communities
received training

450

Communities received
Circuit Rider and/or
Technical Assistance

1

Community
received electrical
emergency assistance



AEA provides training courses for
power plant operators to help ensure that rural
utility staff have the essential skills to operate their power plant.

AEA provides soup to nuts technical assistance to rural utilities to ensure that infrastructure lasts its full economic life, preventing catastrophic electrical emergencies, and building community self-sufficiency. This helps assure safe, reliable, operation of rural Alaska electric generation equipment in which millions of dollars are invested.

RURAL TRAINING



AEA's Rural Training program develops operators with the skills necessary to operate their energy infrastructure and keep operators compliant with current industry standards. In Calendar Year 2021, 56 operators from 38 communities trained in Bulk Fuel and Power Plant Operations at the Alaska Vocational Technical Center. AEA is pioneering the use of 3D imaging coupled with data from every rural powerhouse to create new ways for operators to learn about their site's specific needs. AEA has also developed an online training curriculum using the same technology decreasing the cost of travel and expanding the training audience.



CIRCUIT RIDER AND TECHNICAL ASSISTANCE

The Circuit Rider and Technical Assistance programs provide essential assistance to reduce the number of emergency responses needed when there are power outages in rural communities. In Calendar Year 2021, Circuit Riders assisted eligible utilities over 450 times in providing remote monitoring, training, technical consultation. Onsite assistance and minor repairs to power systems were performed in 82 communities.



ELECTRICAL EMERGENCY ASSISTANCE

AEA provides power-related electrical emergency assistance to rural communities. Electrical emergency assistance encompasses risk to life or property due to power failure. Thankfully this assistance is rarely needed. In Calendar Year 2021, one emergency response was required.

ALTERNATIVE ENERGY AND ENERGY EFFICIENCY

AEA's energy technology programs are at the forefront of growing Alaska's clean energy economy. The programs work with local governments, non-profits, and tribal organizations to implement new energy solutions. They also provide technical assistance, funding, and training to increase knowledge about cost-saving energy technologies.



BIOMASS

Biomass heat reduces diesel fuel use, keeps the money spent on fuel (wood) within the community, and creates local jobs. AEA's biomass program funded over 20 operating woody biomass heating systems for schools and public buildings and provided technical support for over 50 operating systems in the state. Along with the United States Forest Service (USFS), the program has funded over 170 preliminary studies to evaluate a community's biomass potential. In 2021, AEA partnered with the Denali Commission and USFS to fund the design and construction of projects in 10 communities. Despite COVID-19 travel limitations, AEA developed an audit and training program to support existing systems to ensure longevity and sustainability of the systems.



HYDROELECTRIC

Hydroelectric power is Alaska's largest source of renewable energy and supplies more than 27 percent of the state's electrical energy in an average water year. AEA's hydroelectric program assists approximately 51 utility-scale hydroelectric projects throughout the state. The majority of Alaska's existing hydro projects are located in the Southeast and Southcentral regions of Alaska. Projects range from concepts to operational hydroelectric facilities. The hydroelectric program focuses on improving efficiency and quality in development, lowering the cost of construction, and coordinating with state, federal, municipalities, tribal entities, and private investors in analyzing, planning, and generally assisting hydroelectric project development.



SOLAR

Alaska's latitude presents the challenge of minimal solar energy during long winter months when energy demand is greatest, however there is growing interest in solar photovoltaic (PV) systems. These systems range from on and off-grid residential to utility scale PV. Solar generation in the shoulder months (spring and fall) is often impressive in northern latitudes where clear skies, cool temperatures, dry air and bright, reflective snow all increase solar generation. Solar PV systems can actually exceed their rated output during these times of year. AEA provides solar energy information, resources, and technical assistance. The Power Project Fund and the Renewable Energy Fund have provided grant and loan financing for several PV projects on the Railbelt and in rural Alaska.



WIND

Today wind energy accounts for 2.4 percent of the state's total energy production and that percent is growing. Since 2012, Alaska's wind energy capacity has increased 400 percent. This growth is supported by AEA's Renewable Energy Fund and information sharing among wind energy producers and stakeholders. AEA's Alaska Wind Working Group and its Wind Advisory Panel meet regularly to discuss policy issues necessary to advance wind energy. Funding for wind projects is a frequent topic at these meetings. In partnership with the Wind Working Group, AEA facilitates annual educational events including the wind-diesel and energy storage workshops. AEA assists communities in evaluating wind energy and often aids in rural community decision-making.

10

BIOMASS PROJECTS FUNDED

In 2021, AEA partnered with the Denali Commission and USFS to fund the design and construction of projects in 10 communities.

27%

HYDROELECTRIC POWER

Hydroelectric power is Alaska's largest source of renewable energy and supplies more than 27 percent of the state's electrical energy in an average water year.

400%

WIND ENERGY CAPACITY

Alaska's wind energy capacity has increased 400 percent in the last decade.

Pillar Mountain Wind Farm, Kodiak, Alaska

BENEFITS OF ENERGY EFFICIENCY

Outdoor lighting retrofit completed at Nenana City School District.



**Stimulates
the Economy**



**Money in
your Pocket**



**Energy Efficient
Buildings**

ENERGY EFFICIENCY AND CONSERVATION

Efficient production and consumption of energy saves costs, reduces demand, and are often the lowest hanging fruit for energy solutions. It is available in every community in Alaska. AEA focuses its end use energy efficiency program activities on commercial buildings, public buildings, industrial facilities, and electrical efficiency. Additionally, AEA organizes the collaborative multi-stakeholder group called the Alaska Energy Efficiency Partnership.

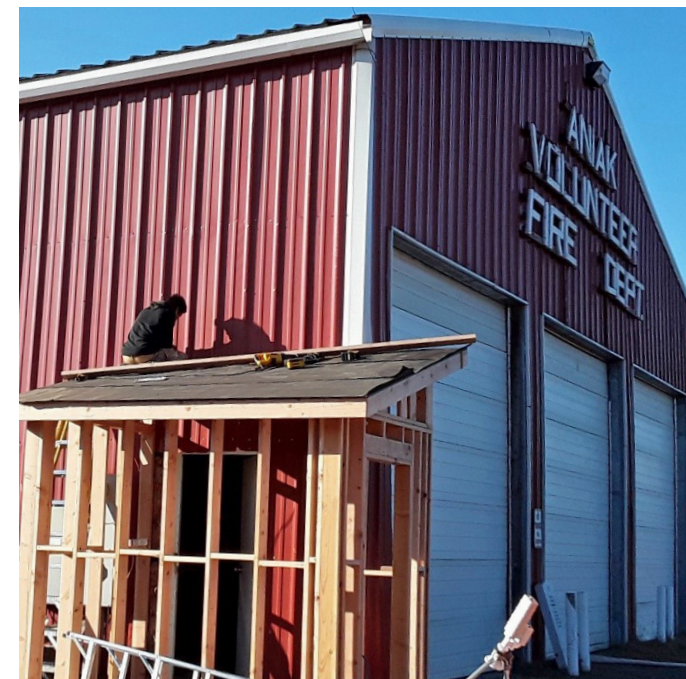
Alaska Commercial Property Assessed Clean Energy (C-PACE) Program

AEA was awarded \$300,000 from the Department of Energy with \$60,000 from state matching funds to stand up an Alaska C-PACE program. C-PACE is an innovative clean energy-financing tool that provides access to 100 percent upfront capital for building owners who want to upgrade their buildings with more energy efficient systems. The Municipality of Anchorage was the first to adopt its enabling

ordinance. AEA and its project partners are engaging stakeholders across Alaska in C-PACE implementation strategies. Their initiatives include designing uniform program parameters, drafting, moving C-PACE programs through the local ordinance process, and building the framework for the role of the statewide C-PACE Program Administrator. By 2022, AEA hopes to have Alaska C-PACE enabled in three Alaska municipalities.

Alaska Energy Efficiency Partnership (AEEP)

At the center of AEA's energy efficiency and conservation outreach efforts is the AEEP, a stakeholder group of over 50 public, private, and non-profit entities from around Alaska who meet quarterly to discuss energy efficiency and conservation efforts in Alaska. The group's mission is to improve the coordination of efforts promoting the adoption of greater end-use energy efficiency measures and energy conservation behaviors through information sharing and integrated planning so that Alaska may become the most energy efficient state in the nation.



Through a partnership between the tribe and the City, Aniak will be performing lighting retrofits at City Hall, Library, Public Works, Sewer Lift Stations, Fire Department and the Traditional Council/Community Center. Installations will be complete by June 2022.

Power Pledge Challenge (PPC)

AEA partnered in the annual PPC, which educates middle school students in rural and urban Alaska on the benefits of energy efficiency and conservation. The yearlong project increases energy literacy and included 1,014 students from 21 schools in 12 communities who participated in 52 monthly challenges that incorporated developing community energy profiles, energy saving public service announcements, and calculating energy savings by using efficient holiday decorations.

Remote Alaska Communities Energy Efficiency Challenge (RACEE)

AEA's efficiency program provides technical assistance through the Department of Energy for nine communities participating in the RACEE. The RACEE projects support upgrades and renewable energy installations in rural Alaska to help save money, energy, and fuel.

Village Energy Efficiency Program (VEEP)

VEEP is an AEA grant program established by Alaska Legislature in 2010 to reduce per capita consumption through energy efficiency. AEA leveraged federal State Energy Program funds and a grant from Wells Fargo and the Denali Commission to meet our mission. Through a public-private partnership, VEEP received a \$1 million grant from Wells Fargo to provide 47 communities with outdoor lighting retrofits. The local match was \$397,000, for a total investment of nearly \$1.1 million. The project also leveraged Denali Commission funds; with \$428,483 of Denali Commission funds and a local match of \$110,917, AEA enabled 17 additional communities the same opportunity. Despite the COVID-19 pandemic, communities have actively implemented their projects. Thirty-seven sites are complete, 1,150 lights have been replaced, and 520,450 kWh per year will be saved. Cost per kWh in these communities ranges between \$0.19–\$1.00.

ELECTRIC VEHICLES

AEA made significant progress over the year in leading Alaska's effort to minimize barriers to electric vehicle (EV) adoption. AEA continued its sponsorship of the Alaska Electric Vehicle Working Group. The Working Group met quarterly and discussed a wide range of topics including how to grow the EV market, utility demand charges, rate structures, and siting criteria for publicly accessible charging locations.

AEA increased EV awareness and infrastructure deployment through a range of strategic activities. In partnership with the Dimond Center and the Alaska EV Association, AEA hosted the first EV Car Show and Ride and Drive event. The show earned significant media attention and gave attendees the chance to test drive an EV, talk to a local utility, and visit with EV owners on the benefits and challenges of owning an EV.

Lack of EV charging infrastructure remains a significant barrier to EV market adoption. To overcome this barrier AEA developed a multi-pronged approach for the installations of fast-charging and community-based Level 2 chargers. Utilizing State Energy Program (SEP) funds, three Level 2 chargers were installed in downtown Anchorage at two state-owned facilities. More EV public charging stations are planned for deployment in 2022. AEA hopes to see an EV fast-charging network along the highways and at Marine Highway ferry terminals in the near future.



The Infrastructure Investment and Jobs Act offers once-in-a-lifetime funding to complete a statewide EV fast-charging network, as well as community-based charging installations in rural and urban areas throughout the state.



AEA joined the Dimond Center in celebrating the ground breaking of its AEA-funded EV Fast-Charging station during the first EV Car Show and Ride and Drive event held on August 7, 2021. Photo by Tim Leach.

SITES AND CHARGERS

9/15/8

9 Sites Selected
15 Fast Chargers
8 Level 2 Chargers

TOTAL INVESTMENT

\$1.52M

VW: \$875,000
SEP: \$90,000
Private: \$555,000

ANTICIPATED COMPLETION

2022

Alaska's first EV fast-charging corridor will be operational by summer 2022.



POWER PROJECT FUND (PPF)

AEA administers PPF loan requests from qualified applicants seeking low-interest loans. PPF allows local utilities, local governments, or independent power producers to seek low-cost funding for development, expansion, or upgrade of electric power facilities, including distribution, transmission, efficiency and conservation, bulk fuel storage, and waste energy. PPF is a unique financial instrument that provides affordable loan funds for early stage energy projects, such as reconnaissance or feasibility studies. Loan terms are correlated to a project's useful life. Interest rates on PPFs loans are formula-driven and related to the 30-year taxable municipal bond yield index, with a prevailing rate of 2.79 percent as of January 31, 2022.

School Bus Replacement (\$4.3 million)

In 2019, AEA funded the purchase of 33 school buses in eight school districts: Alaska Gateway (Tok) (1), Anchorage (13), Juneau (1), Kake City (2), Kenai Peninsula Borough (7), Kodiak Island (1), Matanuska-Susitna Borough (4), and Southeast Island (Prince of Wales Island) (4).



Alaska's first all-electric school bus in Tok, Alaska.

GRANTS AND LOANS

AEA contributes in the energy space by administering several funding programs. The agency also monitors funding sources including Tribal and Indian Energy loan programs and United States Department of Energy (USDOE) funding opportunities. AEA's strong relationship with the USDOE, awareness of funding, and technical assistance available from National Laboratories is of benefit to all Alaskans.

RENEWABLE ENERGY FUND (REF)

The REF was established in 2008 to help Alaskans reduce and stabilize their cost of energy through the development of viable renewable energy projects. The program is designed to produce cost-effective renewable energy for heat and power, increasing resiliency through the diversification of generation sources. To date, REF has made 244 grants to develop or construct renewable energy projects statewide. There are now over 95 operating projects built with contributions from REF, collectively saving more than 30 million gallons of diesel each year. Annual renewable energy generation increases each year as more REF-funded projects become operational. From 2008 to 2021, \$275 million was made available to REF projects. State funding has been matched with

hundreds of millions of dollars from other sources to develop these renewable energy projects.

In Fiscal Year 2020, AEA solicited applications for REF Round 13. In consultation with the Renewable Energy Fund Advisory Committee (REFAC), AEA recommended 11 projects for funding. In September 2021, the Legislature approved AEA's recommendation and appropriated \$4.7 million for awards to the recommended projects. AEA is currently evaluating 39 funding applications submitted for consideration during REF Round 14. AEA's consultation with the REFAC is planned for late March with a subsequent submission to the Legislature of projects recommended for funding in FY2023 planned for early April. The REF grant program sunsets on June 30, 2023. An extension of its sunset date is being sought.

VOLKSWAGEN (VW) SETTLEMENT FUNDS

On January 29, 2018, Alaska became the beneficiary of \$8.125 million from the VW Environmental Mitigation Trust (Trust) established as part of a court settlement for mitigation projects to reduce nitrogen oxide (NOx) emissions. AEA is the State's lead agency to develop and implement a Beneficiary Mitigation Plan to distribute the funds for eligible mitigation actions that result in a total lifetime reduction of NOx emissions by 10.5 tons. The projects selected thus far will reduce NOx emissions by more than 2.5 times Alaska's mitigation goal. A summary of the disbursement of funds includes:

Replacement of Diesel Engines used for Prime Power (\$1.14 million + match funds)

AEA has set aside Trust funds as a voluntary match for AEA's Diesel Emission Reduction Act (DERA) program to fully leverage the federal funds allocated to the State by the EPA. By contributing the voluntary match, the State can receive 50 percent more EPA DERA funds to replace diesel engines or gensets in rural powerhouses. Engine/genset replacement projects were completed in summer and fall 2020 in Chignik Lake (2), Circle (2), Takotna (2), and Tuluksak (1); and in October 2021 in Arctic Village (3). Replacements are expected to occur in Chenega Bay (2) in 2022. Funds have also been obligated to replace gensets in Grayling, Platinum, and Ruby.

EV Charging Infrastructure (\$875,000)

Alaska allocated 15 percent of the VW Trust funds (\$1.25 million) for EV charging installations. AEA developed a phased approach to establish a statewide interconnected EV fast-charging network along the highways and ferry terminals, as funding allows. In 2021, AEA utilized VW Trust funds, SEP funds, and private matching funds from site hosts to develop the first phase of the fast-charging network, connecting Seward and Homer to Healy. Additional VW Trust funds for EV chargers will be disbursed in 2022.

All-electric Garbage and Box Trucks (\$25,000)

AEA has committed \$25,000 to the Municipality of Anchorage for the purchase of an energy-storage based fast charger for their new all-electric garbage truck and electric box trucks.

Public Transit Bus Replacement (\$234,000)

Utilizing VW Trust funds, AEA funded 20 percent of the state's first all-electric transit bus. The 40-foot bus, purchased by the City and Borough of Juneau (CBJ) for Capital Transit, was ordered in 2020 and began passenger service in April 2021.

FY2021 FINANCIAL HIGHLIGHTS*

BALANCE SHEETS	June 30, 2021	June 30, 2020
Assets and deferred outflows of resources:		
Restricted Investments securities and cash	1,243,953	1,180,885
Loans, net	26,011	27,032
Capital assets, net	396,079	388,046
Receivables and other assets	6,457	3,919
Total Assets	1,672,500	1,599,882
Liabilities and net position:		
Liabilities		
Bonds payable	69,099	63,684
Other bond liabilities	569	1,052
Payables and other liabilities	33,153	1,096,980
Total liabilities	102,821	1,161,716
Net Position	1,569,679	438,166
Total liabilities and net position	1,672,500	1,599,882

REVENUES, EXPENSES, & CHANGES IN NET POSITION	June 30, 2021	June 30, 2020
Operating revenues:		
Federal grants	8,575	7,845
Revenue from operating plants	22,657	21,361
State operating and capital revenues	3,922	4,719
Interest on loans	339	362
Other operating revenues	5,008	1,684
Total operating revenues	40,501	35,971

REVENUES, EXPENSES, & CHANGES IN NET POSITION (CONT)	June 30, 2021	June 30, 2020
Operating Expenses:		
Grants and projects	20,370	18,714
Power cost equalization grants	25,557	29,255
Interest expense	1,159	827
Plant operating	7,797	5,376
General and administrative	20,605	5,742
Provision for loan loss	(33)	61
Loss on disposal of asset	-	-
Depreciation	12,356	10,917
State of Alaska appropriations and transfers	-	21,288
Other project expenses	-	-
Total operating expense	87,811	92,180
Operating loss	(47,310)	(56,209)
Investment Income, net	151,983	51,411
State of Alaska reappropriations and transfers	1,017,213	(66)
Capital contributions	-	-
Increase (decrease) in net position	1,121,886 ⁽¹⁾	(4,864) ⁽²⁾

*Unaudited – Derived from Audited Financial Statements (in thousands).

⁽¹⁾ Beginning in FY21, the sweep of the PCE fund into the Constitutional Budget Reserve (CBR) was deemed ineligible and was removed from the sweep by legal ruling. Therefore AEA's fund balance increased with the retention of the Endowment Funds. Additionally, in FY21 beginning net position/fund balance was restated to record revised amounts related to sweep activity in the due to the State of Alaska (\$7,388) and revised amounts related to the general activity in the due to funds managed by Treasury (\$2,239).

⁽²⁾ In FY19, State of Alaska's Department of Law opined that the PCE Endowment Fund was subject to the State's general fund unobligated fund balance sweep of certain money into the State's Constitutional Budget Reserve. On June 30, 2019, \$1.05 billion was swept, with the reversal of the sweep, pursuant to legislation, happened on July 1, 2019. The same sweep process occurred on June 30, 2020, which netted the reversal from FY19 with the FY20 sweep amount of \$1.06 billion. FY20 is the first year that the reversal and new sweep occurred creating an increase to overall net position.

BOARD OF DIRECTORS



J. DANA PRUHS

Chair, Public Member



JULIE SANDE

*Commissioner, Alaska Department
of Commerce, Community, and
Economic Development*



ALBERT FOGLE

Public Member



BILL KENDIG

Public Member



ANNA MACKINNON

*Division Director, Alaska
Permanent Fund*



BILL VIVLAMORE

Public Member



CURTIS W. THAYER

Executive Director



TIM SANDSTROM, PMP

Director, Rural Programs



BRANDY M. DIXON

Communications Director



DONA KEPPERS

Chief Financial Officer



AUDREY ALSTROM, PE

*Director, Alternative Energy and
Energy Efficiency Programs*



LINDA SENN, PH.D.

Human Resources Director



KIRK WARREN, PE, PMP

*Director, Engineering and
Energy Development*



T.W. PATCH, JD

Director of Planning



TERENCE CATO

Information Technology Director

EXECUTIVE TEAM



ADDRESS

813 W NORTHERN LIGHTS BLVD
ANCHORAGE, AK 99503

PHONE & FAX

P : (907) 771-3000
F : (907) 771-3100

EMAIL & WEB

INFO@AKENERGYAUTHORITY.ORG
WWW.AKENERGYAUTHORITY.ORG
