akenergyauthority.org

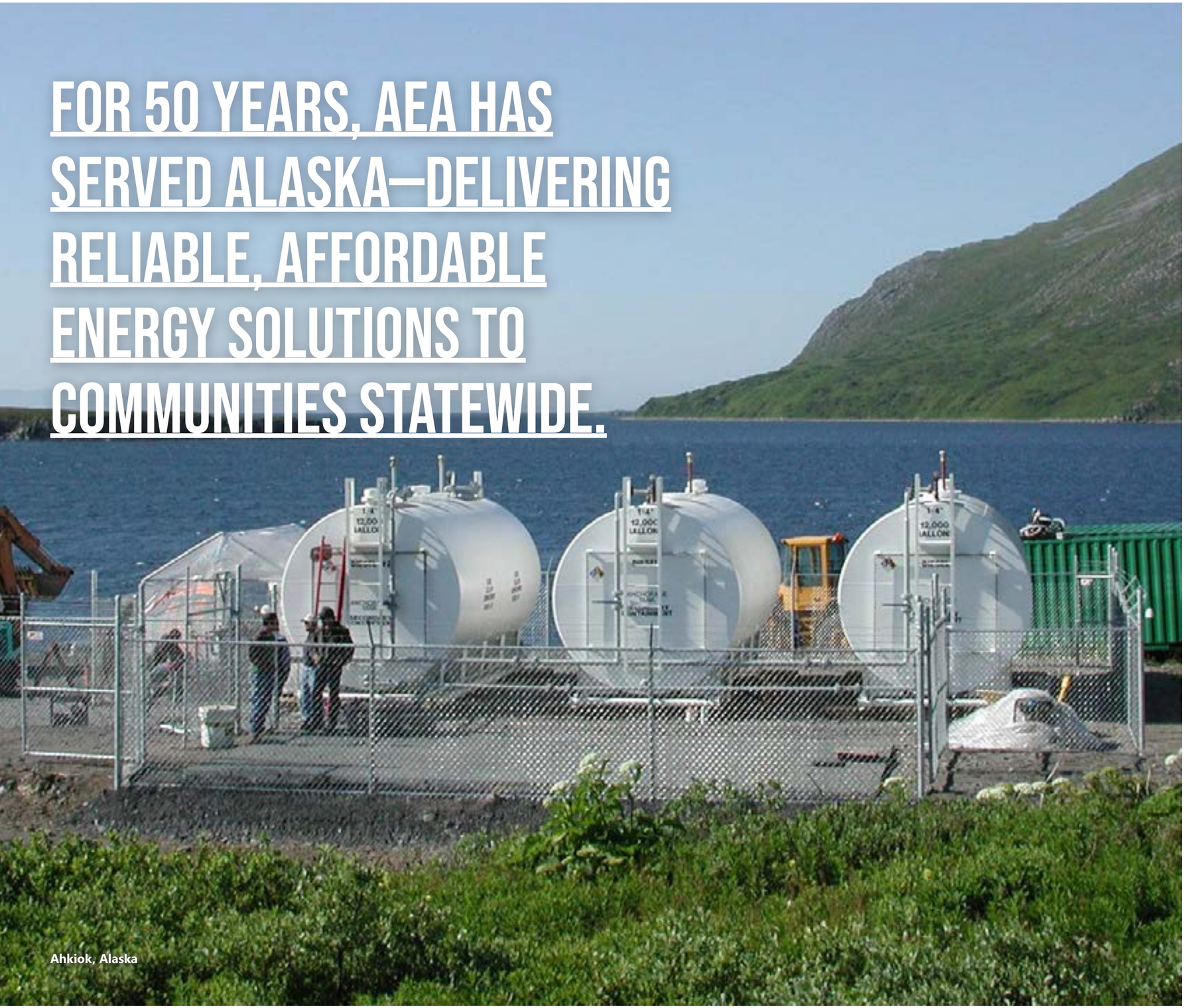
# 2025 ANNUAL REPORT

Bradley Lake Hydroeletric Project, Homer, Alaska

THE ALASKA ENERGY AUTHORITY IS THE STATE'S TRUSTED LEADER IN REDUCING ENERGY COSTS AND ADVANCING STATEWIDE ENERGY POLICY.

ALASKA ENERGY AUTHORITY

# FOR 50 YEARS, AEA HAS SERVED ALASKA—DELIVERING RELIABLE, AFFORDABLE ENERGY SOLUTIONS TO COMMUNITIES STATEWIDE.



Ahkiok, Alaska



# TABLE OF CONTENTS



This publication summarizes the activities and financial condition of the Alaska Energy Authority (AEA) and is submitted in accordance with Alaska Statute 44.83.940. Designed and produced by AEA. Five hundred copies were printed by Service Business Printing in Anchorage, Alaska, at a cost of $7.25 per copy.


Alaska Sustainable Energy Conference, Anchorage, Alaska

# LETTER FROM THE GOVERNOR

**As we look toward the future, Alaska stands at a pivotal moment in its energy journey. For 50 years, the Alaska Energy Aurhotiy (AEA) has been a cornerstone of progress—advancing reliable, affordable energy solutions for communities from the Railbelt to the most remote corners of our state.**

Dear Fellow Alaskans,

Our energy landscape is as vast and diverse as our geography. While most Alaskans live along the Railbelt, nearly a third reside in rural communities, many off the road system, each with distinct challenges and opportunities. By strengthening our backbone transmission system and deploying innovative solutions statewide, we are building an energy future for all. Alaska's history is one of resilience and vision. Today, we're preparing our infrastructure for emerging technologies and leveraging our resources to attract large-scale industrial growth and new export opportunities.

With this momentum, AEA is driving forward major initiatives that will deliver real benefits for Alaskans. The Railbelt Transmission Organization, established through House Bill 307 and housed within AEA, creates fair, transparent grid access and cost recovery. The Bradley Lake Hydroelectric Expansion, the largest renewable energy project in Alaska in more than 35 years, will boost clean power by 50 percent, support thousands of jobs, and generate hundreds of millions in economic output. The Cook Inlet PowerLink, backed by one of the largest federal energy grants in our state's history, bolsters reliability for 75 percent of Alaskans and adds redundancy for military and industrial users. Collectively, these projects will unlock new generation, improve reliability, and enhance energy security. By lowering the cost of power on the Railbelt, we also reduce the costs for rural Alaskans under the Power Cost Equalization formula.

These investments mean more jobs for Alaskans, lower energy costs for families, and new opportunities for rural communities. As we pursue this progress, we remain committed to partnerships that provide certainty and durability. By working with our federal partners and through initiatives like the Alaska Sustainable Energy Conference, which brings together visionaries, researchers, policymakers, and investors, we ensure collaboration drives progress.

I am proud of the momentum we have built together. The next 50 years belong to Alaska. Let's keep moving North to the Future, delivering opportunity, security, and prosperity for every community.

Sincerely,

**Mike Dunleavy**
Governor



# LETTER FROM THE CHAIR

**As AEA marks 50 years of service, the Board reflects on a legacy built on resilience, innovation, and partnership. This milestone is not only a celebration of the past—it is a call to action for the future.**

Our role as stewards of public resources and fiduciary guardians has never been more critical as Alaska navigates an evolving energy landscape.

The Board's responsibility is clear: provide governance that ensures accountability, transparency, and strategic alignment with Alaska's long-term energy needs. We are committed to guiding AEA through complex challenges—strengthening transmission infrastructure, advancing renewable energy, and preparing for emerging technologies—while safeguarding affordability and reliability for all Alaskans.

This past year also marked the Board's first year operating fully as a governance board. Comprised of members with diverse regional and industry perspectives, the Board has focused on strengthening its role through open dialogue, thoughtful oversight, and a shared commitment to long-term strategy.

Through an engaged strategic planning process, the Board has worked in close alignment with AEA's executive director and team—fostering transparency, trust, and a clear understanding of roles. This collaborative approach positions AEA to move forward with clarity and confidence as it enters its next 50 years.

Looking ahead, the Board is focused on three priorities:

Strategic Planning: We are shaping a vision that anticipates high-load growth, supports economic development, and integrates next-generation energy technologies such as geothermal, nuclear, and storage.

Infrastructure Investment: We will continue to champion projects that strengthen the Railbelt backbone and deliver sustainable solutions for rural communities, ensuring equity across Alaska's diverse regions.

Partnership and Policy: Collaboration with state, federal, and private partners remains essential. The Board advocates for durable policies and financing frameworks that enable long-term investment and innovation.

As we enter the next chapter, our commitment is unwavering: to uphold the trust placed in us, to act with integrity, and to ensure that AEA remains a catalyst for progress. The decisions we make today will shape Alaska's energy future for generations to come.

On behalf of the Board, thank you for your confidence and support. Together, we will build an energy system that reflects Alaska's values—resilient, affordable, and forward-looking.

**Clay Koplin**
Chair

# LETTER FROM THE EXECUTIVE DIRECTOR

**As we enter 2026—our 50th year of service—AEA moves forward with momentum and purpose. Our vision is clear: to build a resilient, reliable, and affordable energy future for all Alaskans—meeting today's needs while laying the foundation for tomorrow.**

Turning vision into action requires deliberate, long-term investments in Alaska's energy backbone, the Railbelt. One of the most significant is the Cook Inlet PowerLink—a high-voltage direct current transmission investment that will connect the Southern and Central Railbelt with subsea and overland links, unlock constrained generation, and provide redundancy for critical loads, including military and future industrial customers. The project's total cost is $413 million, supported by a $206.5 million federal award from the U.S. Department of Energy and secured matching funds. Remaining match financing continues to advance. Engineering and environmental work progressed in 2025, with permitting, procurement, and design milestones sequenced to keep the project on track for commissioning in 2032.

In parallel, we advanced the Bradley Lake Expansion Project—the largest renewable energy investment in Alaska in more than 35 years—with a proposed $400 million upgrade to the Bradley Lake Hydroelectric Project. By diverting water from Dixon Glacier and raising the dam to expand storage, the project would boost Bradley Lake's hydropower production by up to 50 percent, displacing natural gas on the Railbelt and strengthening long-term energy security. In early 2026, AEA reached a key regulatory milestone by submitting its Draft Amendment Application to the Federal Energy Regulatory Commission. Design and technical review continue as we coordinate with utilities, Tribes, regulators, and stakeholders to prepare a Final Amendment Application in June 2026. Construction is anticipated in 2028, with operations targeted for 2031. We also made progress on regulatory, governance, and market infrastructure that positions Alaska for more efficient and transparent transmission operations. Building on House Bill 307, AEA continued work associated with the Railbelt Transmission Organization—including development of the Open Access Transmission Tariff and regulatory review with the Regulatory Commission of Alaska—steps that support cost-effective backbone transmission and fair access for future projects.

At the same time, AEA continued to drive improvements in rural Alaska. Our teams advanced bulk fuel upgrades and modernized rural power systems—investments that deliver safe, reliable energy to dozens of communities across the state. Through statewide infrastructure inventory and assessment using 3D imaging, drone capture, and GIS mapping, we are targeting resources where they will have the greatest impact, reduce energy costs and strengthen long-term resilience for rural Alaskans.

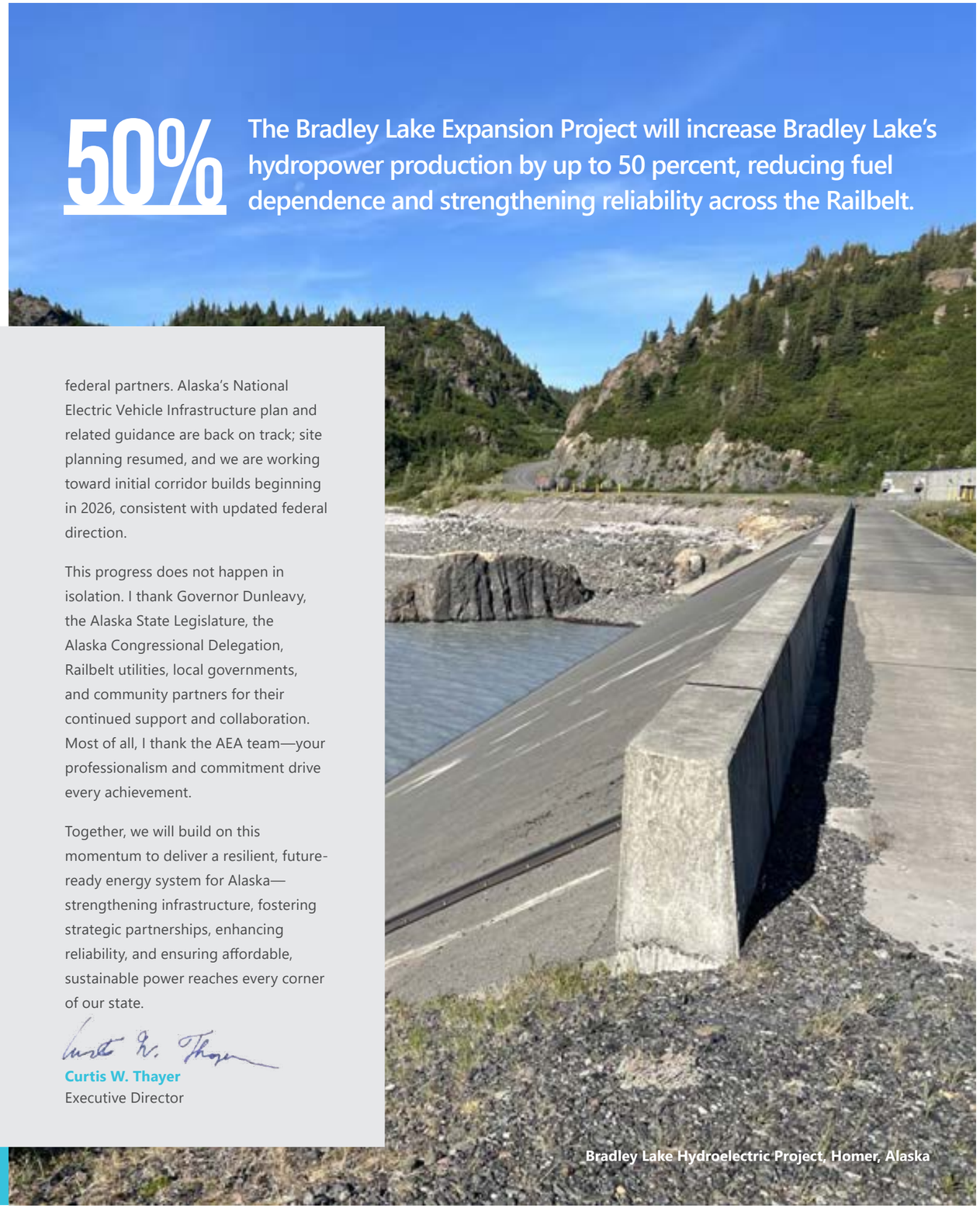
We also maintained momentum on electric vehicle infrastructure with our federal partners. Alaska's National Electric Vehicle Infrastructure plan and related guidance are back on track; site planning resumed, and we are working toward initial corridor builds beginning in 2026, consistent with updated federal direction.

This progress does not happen in isolation. I thank Governor Dunleavy, the Alaska State Legislature, the Alaska Congressional Delegation, Railbelt utilities, local governments, and community partners for their continued support and collaboration. Most of all, I thank the AEA team—your professionalism and commitment drive every achievement.

Together, we will build on this momentum to deliver a resilient, future-ready energy system for Alaska—strengthening infrastructure, fostering strategic partnerships, enhancing reliability, and ensuring affordable, sustainable power reaches every corner of our state.

**Curtis W. Thayer**
Executive Director

**50%** The Bradley Lake Expansion Project will increase Bradley Lake's hydropower production by up to 50 percent, reducing fuel dependence and strengthening reliability across the Railbelt.



Bradley Lake Hydroelectric Project, Homer, Alaska

**Partner with AEA and explore funding opportunities at akenergyauthority.org**

Kenai Peninsula, Alaska

# OWNED ASSETS

**In the 1980s, AEA helped shape Alaska's energy future by developing resources that diversified the economy and expanded access to affordable energy. AEA built and owns key Railbelt infrastructure—including the Bradley Lake Hydroelectric Project, the Sterling-to-Quartz Creek transmission line, and the Alaska Intertie—that strengthen system reliability and reduce costs for Railbelt consumers.**

## Bradley Lake Hydroelectric Project

The Bradley Lake Hydroelectric Project was energized in September 1991. Located near Homer, Alaska, the project has provided low-cost electricity to the Railbelt for more than 35 years. The 120-megawatt (MW) facility generates about 10 percent of the Railbelt's annual electricity and delivers some of the lowest-cost power to more than 75 percent of Alaskans from Homer to Fairbanks.

The project was funded through legislative appropriations, with AEA revenue bonds repaid by the participating utilities. The Bradley Lake Project Management Committee manages day-to-day operations, subject to AEA's nondelegable rights, duties, and responsibilities. In 2020, Bradley Lake's energy output increased by 10 percent with completion of the West Fork Upper Battle Creek Diversion Project. Later that year, AEA purchased a component of the interconnected transmission system on the Kenai Peninsula (Sterling-Quartz Creek) to reduce losses and improve system reliability.

With decades of proven performance, the Bradley Lake Hydroelectric Project now serves as the foundation for the Bradley Lake Expansion Project, AEA's next major investment in Railbelt reliability and affordability.

## Sterling to Quartz Creek Transmission Line

In December 2020, AEA acquired the Sterling Substation–Quartz Creek Substation transmission line, a 39.3-mile Kenai Peninsula corridor built as part of the Bradley Lake Project to deliver hydropower to Railbelt utilities. The line operated at 115 kilovolts (kV) and 69 kV and sustained extensive damage during the 2019 Swan Lake Fire, requiring four months and $12 million in repairs before returning to service. In 2023, AEA removed the decommissioned 69 kV segment.

In fiscal year 2025, AEA began a multi-year upgrade to replace the line and raise it from 115 kV to 230 kV standards. This $90 million investment strengthens Railbelt infrastructure by improving resilience, reducing line loss, and enhancing reliability. The work is proceeding in three phases: Phase 1, completed in February 2025, upgraded about eight miles; Phase 2 spans 17 miles, crosses the Kenai National Wildlife Refuge, and is in design and environmental review; Phase 3 is scheduled for construction in 2028.

Once complete, the upgrades will improve long-term reliability, support future transmission expansion north of Bradley Lake, and enable more efficient power delivery across the Railbelt.



**3,250**

**JOBS CREATED**

**The Bradley Lake Expansion Project will create 3,250 direct, indirect, and induced jobs in Alaska.**

**$260M**

**LABOR INCOME**

**The project would generate about $260 million in wages and benefits for workers.**

**$584M**

**TOTAL ECONOMIC OUTPUT**

**An estimated $584 million in total economic output would be generated across Alaska.**

## Bradley Lake Expansion Project

AEA is advancing the Bradley Lake Expansion Project, a major upgrade to the AEA-owned Bradley Lake Hydroelectric Project designed to strengthen Railbelt reliability, reduce reliance on Cook Inlet natural gas, and support long-term energy affordability. The project would divert water from the Dixon Glacier into the existing Bradley Lake reservoir by constructing a small diversion dam near the glacier, drilling a roughly 4.6-mile tunnel to convey water into Bradley Lake, and raising the existing dam and spillway by 16 feet to accommodate new inflows and expand energy storage.

By building on proven infrastructure, the expansion would increase annual hydropower production by up to 50 percent—about 165,000 megawatt-hours per year—enough electricity to power up to 30,000 homes. The additional hydropower is expected to displace about 1.5 billion cubic feet of natural gas annually, offsetting about 7.5 percent of projected unmet Railbelt demand by 2030.

During the past year, AEA reached a major regulatory milestone by submitting its Draft Amendment Application (DAA) to the Federal Energy Regulatory Commission (FERC). The filing proposes amendments to AEA's existing FERC license, describes project operations, and includes a Preliminary Draft Environmental Analysis to support early review and stakeholder input before AEA finalizes the application.

The project would also deliver significant economic benefits to Alaska during construction, including more than $584 million in total economic output, about 3,250 jobs, and $260 million in labor income statewide. Following the DAA filing, agencies will review the proposal as AEA continues coordinating with utilities, Tribes, regulators, and other stakeholders and prepares a Final Amendment Application for submission in June 2026.

Bradley Lake Hydroelectric Project, Homer, Alaska

**1,470**

**JOBS CREATED**

**CIPLink would support 1,470 jobs—including 950 direct jobs and 520 indirect and induced jobs.**

**$129M**

**LABOR INCOME**

**The project would generate an estimated $129 million in wages and benefits for workers across the state.**

**$332M**

**TOTAL ECONOMIC OUTPUT**

**An estimated $332 million in total economic output would be generated statewide.**

## Cook Inlet PowerLink

On September 1, 2024, AEA received a Grid Resilience and Innovation Partnership grant to advance the Cook Inlet PowerLink (CIPLink), an eight-year effort to strengthen the Railbelt Transmission System. CIPLink represents the largest reliability and resilience investment in the Railbelt in decades. The U.S. Department of Energy has obligated $206.5 million toward the project, which requires a 100 percent nonfederal match, for a total estimated project cost of $413 million.

CIPLink is a high-voltage direct current (HVDC) subsea transmission project—the first application of HVDC technology in Alaska—using proven transmission technology to create a redundant electrical intertie across Cook Inlet, connecting the Kenai Peninsula to Anchorage load centers through approximately 40 miles of subsea cable, eight miles of overland cable, and new converter stations between the Kenai Peninsula and Beluga. The system is designed to enable up to 200 megawatts of bidirectional power flow, unlocking constrained generation and creating a redundant electrical intertie across Cook Inlet.

By adding a second transmission pathway between the Kenai Peninsula and Anchorage load centers, CIPLink will improve system reliability, reduce the risk of widespread outages from a single corridor failure, and enhance energy security as Cook Inlet natural gas production declines.

CIPLink also supports long-term system planning by enabling the transmission of power from new and expanded generation resources, including the Bradley Lake Expansion Project, and improving access to least-cost power across the Railbelt. By lowering overall Railbelt system costs, CIPLink benefits the Power Cost Equalization program and ease electricity costs for rural households and community facilities that rely on it.

The project delivers significant economic benefits during construction. Over the eight-year build period, CIPLink is expected to generate approximately $331.7 million in total economic output, including $221.7 million in direct in-state expenditures, and support 1,470 jobs (950 direct, 150 indirect, and 370 induced).

In 2025, AEA completed preliminary engineering and advanced environmental permitting, refined cable and converter designs, progressed the project execution plan and schedule, and completed a comprehensive technical and programmatic process review with DOE. In 2026, AEA will continue environmental permitting, further refine engineering and technical specifications, initiate procurement for cable and converter suppliers, and conduct marine surveys along the proposed subsea alignment.

To date, CIPLink has secured $206.5 million in federal funding and $64.2 million in state matching funds. AEA is actively pursuing the remaining $142.3 million needed to complete the capital stack and advance the project into final design and procurement.

## RAILBELT TRANSMISSION ORGANIZATION

**In 2024, Alaska took a significant step toward modernizing the Railbelt transmission system by establishing the Railbelt Transmission Organization (RTO) to develop a non-discriminatory, open-access transmission tariff that ensures fair and transparent grid access and cost recovery across Railbelt utilities. House Bill 307, signed into law on July 31, 2024, created the RTO as part of broader Railbelt transmission reform.**

**For administrative purposes, the RTO operates as a division of AEA and is governed by a committee that includes representatives from AEA, each Railbelt utility, and the Railbelt Reliability Council, which serves in an ex officio, non-voting role. This structure ensures broad utility participation, coordination, and transparency in transmission planning and cost allocation.**

**In 2025, the RTO obtained a certificate of public convenience and necessity from the Regulatory Commission of Alaska and filed its proposed transmission tariff, meeting statutory deadlines. Filing the tariff represents an important initial step in restructuring how costs associated with the Railbelt's backbone transmission system are recovered, laying the foundation for a more efficient, reliable, and equitable transmission framework.**

**$35M**

**From 2010-2025, the Alaska Intertie saved GVEA customers an average of $35 million annually.**

Since entering service in 1986, the Alaska Intertie is a 170-mile, 345-kV transmission line between Willow and Healy operating at 138 kV. It connects Golden Valley Electric Association (GVEA), which serves communities north of the Alaska Range, with Southcentral Alaska utilities, enabling power transfers and reserve sharing between Anchorage and Fairbanks. Funded by $124 million in state appropriations with no debt service, the Alaska Intertie delivers GVEA's share of Bradley Lake power while reducing energy costs. AEA manages the Alaska Intertie under the Alaska Intertie Agreement in partnership with Chugach Electric Association, Golden Valley Electric Association, and Matanuska Electric Association, ensuring equitable benefits across the Railbelt. In 2025, AEA worked with the Intertie Management Committee (IMC) on upgrades between Anchorage and Healy. The Alaska Intertie is transitioning from shared microwave equipment with the Alaska Department of Public Safety to a dedicated microwave system to boost reliability. The IMC secured more than $11 million in Infrastructure Investment and Jobs Act funding to reinforce structures in high snow-load areas and enhance Railbelt data collection through a synchrophasor system. In parallel, AEA and Railbelt utilities completed the 2050 Railbelt Strategic Transmission Plan, a yearlong effort involving utility, state, and independent engineers. The plan identifies long-term transmission improvements to support reliability, resilience, and coordinated Railbelt investment.

# $46M

**In fiscal year 2025, AEA disbursed $46 million in PCE payments to rural utilities—helping ease the cost of electricity for rural residents and community facilities while supporting the long-term viability of the utilities that serve Alaska's most remote communities.**

Unalaska, Alaska

# POWER COST EQUALIZATION

**The Power Cost Equalization Program (PCE) was established in 1984 to reduce the cost of electricity for rural residents and community facilities to levels comparable to those paid in Alaska's larger cities. AEA administers this program, which serves more than 81,000 Alaskans in 188 primarily diesel-dependent communities.**

Through PCE, AEA provides payments to eligible rural electric utilities, which then apply credit to residential and community facility customers for electricity use up to a specified consumption limit. These credits lower the per-unit cost of electricity for qualifying customers.

In many rural communities, pre-PCE electricity rates exceed urban rates. Residential and community facility customers in 186 communities benefit from PCE credits. Based on monthly utility filings, AEA calculates and disburses payments to eligible utilities. AEA's PCE team also provide technical assistance to utility clerks to support accurate reporting and filing.

PCE disbursements are funded by the PCE Endowment Fund. Alaska Statute 42.45.085 authorizes the Legislature to appropriate up to five percent of the fund's three-year average market value for PCE payments.

In recent years, the five-percent draw has fully funded PCE disbursements. Statutory changes enacted in fiscal year 2018 established how excess earnings are allocated. These changes allow endowment earnings to fully cover PCE program administrative costs and direct $30 million annually to the Community Assistance Program. This statute also authorizes up to $25 million to support the Renewable Energy Fund, Rural Power System Upgrade projects, and the Alaska Division of Community and Regional Affairs' Bulk Fuel Revolving Loan Fund.



Perryville, Alaska

## 750 KWH

**RESIDENTIAL**

**Residential customers may receive PCE credit up to 750 kilowatt hours (kWhs) per month.**

## 70 KWH

**PUBLIC FACILITIES**

**Community facilities may receive PCE credit of 70 kWhs per month multiplied by the number of residents.**

## 81

**ELECTRIC UTILITIES**

**Eighty-one rural electric utilities participate in the PCE program.**

# RURAL ENERGY

**In rural Alaska, AEA constructs bulk fuel tank farms, diesel powerhouses, and electrical distribution grids. Through circuit rider services, emergency response, and training for operators and utility managers, AEA supports the safe and reliable operation of this critical infrastructure.**

## Rural Power Systems Upgrade

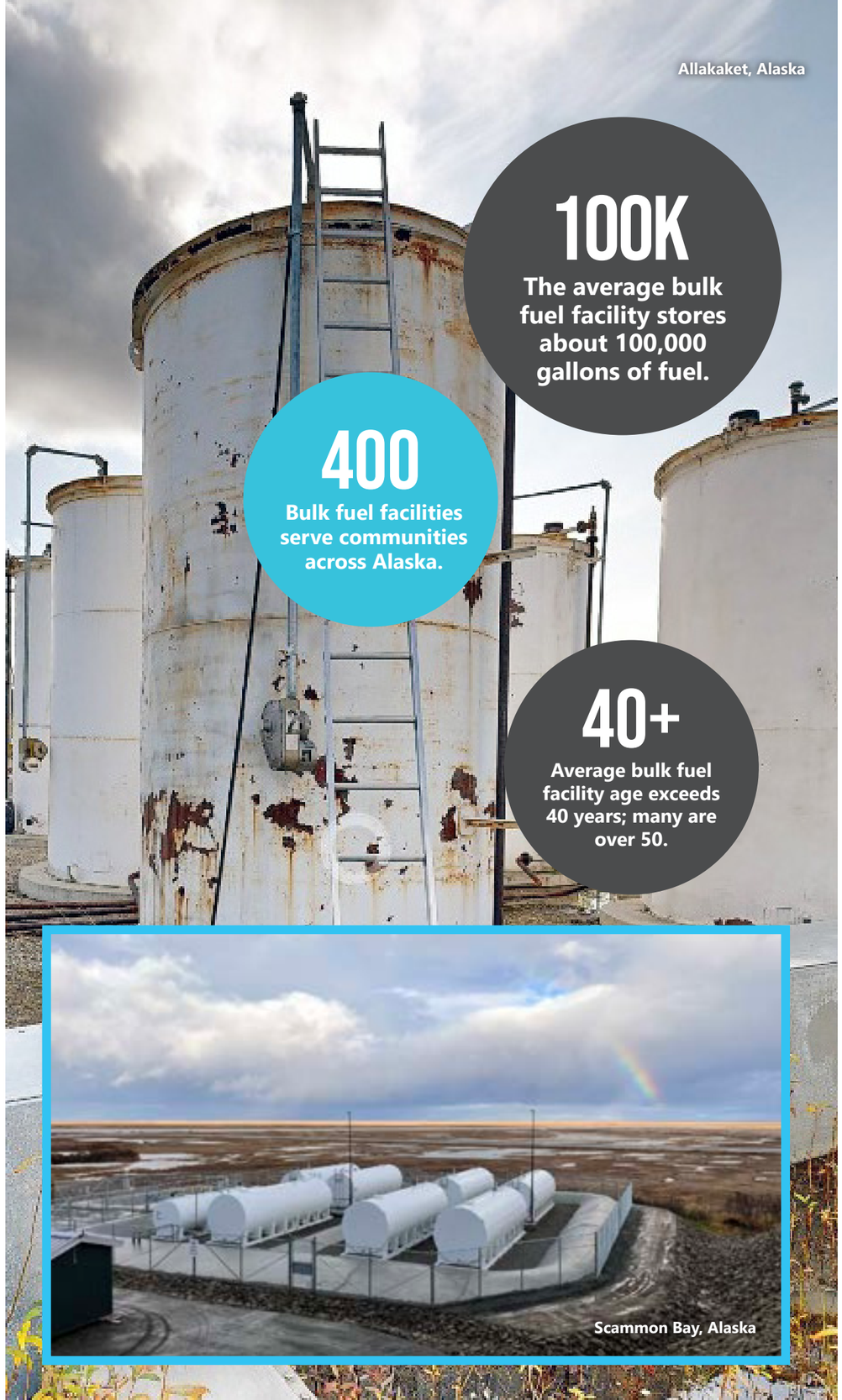
Nelson Lagoon, Alaska

AEA's Rural Power Systems Upgrade (RPSU) program improves power generation in small, off-grid Alaska villages. The Denali Commission is AEA's primary federal partner and requires a match of 50 percent for non-distressed communities and 20 percent for distressed communities. In 2025, AEA replaced powerhouses in Nelson Lagoon and Rampart. Engineering is complete, with construction planned in Manokotak and Tuluksak, and design underway in Chalkyitsik. AEA also manages Alaska's federal funding under the Environmental Protection Agency's Diesel Emissions Reduction Act (DERA), identifying communities in need of new prime-power diesel engines. Using DERA funds, AEA installs new, efficient engines. In 2025, AEA completed a DERA project to commission engines in Grayling for Alaska Village Electric Cooperative and is managing a DERA project for Middle Kuskokwim Electric Cooperative to replace five engines in Chuathbaluk, Sleetmute, and Stony River. AEA has shifted from full facility replacements to a focus on operations and maintenance to improve efficiency and extend equipment life. Maintenance and Improvement (M&I) projects are prioritized through inventory, assessment, and needs-based review. Work includes switchgear replacement, heat recovery upgrades, engine controls, powerhouse stabilization, and diesel genset replacement. In 2025, AEA replaced switchgear in Larsen Bay, Nikolski, and St. George, and completed a critical powerhouse leveling project in Ruby.

**RPSU upgrades power facilities in communities under 2,000.**

**Modern generators improve powerhouse reliability.**

**Diesel efficiency typically improves by 10–20%.**





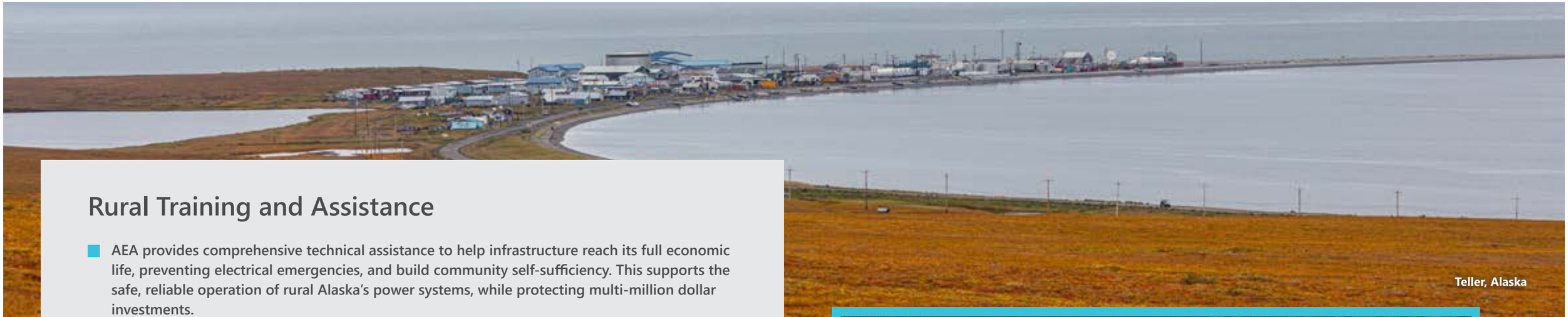

## Bulk Fuel Upgrades

In rural Alaska, diesel fuel supports power generation and heating, while gasoline is used for transportation. Most rural villages are located along rivers or the coast and rely on barges to deliver fuel for heating and diesel-fired generators. Many bulk fuel facilities were built more than 40 years ago, exceed their useful life, and do not meet current standards. While these facilities remain in service until replaced or upgraded, they pose risks to public safety and the environment. AEA's Bulk Fuel Upgrade program repairs and upgrades fuel storage facilities, helping communities lower fuel costs by purchasing fuel in bulk. In 2025, AEA completed construction of a new bulk fuel facility in Scammon Bay, including eight tanks with gasoline and diesel dispensing. Through the Alaska Bulk Fuel Infrastructure Partnership—a collaboration among AEA, the Denali Commission, Alaska Native Tribal Health Corporation, and Alaska Village Electric Cooperative—10 new bulk fuel facilities will be built in Aniak, Eek, Kivilina, Kobuk, Noatak, Quinhagak, Russian Mission, Shageluk, Tuluksak, and Wales. In recent years, AEA has placed greater emphasis on M&I projects. In 2025, AEA completed critical upgrades in Nelson Lagoon and Wales and advanced design and procurement for facilities in Diomede and Tununak. These projects support safe, reliable fuel storage. Work includes tank and dispenser replacements, safety upgrades, electrical improvements, coating, and other high-return investments.

**BFU upgrades or repairs fuel storage in communities under 2,000 people.**

**Bulk storage lowers per-unit fuel costs.**

**Modern facilities reduce energy costs by preventing leaks and failures.**



Teller, Alaska

# Rural Training and Assistance

AEA provides comprehensive technical assistance to help infrastructure reach its full economic life, preventing electrical emergencies, and build community self-sufficiency. This supports the safe, reliable operation of rural Alaska's power systems, while protecting multi-million dollar investments.

RURAL TRAINING

AEA's Rural Training program equips operators with the skills needed to maintain energy infrastructure and meet industry standards. In calendar year 2025, 41 operators from around the state completed training in Bulk Fuel, Person in Charge, and Power Plant Operations at the Alaska Vocational Technical Center. By strengthening operator capacity and emphasizing routine preventative maintenance, AEA helps improve system efficiency and the lifecycles of rural energy systems. In addition, 12 utility managers and clerks were trained in best practices for managing rural Alaska utilities through a contracted instructor at the Alaska Vocational Technical Center in Seward, Alaska.

CIRCUIT RIDER AND TECHNICAL ASSISTANCE

The Circuit Rider and Technical Assistance programs provide preventative support that helps reduce emergency responses during power outages in rural communities with a populations between 20 and 2,000. AEA's team routinely train rural utility operators and managers on the proper operations and maintenance of generation and distribution systems. In calendar year 2025, Circuit Riders assisted eligible utilities 217 times through remote monitoring, training, and technical consultation. The team also completed 55 on-site visits, providing hands-on assistance and minor repairs in 27 rural communities.

ELECTRICAL EMERGENCY ASSISTANCE

AEA assists rural communities during extended power outages to reduce the risk of death and property damage. During an electrical emergency, AEA supports utilities in responding to outages and restoring electric transmission and generation. Financial or technical assistance, including emergency repairs, may be provided to stabilize systems and protect critical infrastructure. AEA works to address real or potential emergencies before they escalate into disasters or major losses. Emergency response efforts may include purchasing or installing engines, generators, or transformers. In 2025, AEA declared four electrical emergencies in Akiak, Kwethluk, Mertarvik, and Tuluksak.


AEA'S REALITY CAPTURE DATA HUB

AEA is advancing inventory and assessment (I&A) of rural Alaska's energy infrastructure using cutting-edge technology. The I&A process prioritizes bulk fuel, powerhouse and distribution systems, with experts evaluating structures, equipment and components. Teams record technical data, score asset conditions and integrate findings into AEA's ArcGIS Energy Data Hub using three-dimensional imagery captured by drones and Light Detection and Ranging technology. The platform helps overcome logistical challenges in rural Alaska by supporting construction management, operator training and remote technical assistance. Its 3D capabilities allow project managers to track milestones and access real-time project data, improving efficiency, decision-making and cost savings. To date, AEA has created digital twins for 142 bulk fuel facilities and 165 rural powerhouses statewide. In 2024, AEA launched a multiyear effort to assess distribution systems and barge headers and has completed imaging for 32 distribution systems and three barge headers. The platform's applications continue to expand, including StoryMaps and operations and maintenance conversion projects that link training videos, manuals and technical specifications to infrastructure images.

# RENEWABLE ENERGY AND ENERGY EFFICIENCY

AEA's renewable energy programs drive Alaska's clean energy economy, partnering with local governments, non-profits, and tribal organizations to implement new solutions. They also offer technical assistance, outreach and education, funding, and training to expand knowledge of cost-saving energy technologies.


Lighting Upgrades, Whittier Harbor, Alaska

## Biomass

AEA's biomass program cuts diesel use, creates jobs, and keeps fuel dollars in Alaska. The program has funded more than 20 woody biomass heating systems for schools and buildings and provided technical support for more than 50 systems. As co-lead of the Alaska Wood Energy Development Task Group with the U.S. Department of Agriculture Forest Service (USDA-FS), AEA has supported more than 170 feasibility studies. In 2025, AEA trained rural boiler operators on chip boiler systems. During the past year, AEA secured two USDA-FS grants. One will fund engineering, design, and construction of Tok School's woodchip combined heat and power system. The other will fund engineering design for cordwood systems in four communities. Through Round 17 of the Renewable Energy Fund, AEA funded construction of a district heating system in Nenana. AEA also co-leads the Alaska Biofuels Advisory Group with the Alaska Department of Transportation and Public Facilities.

## Electric Vehicles

AEA leads statewide electric vehicle (EV) infrastructure deployment, working with utilities, agencies, and communities to reduce barriers and implement federal and state funding. AEA convenes the Alaska Electric Vehicle Working Group, bringing together utilities, EV owners, vendors, and municipalities through quarterly meetings and technical outreach. Following Federal Highway Administration approval of Alaska's FY26 National Electric Vehicle Infrastructure (NEVI) plan, AEA is partnering with the Alaska Department of Transportation and Public Facilities to advance fast charging along the Anchorage–Fairbanks Alternative Fuel Corridor, with planned expansion to other highways and communities. Beyond NEVI, the Alaska Rural EV Supply Equipment Deployment project, supported by the U.S. Department of Energy, has improved charging in Delta Junction and Glenallen and is advancing workforce development and new sites, including Valdez and off-highway locations, in 2026.

## Hydroelectric

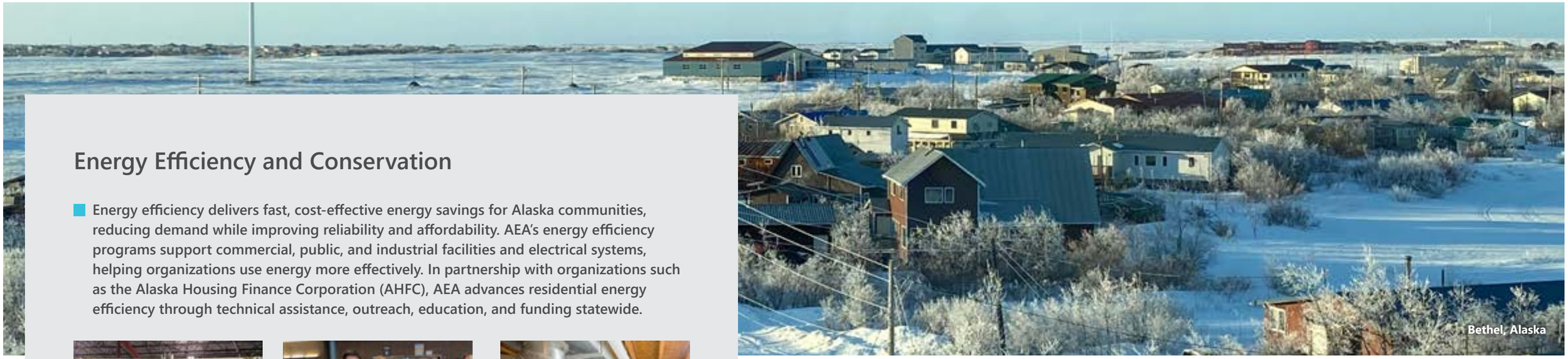
Hydropower is a cornerstone of Alaska's energy system, offering long-lasting, low-cost, and highly reliable power from the state's abundant water resources. In an average water year, hydroelectricity—Alaska's primary renewable energy source—supplies more than 29 percent of the state's electricity. AEA supports 51 utility-scale hydroelectric projects, most of which are located in Southeast and Southcentral Alaska. Projects range from early planning to full operation. Through its hydropower program, AEA improves development quality and efficiency, helping reduce construction costs. AEA works with state, federal, municipal, tribal, and private partners to analyze, plan, and support hydroelectric development. Round 17 of the Renewable Energy Fund supported an expansion study of the Goat Lake Hydro Project near Skagway and relicensing and repairs at the Pelican Hydroelectric Project.

## Solar

Solar technology continue to advance, with lower-cost panels, improved efficiency, and more sophisticated inverters and microinverters. Interest in solar installations is growing statewide, ranging from on- and off-grid residential systems to utility-scale projects. AEA supports this growth by providing solar energy information, technical assistance, and resources, including guidance on system design challenges such as microgrid phase imbalance. Through Round 17 of the Renewable Energy Fund (REF), AEA funded construction of a utility-scale solar photovoltaic (PV) project in Naknek. In 2024, AEA was awarded a competitive $62.5 million grant from the U.S. Environmental Protection Agency's (EPA) Greenhouse Gas Reduction Fund Solar for All Program. In 2025, the EPA terminated the Solar for All program nationwide. AEA continues to pursue opportunities outside the REF to support and develop solar infrastructure projects across Alaska.

## Wind

Alaska has abundant wind resources that offer a clean option for communities seeking to reduce reliance on volatile fossil fuel prices. Advances in wind technology have made wind power more viable statewide, especially in remote and rural areas. Alaska has practical experience designing and operating integrated wind energy systems in small microgrids. At present, wind energy accounts for about two percent of Alaska's annual electricity generation. AEA supports wind development through Renewable Energy Fund grants, with projects ranging from wind-diesel hybrid systems to utility-scale feasibility work along the Railbelt. State support is critical in remote communities, where cutting diesel use lowers costs and improves energy resilience. AEA identifies economic wind resources, supports research for rural and Arctic use, and promotes best practices through industry coordination, including the Alaska Wind Working Group and the semiannual Alaska Wind Workshop.



Bethel, Alaska

## Energy Efficiency and Conservation

Energy efficiency delivers fast, cost-effective energy savings for Alaska communities, reducing demand while improving reliability and affordability. AEA's energy efficiency programs support commercial, public, and industrial facilities and electrical systems, helping organizations use energy more effectively. In partnership with organizations such as the Alaska Housing Finance Corporation (AHFC), AEA advances residential energy efficiency through technical assistance, outreach, education, and funding statewide.

### ALASKA ENERGY EFFICIENCY PARTNERSHIP

AEA leads the Alaska Energy Efficiency Partnership (AEEP), a coalition of more than 50 public, private, and nonprofit organizations focused on imroving energy efficiency statewide. AEEP provides a forum for members to share insights on energy efficiency and conservation, funding opportunities, and project updates. Through collaboration and coordinated planning, AEEP supports informed decision-making and advances energy efficiency across Alaska.

### K-12 OUTREACH

Since 2013, AEA has partnered with AK EnergySmart to promote energy literacy through the Power Pledge Challenge (PPC) and the AK EnergySmart curriculum. PPC engages grade school students on energy efficiency and conservation. From August through November, students take part in lessons, school energy audits, community profiles, and energy-saving public service announcements. In 2025, PPC reached 2,000+ students in 92 classrooms. AEA also supports the Clean Energy Olympics, in which grade school students design, build, and present model wind turbines or solar systems. In 2025, 28 teams competed statewide, with six qualifying for the World KidWind Challenge.

### HOME ENERGY REBATES AND TRAINING

Sections 50121 and 50122 of the Inflation Reduction Act established the Home Efficiency Rebates and the Home Electrification and Appliance Rebates. The U.S. Department of Energy authorized $74.4 million in combined formula funding for Alaska. As the state energy office, AEA is partnering with AHFC to design and administer a Home Energy Rebates program. The act also established the Training for Residential Energy Contractors Program under Section 50123. AEA received $1,3 million for program development and is partnering with AHFC on program rollout.

## Renewable Energy – Village Energy Efficiency Program

AEA's Renewable Energy-Village Energy Efficiency Program (RE-VEEP) expands the Village Energy Efficiency Program (VEEP), established in 2010 to reduce per capita consumption through energy efficiency. After two rounds, $1.5 million supports nine RE-VEEP projects that reduce community energy use and costs through renewable energy, efficiency, and conservation upgrades in public buildings statewide. With additional State Energy–Bipartisan Infrastructure Law funding, AEA is soliciting applications for RE-VEEP Round 3.

### RENEWABLE ENERGY AND ENERGY EFFICIENCY PROJECT HIGHLIGHTS

- **City of Whittier (RE-VEEP):** Funding supported an energy audit and lighting upgrades at Whittier's port.
- **Glennallen/Delta Junction EVSE Upgrade (ARED):** Funding supports replacement of EV chargers in Glennallen and Delta Junction to improve reliability for late model vehicles.
- **Goat Lake Hydro Storage Expansion Study (REF):** Funding supports a reconnaissance study to assess options to expand storage at the existing 4-MW Goat Lake Hydroelectric Project serving Dyea, Klukwan, Haines, and Skagway.
- **Kwethluk Wind and Storage (REF):** Funding provides gap support to complete installation and integration of turbine generators, a battery storage system, and dispatchable loads, including a 200-kW boiler and electric thermal stoves.
- **Naknek Solar PV at Cape Suwarof (REF):** Funding supports construction of a 1-MW solar PV system, expanding the existing 80-kW system and integrating it with a previously REF-funded battery energy storage system.
- **Nenana Biomass Heat System (REF):** Funding supports final construction of the Nenana Biomass Facility heat system, serving five public buildings.
- **Pelican Hydro Relicensing, Restoration, and Repair (REF):** Funding supports Federal Energy Regulatory Commission relicensing and fish habitat restoration requirements for the 700-kW Pelican Hydro Project.
- **Quinhagak Battery Storage (REF):** Funding supports construction of a battery energy storage system integrated with Quinhagak's power system.


Humpback Creek, Cordova, Alaska

# GRANTS AND LOANS

**AEA advances Alaska's energy sector by administering grant and loan programs and actively tracking new federal funding opportunities. By working closely with the U.S. Department of Energy (DOE), including Tribal and Indian Energy loan programs, AEA helps maximize resources for Alaskans. Partnerships with DOE and national laboratories ensure communities can access innovative energy solutions and emerging funding.**

- Provides loans at favorable rates for energy projects
- Offers financing tailored to borrower needs
- Supports projects at all stages of development
- Enables rapid deployment of small loans for emergency response

## Power Project Fund

AEA administers the Power Project Fund (PPF), which offers low-interest loans to qualified applicants, including local utilities, governments, and independent power producers. PPF provides affordable financing to develop, expand, and upgrade electric power facilities, including distribution, transmission, efficiency upgrades, bulk fuel storage, and waste energy projects. Loans support all project phases—from feasibility studies to construction—with terms based on a project's useful life. Interest rates are tied to the 30-year taxable municipal bond yield index, which stood at 5.56 percent in February 2026. As of December 31, 2025, AEA's loan portfolio totaled $29 million across 15 loans supporting projects in multiple energy regions statewide. In late 2025, AEA used the program to provide bridge funding to communities impacted by Typhoon Halong, helping speed emergency response efforts.

More broadly, PPF has financed Alaska-based independent power producers and supported development of the state's two largest and most recent solar farms in the Matanuska-Susitna Valley. Together, these projects generate enough clean energy to power about 1,600 homes, improving air quality and preserving Cook Inlet's natural gas resources. PPF also provided $20 million to finance the Hiilangaay Hydroelectric Project, the largest rural hydroelectric facility in Southeast Alaska, on Prince of Wales Island. The project has enabled the island's interconnected communities to achieve nearly 100 percent renewable power and supports Alaska's long-term energy diversification goals.



## Renewable Energy Fund

The Renewable Energy Fund (REF), established in 2008, helps Alaskans reduce and stabilize energy by supporting viable renewable energy projects. Since its inception in 2008, the State has appropriated $333 million. The program drives energy cost savings, supports technology transfers across Alaska, and leverages federal and local funding. REF supports projects across multiple phases—from early feasibility and design through construction—helping communities advance technologies such as biomass, energy storage, hydro, solar, and wind.

An independent analysis examined REF's economic, community, and environmental impacts. The study found that the REF projects have offset over 120 million gallons of diesel fuel, reduced more than 1 million metric tons of carbon dioxide, and for every dollar invested returned $2.07 in benefits to residents and the economy.

To date, REF has awarded 294 grants for renewable energy projects statewide, supporting projects at various stages of development, from feasibility and design through construction and operation. More than 110 REF-supported projects are currently operating. In fiscal year 2026, AEA recommended the top six ranked projects for Round 17 of REF funding. The Legislature approved and the Governor concurred with, a $6.3 million appropriation for Round 17. In early 2026, AEA solicited REF Round 18. Following a rigorous review and evaluation process, AEA recommended 29 applications totaling $41.2 million to the legislature for consideration in the fiscal year 2027 capital budget.

The Renewable Energy Fund Advisory Committee—a nine-member committee, four of whom are legislators and five of whom are appointed by the Governor—works in consultation with AEA to provide policy guidance, support the application and evaluation process, and develop final funding recommendations. The committee's review emphasizes technical feasibility, cost effectiveness, community benefit, and long-term energy cost stability.

**120M**

**REF projects have displaced over 120 million gallons of diesel and has offset over 2.2 million cubic feet of natural gas since its inception.**


Battery Energy Storage System, Nome, Alaska

### REF Case Study: Turning Wind Into Reliable Power in Nome

**In 2022, during REF Round 14, the Nome Joint Utility System (NJUS) applied for a $2 million, grant to integrate a battery energy storage system into the Banner Ridge Wind Farm. The project was completed in November of 2025 with the installation of a 2 mega-watt-house battery energy storage system. The battery system improves performance of the NJUS's two EWT DW52-900 Wind Turbines, each rated at 900 kilowatts, by reducing the amount of curtailment by an estimated 64 percent. Instead of wasting excess wind energy when generation when generation exceeds demand, the system stores that energy for later use. NJUS also configured the batteries to support winter "peak shaving," allowing diesel generators to operate more efficiently and reduce fuel use during periods of high demand. This project also positions NJUS for future wind-to-heat development, including planned electric boilers at the hospital, school, and recreation center. These systems will use additional excess wind energy to offset heating fuel consumption and further reduce energy costs.**

# FY2025 FINANCIAL HIGHLIGHTS

| STATEMENTS OF NET POSITION | June 30, 2025 | June 30, 2024 |
|---|---|---|
| **Assets** | | |
| Restricted Investment securities and cash | 1,285,139 | 1,281,491 |
| Securities lending collateral | 46,735 | 44,045 |
| Loans, net | 29,508 | 30,832 |
| Capital assets, net | 375,026 | 369,244 |
| Receivables and other assets | 15,420 | 9,871 |
| Net Other Post-Employment Benefits (OPEB) | 1,479 | – |
| Total assets | **1,735,307** | **1,735,438** |
| Deferred outflows - Public Employees' Retirement System (PERS) and OPEB | 511 | – |
| **Total assets and def outflows** | **1,753,818** | **1,735,438** |
| **Liabilities and net position:** | | |
| Liabilities | | |
| Bonds payable | 195,915 | 201,253 |
| Payables and other liabilities | 85,622 | 78,723 |
| Securities lending collateral | 46,735 | 44,045 |
| Total liabilities | **328,272** | **324,021** |
| Deferred inflows - Related to OPEB | 34 | – |
| Net position | 1,425,512 | 1,411,462 |
| **Total liabilities, def inflows, and net position** | **1,753,818** | **1,735,438** |

| REVENUES, EXPENSES, AND CHANGES IN NET POSITION | June 30, 2025 | June 30, 2024 |
|---|---|---|
| Operating revenues: | | |
| Federal grants | 14,438 | 12,298 |
| Revenue from operating plants | 27,575 | 25,802 |
| State operating and capital revenues | 29,441 | 23,881 |
| Interest on loans | 470 | 391 |
| Other operating revenues | 486 | 5,881 |
| Total operating revenues | **72,410** | **68,253** |

| REVENUES, EXPENSES, AND CHANGES IN NET POSITION (CONT) | June 30, 2025 | June 30, 2024 |
|---|---|---|
| Operating expenses: | | |
| Grants and projects | 39,949 | 36,772 |
| Power cost equalization grants | 46,762 | 44,931 |
| Plant operating | 9,922 | 8,677 |
| General and administrative | 10,772 | 6,887 |
| Depreciation | 12,237 | 12,076 |
| **Total operating expense** | **119,642** | **109,343** |
| Operating loss | (47,232) | (41,090) |
| Investment income, net | 106,954 | 81,018 |
| Interest expense | (11,200) | (10,400) |
| State of Alaska reappropriations and transfers | (30,000) | – |
| Loss on disposal of asset | (2,025) | – |
| Extraordinary item (PERS and OPEB related) | (2,447) | – |
| **Increase in net position** | **14,050*** | **29,528*** |

NOTES REGARDING INCREASE (DECREASE) IN NET POSITION

*Net postion increased primarily due to an increase in investment earnings of ($15,600). Other contributing factors was an overall decrease of ($1,500) from PERS and OPEB impacts.

**Net position increased primarily due to unrealized investment gains in the Power Cost Equalization Endowment Fund of ($5,900) and from the Bradley Lake bond issuance of ($2,500). Other contributing factors was an overall decrease of ($326) from reduced revenues of the Trans-Alaska Pipeline Liability Fund.

# BOARD OF DIRECTORS

**Clay Koplin**
Chair, Board Member

**Duff Mitchell**
Vice Chair, Board Member

**Tony Izzo**
Board Member

**Ingemar Mathiasson**
Board Member

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

**Robert Siedman**
Board Member

NO PHOTO AVAILABLE

**Llewellyn Smyth**
Commissioner Designee, Alaska Department of Revenue

# EXECUTIVE TEAM

**Curtis W. Thayer**
Executive Director

**Tim Sandstrom**
Chief Operating Officer

**Mark Billingsley, JD**
General Counsel

**Brandy M. Dixon**
Chief Communications Officer

**Leonard Robertson**
Chief Information Officer

**Karen Turner-Thern**
Chief Human Resources Officer

**Pamela Ellis**
Controller

**Audrey Alstrom, PE**
Director of Renewable Energy and Energy Efficiency Programs

**Conner Erickson**
Director of Planning

**Josi Hartley**
Director of Federal Programs

**James Mendenhall, PE**
Director of Owned Assets

## ALSO FROM THE ALASKA ENERGY AUTHORITY


FEATURED PUBLICATION

### STATEWIDE RAILBELT ENERGY VISION

The Statewide Railbelt Energy Vision brings together AEA's major Railbelt investments into a single, coordinated framework that looks ahead 25 years to support reliability, resilience, and affordability across the Railbelt.

**SCAN TO READ THE VISION**
Or visit akenergyauthority.org
for all AEA publications

Alaska Energy Authority
813 W Northern Lights Blvd.
Anchorage, AK 99503
Phone: (907) 771-3000
Fax: (907) 771-3300
E-mail: info@akenergyauthority.org

akenergyauthority.org

@alaskaenergyauthority

@alaskaenergyauthority