STATEWIDE RAILBELT ENERGY VISION

February 2026

ALASKA ENERGY AUTHORITY

Alaska Intertie.
GVEA photo.

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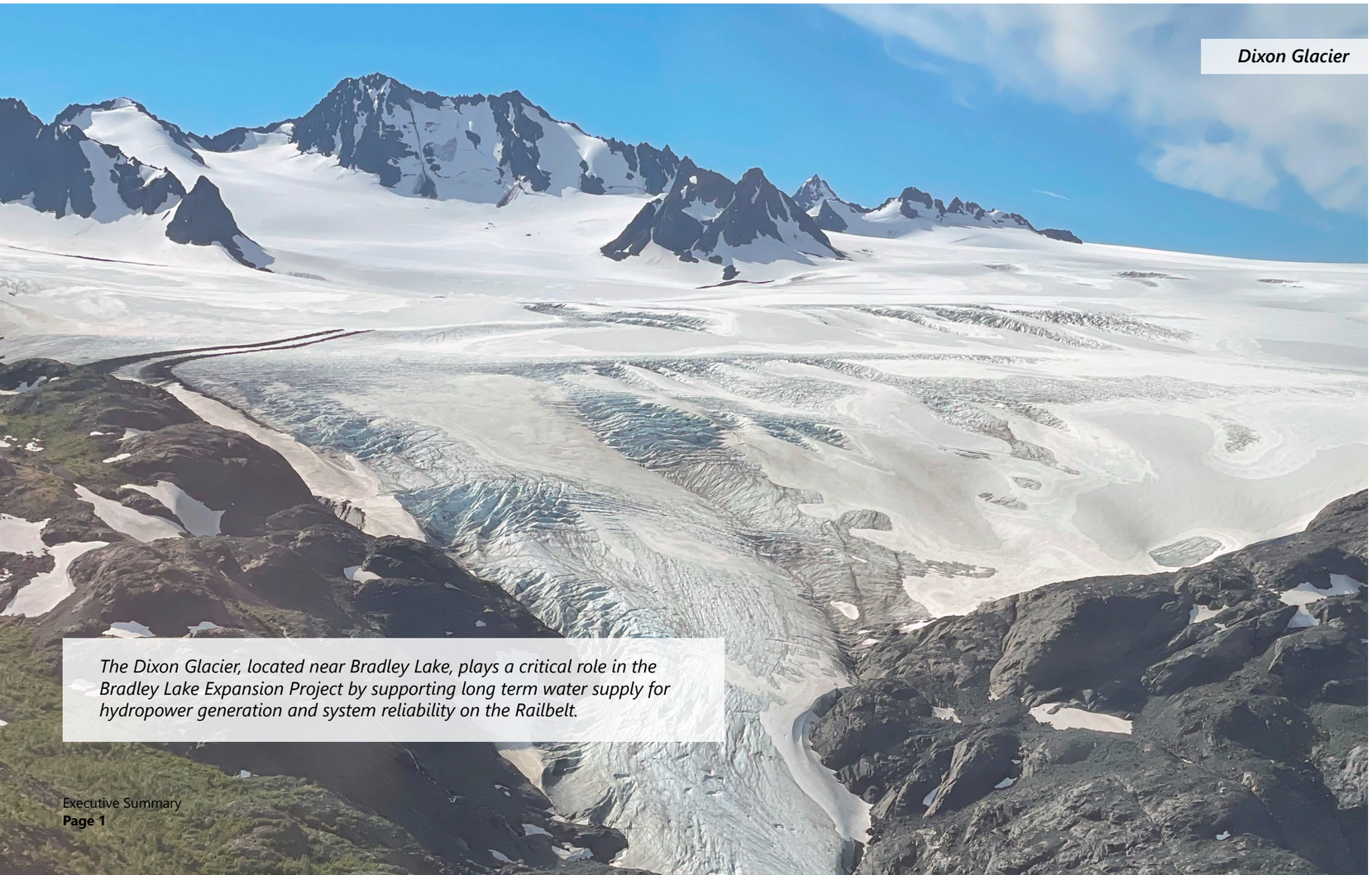
Statewide Railbelt Energy Vision

EXECUTIVE SUMMARY



Dixon Glacier

The Dixon Glacier, located near Bradley Lake, plays a critical role in the Bradley Lake Expansion Project by supporting long term water supply for hydropower generation and system reliability on the Railbelt.

Statewide Railbelt Energy Vision

STATEWIDE RAILBELT ENERGY VISION

The Alaska Energy Authority (AEA) developed the Statewide Railbelt Energy Vision to provide a clear, coordinated roadmap for the future of Alaska's largest interconnected power system. As the state's energy authority, AEA plays a central role in planning, financing, and advancing infrastructure investments that support reliable, affordable power for Alaskans—today and for generations to come.

The Alaska Railbelt serves nearly 75 percent of the state's population and underpins the economic, social, and public safety needs of communities across Southcentral and Interior Alaska. Stretching more than 700 miles from the Kenai Peninsula through the Anchorage Bowl and Matanuska Susitna Borough, north to Fairbanks and southeast to Delta Junction, the Railbelt system connects generation, transmission, and distribution assets that serve residential, commercial, industrial, and government customers.

Operating this system reliably and economically—across vast distances, remote terrain, and a harsh Arctic climate—requires long term coordination and disciplined investment. At the same time, the Railbelt faces growing and evolving demands: aging infrastructure, congestion constraints, changing resource mixes, increasing electrification, and heightened expectations for resilience and affordability.

This vision builds on work completed by the Governor's Alaska Energy Security Task Force in 2024, particularly the Railbelt Transmission, Generation and Storage Subcommittee, and reflects ongoing efforts by AEA, the AEA Board of Directors, Railbelt utilities, and emerging regional coordination through the Railbelt Transmission Organization. It brings together AEA's current major initiatives—including the Bradley Lake Expansion Project, Cook Inlet PowerLink, and Railbelt Transmission System Upgrade Project—into a cohesive, system wide framework.

The Statewide Railbelt Energy Vision is intended to guide near and long term decision making through 2050. It identifies strategies to reduce system congestion, support least cost power delivery, leverage private investment, and strengthen institutional coordination—ensuring the Railbelt remains reliable, resilient, and economically viable as Alaska's energy needs evolve.

CURRENT ENERGY LANDSCAPE

The current energy landscape for the State of Alaska is explored, reviewing the state's energy goals:

Reliability and redundancy for critical infrastructure (including five military bases).

Lowest-cost generation and transmission upgrades.

Integration of renewables and emerging technologies.

Ensure long-term stability through diversified energy sources, including natural gas pipeline development.

Linking Railbelt Energy Initiatives

Key components to Alaska's Railbelt Energy landscape include transmission modernization, strategic asset integration, energy storage opportunities, and a robust financial framework, to support Alaska's strategic military installations and emerging priorities such as data centers. Alaska's Railbelt grid—spanning Homer to Fairbanks and serving 75% of the state's population—is at a critical juncture as aging infrastructure and rapidly declining Cook Inlet natural-gas supplies threaten reliability and affordability.

Strategic initiatives underway—including the Alaska Natural Gas Pipeline, expanded hydroelectric generation, modernized transmission, and new battery storage—aim to secure long-term, diversified energy supply. These upgrades are essential not only for stabilizing power for Alaska's five major military installations but also for attracting energy-intensive data centers, which require up to 1 GW of reliable, low-cost power. Together, these efforts strengthen grid resilience, reduce future fuel vulnerabilities, and position the Railbelt to support Alaska's economic and national-security priorities.

Project Name	Project Description
Alaska Bulk Fuel Infrastructure Partnership	A $100 million Denali Commission award to modernize bulk fuel tank farms in 10 rural communities—improving safety, reducing environmental risk, and supporting reliable energy in off-road-system communities.
Alaska Railbelt Transmission System Upgrades	Targeted investments to modernize and reinforce the Railbelt transmission network, improving reliability, reducing outages, and enabling least-cost power delivery.
Battery Energy Storage Systems (BESS)	Several BESS installations add stabilizing power distribution and continuity along the Railbelt, including assets at Bradley Lake.
Bradley Lake Expansion Project	A 120-MW facility generating 10 percent of the total annual power used by Railbelt electric utilities.
Cook Inlet PowerLink	A high-voltage direct current transmission system connecting the Southern and Central Railbelt to enable up to 200 MW of bidirectional power flow, improve reliability, and add critical system redundancy.
Susitna-Watana	The remote dam site is located on the Susitna River roughly 80 river upstream from Talkeetna and 30 miles above Devils Canyon and is the Railbelt's largest hydroelectric potential. Note: this project has not started.

ADVANCEMENT OF RAILBELT INITIATIVES FROM THE ALASKA ENERGY SECURITY TASK FORCE

The Alaska Energy Security Task Force (Task Force) was created in 2023 through Administrative Orders (A.O) 344 and 345, to develop a comprehensive statewide energy plan that will evaluate energy generation, distribution, and transmission for the State of Alaska and its communities The Task Force final report (December 2023) and its recommendations have advanced several initiatives to strengthen Alaska's long-term energy resilience. Key progress includes the establishment of the Railbelt Transmission Organization (RTO) through HB307, creating a unified, system-focused approach to transmission. A recent RTO tariff structure will provide a mechanism that recovers backbone transmission costs across the entire Railbelt and helps to eliminate barriers to economic dispatch. Major generation and diversification efforts are also moving forward, including the Bradley Lake Expansion Project (Dixon Diversion), which is advancing through preliminary design and FERC licensing, as well as renewed momentum behind the Susitna-Watana Hydroelectric Project following a formal request from Railbelt utilities to resume federal licensing.

In parallel, the AEA continues to invest in technologies that stabilize and diversify the state's energy system, such as Battery Energy Storage Systems (BESS) and expanded hydroelectric capacity. The Bradley Lake Expansion alone is expected to increase output by 50 percent and offset 1.5 billion cubic feet of natural gas annually. To leverage expanded generation capacity and distribute energy from renewable sources, AEA is focusing on upgrading transmission capability along the entire length of the Railbelt. Efforts to increase regional demand—such as attracting large industrial users and data centers—are also underway, recognizing that increased load can drive down system-wide energy costs. AEA and the RTO continue to evaluate additional policy updates to accelerate energy growth, enhance transmission reliability, and reduce energy costs for Alaskans.

AEA-OWNED ASSETS AND STRATEGIC PROJECTS

While much of the Railbelt energy needs are met through power generated from natural gas, AEA has been working for decades to harness the state's plentiful renewable energy resources. Projects like the Bradley Lake Hydro Project are the backbone of this effort. This looks beyond transmission upgrades to a comprehensive list of strategic projects currently underway or planned that will unleash sustainable, reliable, and affordable electrical power for Alaska's Railbelt.

The Alaska Intertie.

COOK INLET POWERLINK (CIPLINK)

A High Voltage Direct Current (HVDC) transmission project that will create a redundant pathway between the Kenai Peninsula and Anchorage.

ECONOMIC BENEFITS:

1,470	$129M	$332M
Jobs Created *(950 direct, 520 indirect)*	in Labor Income	Total Economic Output

STRATEGIC IMPORTANCE:

- **Integrate Clean Energy:** Added power capacity allows for future renewable clean energy projects.
- **Protection Against Disruptions:** Redundancy in energy transmission makes the system more reliable.
- **Long-Term Cost Savings:** Improved transmission efficiency reduces energy loss, which lowers costs.

TIMELINE: 2024-2032

TOTAL ESTIMATED COST (FY26): $413 million

BRADLEY LAKE EXPANSION PROJECT

An expansion of the largest hydroelectric facility in Alaska, to redirect water from the Dixon Glacier (Dixon Diversion Project) to the reservoir for the Bradley Lake Hydroelectric Project.

ECONOMIC BENEFITS:

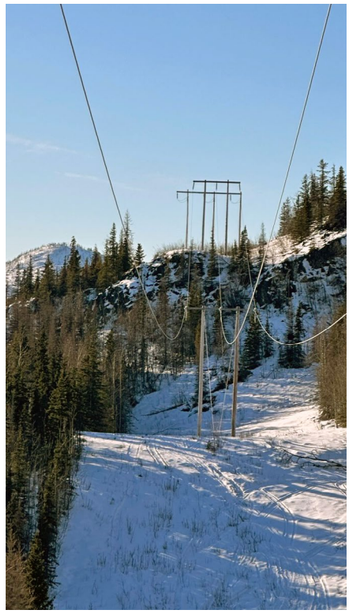
3,250	$260M	$584M
Jobs Created *(direct, indirect)*	In Labor Income	Total Economic Output

STRATEGIC IMPORTANCE:

- **Grid Resilience:** Stores additional energy for the Railbelt grid, increasing reliability.
- **Renewable Energy Reliability:** Helps manage the output of renewable energy in coordination with variable sources like wind and solar.
- **Rural Energy Cost Reduction:** When Railbelt energy costs decrease, so do residential rates for rural Alaskans through the Power Cost Equalization Program.

TIMELINE: 2024-2030

TOTAL ESTIMATED COST (FY26): $400 million



ALASKA RAILBELT TRANSMISSION SYSTEM UPGRADES

Railbelt Transmission System Upgrades Project is a multi-phase infrastructure project to strengthen Alaska's primary electric transmission corridor.

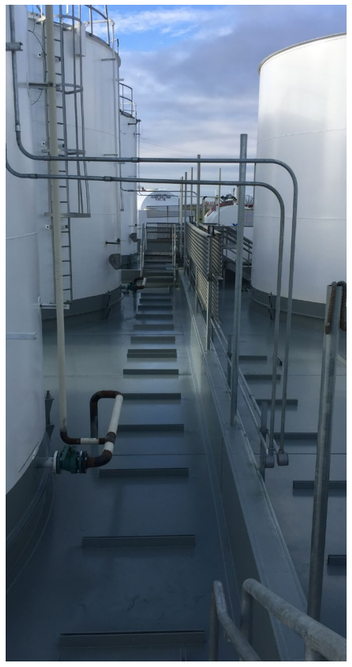
ECONOMIC BENEFITS:

6,095	$1.269B
Jobs Created *(direct, indirect)*	Total Economic Output

STRATEGIC IMPORTANCE:

- **National Security:** Ensures energy reliability and redundancy for five military bases.
- **Community:** Strengthens grid reliability for 75 percent of Alaska's population, reducing outage risks and supporting economic development.
- **Resilience:** Provides redundancy, reduces system losses and strengthens stability across the grid.

TIMELINE: 2024-2049



ALASKA BULK FUEL INFRASTRUCTURE PARTNERSHIP

Modernize bulk fuel tank farms, improving safety, reducing environmental risk, and supporting reliable energy in off-road-system communities.

ECONOMIC BENEFITS:

10	$100M+
Communities served	Total Investment

STRATEGIC IMPORTANCE:

- **Community:** Replaces failing bulk fuel infrastructure in 10 rural communities to ensure safe, reliable fuel storage for electricity generation, heating, and transportation.
- **Energy Security:** Strengthens fuel supply reliability in off-road-system communities, reducing the risk of outages, service disruptions, and emergency fuel shortages.
- **Resilience:** Modernizes aging tank farms to improve safety, reduce environmental risk, and support long-term, sustainable energy infrastructure in some of Alaska's most remote regions.

TIMELINE: 2026-2029

Section 1

INTRODUCTION

Governor Mike Dunleavy signs the Energy Bill on July 31, 2024, enacting House Bill 307 and strengthening AEA's ability to advance reliable and affordable energy statewide.

STATEWIDE RAILBELT ENERGY VISION

Purpose

The purpose of the Statewide Railbelt Energy Vision is to create a cohesive, strategic vision that connects AEA major initiatives – the Bradley Lake Expansion Project, Cook Inlet PowerLink, Railbelt Transmission System Upgrades– into a clear roadmap for Alaska's energy future through 2050.

Advancing Reliability and Affordability for All Alaskans

This plan is a comprehensive, system-wide strategy designed to address system-wide congestion, deliver least-cost power generation, leverage private investment, and propose institutional reforms to ensure reliability and affordability for all Alaskans. The state's core power system – the Railbelt grid, which spans from Homer to Fairbanks – has statewide significance.

This vision document advances the work completed by the Governor's Alaska Energy Security Task Force in 2024, specifically the Railbelt Transmission, Generation and Storage subcommittee, focusing on recommendations made in this report. Additionally, the AEA Technical Working Group has drafted the 2050 Railbelt Strategic Transmission Plan, which informs the vision document. Finally, the vision leverages the ongoing work of the AEA Board of Directors and the newly formed Railbelt Transmission Organization (RTO).

Statewide prosperity relies on the Railbelt's transmission backbone functioning at near parity with modern grids. Strengthening the Railbelt grid improves reliability for the majority of Alaskans, strategic military installations served by the Railbelt, and critical industry and infrastructure.

Integrated planning enables efficient energy dispatch and sharing capacity across utilities, which translates into lower costs and increased energy resilience. Lowered costs in the Railbelt region benefits rural communities through the Power Cost Equalization Program, furthering Alaska's broader energy resilience and cost reduction strategies.

ALIGNMENT WITH AEA STRATEGIC PLAN

The Statewide Railbelt Energy Vision **ultimately advances AEA's mission of reducing the cost of energy in Alaska,** by empowering Alaska's energy future through resilient infrastructure, innovation and strong partnerships – ensuring reliable, affordable, and sustainable power is accessible to every community and industry across the state.

CORE VALUES

- **Resilience and Technical Excellence:** AEA designs, builds, and maintains energy systems that are reliable, durable, and high performing across Alaska's challenging conditions. We commit to technical expertise, operational excellence, and proactive planning to ensure infrastructure meets current and future demands.
- **Innovation and Adaptability:** We embrace emerging technologies and creative solutions—such as geothermal, nuclear, and energy storage—to meet evolving energy needs. By remaining agile and forward-looking, we help position the state to lead in a dynamic energy landscape.
- **Partnership and Accountability:** AEA collaborates with public and private partners to align goals, share resources, and maximize impact. We act with transparency and deliver measurable results, taking ownership of our commitments to funders, communities, and the State of Alaska.
- **Equity, Sustainability and Community Engagement:** AEA is committed to ensuring a reliable, affordable, and sustainable energy future. We prioritize rural access, environmental stewardship, and authentic engagement with Alaskans to ensure that energy development supports long-term social, economic, and environmental well-being.

STRATEGIC ISSUES

- **Transmission upgrades and resilience:** Upgrade aging systems to support reliability, access, and renewable integration.
- **Funding and alignment with investment opportunities:** Secure diverse, sustained capital through partnerships and grant-readiness improvements.
- **High-load growth and economic development:** Plan infrastructure to meet rising demand from industries like data centers.
- **Development of AEA organization capacity to match growing needs/opportunities:** Develop the workforce, systems, and expertise needed to manage complex, emerging energy demands.
- **Transition to a more diversified energy generation portfolio:** Advance geothermal, nuclear, and storage to complement intermittent renewables.

Helicopter over Dixon Diversion

STATEWIDE RAILBELT ENERGY VISION ORGANIZATION

The Statewide Railbelt Energy Vision is organized into the following key sections, each designed to guide readers through the plan's purpose, context, and long-term strategy:

- Executive Summary
- Section 1: Introduction
- Section 2: Current Energy Landscape
- Section 3: AEA-owned Assets and Projects
- Section 4: Advancement of Railbelt Initiatives from the Alaska Energy Security Task Force
- Section 5: Implementation Roadmap

Section 2

CURRENT ENERGY LANDSCAPE

Anchorage, Alaska winter lights.

Statewide Railbelt Energy Vision

RAILBELT ENERGY LANDSCAPE WITHIN THE GREAT STATE OF ALASKA

In a state defined by vast distances and extreme conditions, reliable and affordable energy is foundational to community well-being, economic opportunity, and resilient infrastructure. Alaska's energy landscape is at a pivotal moment.

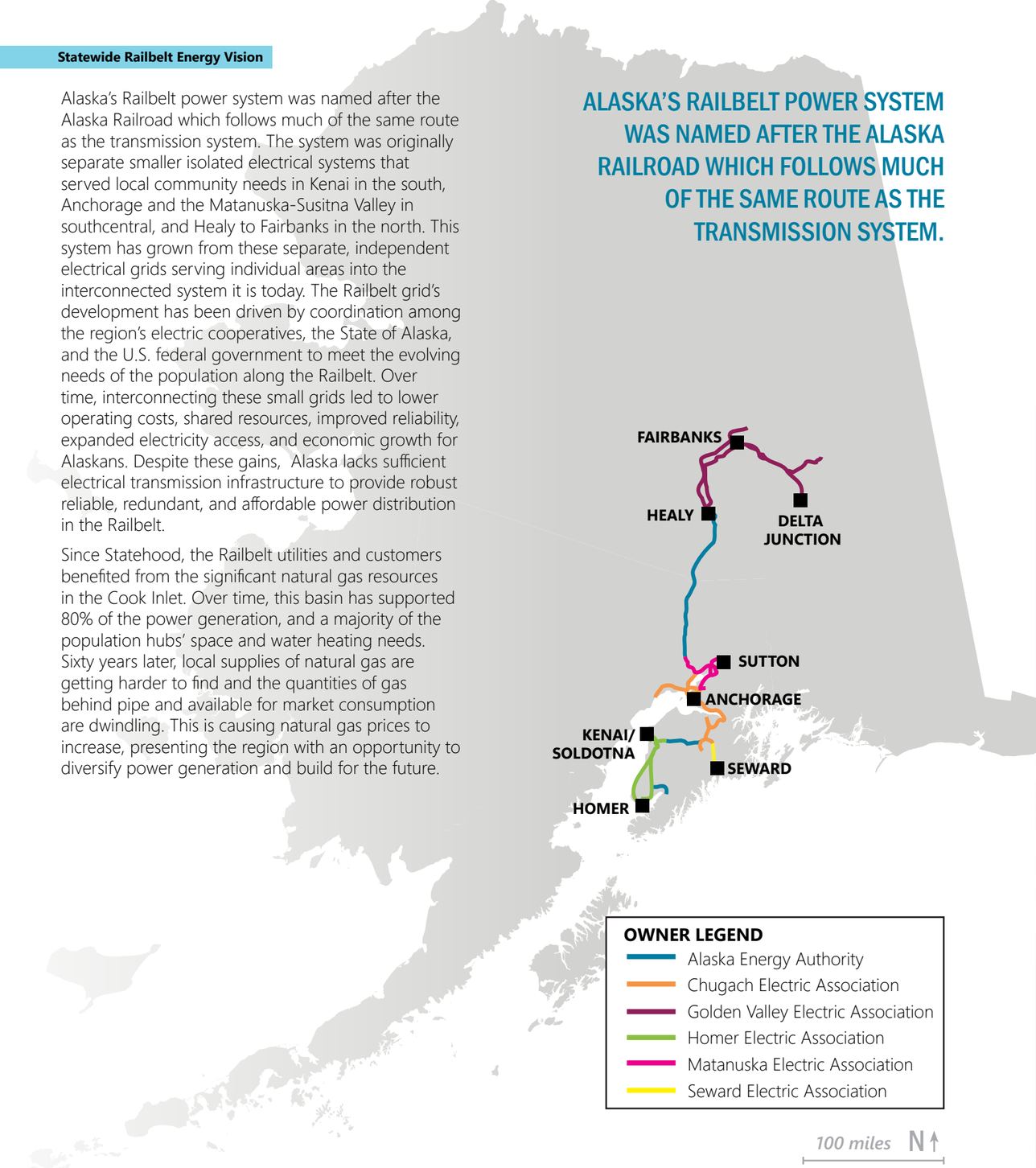
The state's core power system – the Railbelt grid, which spans from Homer to Fairbanks – faces growing stress from aging infrastructure, rising costs and declining fuel supply. The Railbelt is the primary interconnected power system, providing a critical service to nearly 75 percent of Alaska's population. This essential electricity infrastructure comprises generation, transmission, and distribution for commercial, industrial, residential and government loads. The reliable, resilient, economically viable operation of the Alaska Railbelt—despite harsh arctic climate, remote and rugged terrain, and increasingly complex grid demands—is vital to Alaskan's prosperity and energy security today and into the future.

Alaska's Railbelt utilities have long relied on locally produced natural gas to provide dispatchable base load generation. That supply is declining sharply, and by 2027-28 demand is projected to outpace available reserves. Without new infrastructure, utilities may be forced to import natural gas, increasing electricity costs and undermining long term energy independence. Natural gas remains critical as a firm, controllable power source—and until additional firm or dispatchable alternatives are deployed, the system remains vulnerable.

Alaska's Railbelt power system was named after the Alaska Railroad which follows much of the same route as the transmission system. The system was originally separate smaller isolated electrical systems that served local community needs in Kenai in the south, Anchorage and the Matanuska-Susitna Valley in southcentral, and Healy to Fairbanks in the north. This system has grown from these separate, independent electrical grids serving individual areas into the interconnected system it is today. The Railbelt grid's development has been driven by coordination among the region's electric cooperatives, the State of Alaska, and the U.S. federal government to meet the evolving needs of the population along the Railbelt. Over time, interconnecting these small grids led to lower operating costs, shared resources, improved reliability, expanded electricity access, and economic growth for Alaskans. Despite these gains, Alaska lacks sufficient electrical transmission infrastructure to provide robust reliable, redundant, and affordable power distribution in the Railbelt.

Since Statehood, the Railbelt utilities and customers benefited from the significant natural gas resources in the Cook Inlet. Over time, this basin has supported 80% of the power generation, and a majority of the population hubs' space and water heating needs. Sixty years later, local supplies of natural gas are getting harder to find and the quantities of gas behind pipe and available for market consumption are dwindling. This is causing natural gas prices to increase, presenting the region with an opportunity to diversify power generation and build for the future.

ALASKA'S RAILBELT POWER SYSTEM WAS NAMED AFTER THE ALASKA RAILROAD WHICH FOLLOWS MUCH OF THE SAME ROUTE AS THE TRANSMISSION SYSTEM.

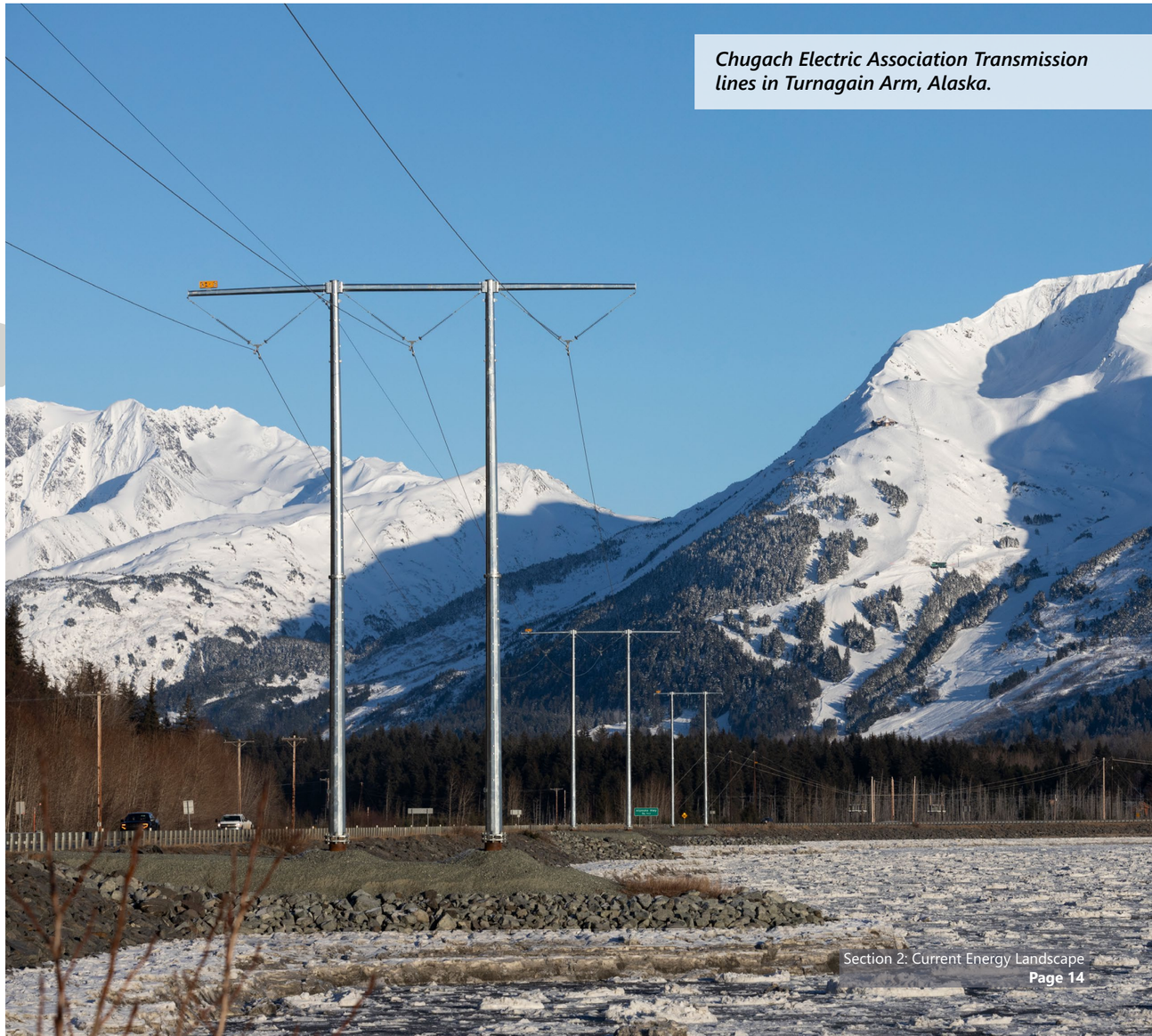


LINKING RAILBELT ENERGY INITIATIVES

Key components to Alaska's Railbelt Energy Landscape include transmission modernization, strategic asset integration, energy storage opportunities, and a robust financial framework, to support Alaska's emerging priorities, such as data centers and military needs. Data Centers require significant energy, up to 1 giga-watt, to run their processors. Attracting even one data center to the Railbelt would bring in a large industrial customer and substantially increase demand. The Railbelt system will need to grow generation and transmission capacity to meet the needs of any future data center development.

Recently, the Governor acknowledged, "With naturally cool temperatures, vast land and freshwater resources, and several energy and connectivity projects underway, Alaska has measurable advantages that deserve serious consideration from hyper-scalers and AI infrastructure investors."

Strategic asset integration includes the initiatives and projects on the following pages.



Chugach Electric Association Transmission lines in Turnagain Arm, Alaska.

Bradley Dam.

BRADLEY LAKE EXPANSION PROJECT

Diversified energy generation is supported by Alaska's abundant water resources, making hydroelectric power one of the most reliable and lowest-cost sources of energy available in the state. The Bradley Lake Hydroelectric Project is a 120-megawatt (MW) facility that generates roughly 10 percent of the total annual power used by Railbelt electric utilities and provides some of the lowest-cost electricity serving approximately 75 percent of Alaskans, from Homer to Fairbanks.

The Bradley Lake Expansion Project (Dixon Diversion) significantly builds on this foundation by increasing energy output at the state's largest hydroelectric facility by approximately 50 percent. This added capacity will deliver more firm, renewable power to the Railbelt, helping to offset an estimated 1.5 billion cubic feet of natural gas annually and reducing exposure to fuel supply and price volatility. The project also enhances overall grid reliability by adding dependable, year-round generation that supports system stability during periods of high demand or limited fuel availability.

To fully realize these benefits, upgrades to the Railbelt transmission system—specifically the transition to 230-kilovolt transmission—are essential. These upgrades enable electricity generated at Bradley Lake to be moved more efficiently and reliably across long distances, strengthening energy security and ensuring that clean, low-cost power can be delivered from the Kenai Peninsula to communities throughout the Railbelt.

COOK INLET POWERLINK (CIPLINK)

Reliable, affordable electricity across Alaska's Railbelt depends not only on generation, but on the ability to move power efficiently and securely where it is needed. As Southcentral Alaska faces tightening fuel supplies and works to position the Railbelt for long-term economic opportunity, future-ready transmission infrastructure is essential to maintaining reliability, economic growth, and energy security.

CIPLink is a shovel-ready transmission project that will connect the Southern and Central Railbelt through a high-voltage direct current system spanning Nikiski to Beluga. The project includes approximately 40 miles of subsea cable, eight miles of overland cable, and associated converter stations, enabling up to 200 megawatts of bidirectional power flow. This added capacity will unlock constrained generation, improve economic dispatch, and strengthen grid flexibility across the Railbelt.

CIPLink significantly enhances system reliability for approximately 75 percent of Alaska's population by providing N-1 redundancy, grid-forming capability, and black-start functionality—features that allow the system to withstand outages and restore power quickly. These capabilities are particularly critical for five military installations supporting Arctic and Indo-Pacific defense operations, as well as future industrial customers requiring uninterrupted, high-quality power.

The project is also a key enabler of Alaska's broader energy strategy, ensuring that renewable and firm resources—most notably energy from the Bradley Lake Expansion Project—can be delivered across the Railbelt. By strengthening transmission capacity, modernizing the grid, and improving resilience, CIPLink represents a cornerstone investment in Alaska's long-term energy security, economic competitiveness, and national defense readiness.

SUSITNA-WATANA HYDROELECTRIC PROJECT

Alaska's biggest hydroelectric potential lies within the Railbelt region. In 2011, AEA received authorization to pursue a FERC license for the Susitna-Watana Hydroelectric Project to provide clean, reliable, and stable-priced energy for 100+ years. Due to the state's fiscal constraints, licensing activities were suspended in 2017, following FERC's issuance of its updated Study Plan Determination on the work completed on the 58 FERC-required environmental studies. The project has been put into abeyance, allowing the State to preserve the investment already made. The project was taken out of abeyance in 2019, when Governor Dunleavy rescinded the stop order.

The remote dam site is located on the Susitna River roughly 80 river upstream from Talkeetna and 30 miles above Devils Canyon. The canyon creates a natural an anadromous fish barrier. The project includes two transmission corridors, one running north from the dam site to the Denali Highway and one running west from the dam site to the Alaska Intertie. One of the corridors would also provide access to the dam site. The overall nominal capacity of the three-turbine dam is 459 megawatts capable of producing 2,800 gigawatt hours of power annually, more than 50 percent of the Railbelt's current demand.

Fire Island Wind subsea cable transfer at the Don Young Port of Alaska; CIPLink spools will be ~3× larger.

CEA and MEA BESS in Anchorage, Alaska.

BATTERY ENERGY STORAGE SYSTEMS (BESS)

Battery Energy Storage Systems (BESS) is an innovation introduced to Alaska by Golden Valley Electric Association in 2003. The BESS is one of GVEA's initiatives to improve the reliability of service to GVEA members. One of the requirements for construction of the Alaska Intertie was a reactive power supply capable of delivering power, should generation fail. GVEA's BESS has been doing just that for over 20 years. To continue promoting energy generation diversification, AEA has invested over $28 million on BESS projects across the Railbelt. A recent BESS installation was intended to add to stabilizing power distribution and continuity along the Railbelt. A Central Region (Anchorage and Matanuska-Susitna Valley) BESS was constructed in FY2024. This BESS, which was determined to be Bradley Lake Required Project Work, began operation in fall of 2024 to support transmission system power quality. In connection with this work, AEA has a long-term agreement with the utilities to provide oscillation-damping services associated with the Bradley Lake Hydroelectric Project, further supporting Railbelt transmission stability. BESS assets increase efficiency of existing and future intermittent low-cost renewable energy generation units with the ability to store renewable energy and transmit such energy for times when needed, optimizing economic energy generation. The BESS serves as a backup resource for both Chugach and MEA during disturbances, such as transmission line interruptions, generation issues, or other load shed events. It can instantly respond to power disruptions, injecting or absorbing power as needed to stabilize the grid. It also increases the resiliency of the Bradley Lake Hydroelectric Project, which benefits the Railbelt. Finally, BESS reduces generation and operational costs for Railbelt utilities, by reducing the need (and fuel) to provide spinning reserves—capacity that must currently be kept in reserve on natural gas and hydro generators. By moving spinning reserves to the BESS from existing generators, the system is projected to lower natural gas consumption by about 5% annually for both Chugach and MEA.

AEA CONTINUES TO WORK WITH THE BOARD OF DIRECTORS AND THE RTO TO EXPLORE ADDITIONAL ENERGY POLICY UPDATES THAT WILL SPEED ENERGY GROWTH, ACCELERATE ENERGY TRANSMISSION RELIABILITY AND REDUNDANCY, AND CONTINUE TO LOWER THE COST OF ENERGY FOR ALASKANS.

ALASKA'S ENERGY LANDSCAPE INTO THE FUTURE

Alaska's future energy landscape is driven by Statewide Energy Goals and recommendations from the Alaska Energy Security Task Force (Task Force). Statewide Energy Goals include:

- **Reliability and redundancy** for critical infrastructure (including five military bases).
- **Lowest-cost** generation and transmission upgrades.
- Integration of **renewables and emerging technologies.**
- Ensure **long-term stability through diversified energy sources,** including natural gas pipeline development.

The Task Force was composed of Alaska's leading energy experts through Administrative Order (A.O.) 344 and 345. The A.O.'s established the following energy priorities, which the Task Force advanced through over 80 specific actions.

Section 3: Task Force Progress discusses the Task Force and progress for actions pertaining to the Railbelt region.

West Fork Upper Battle Creek Diversion. Homer, Alaska.

Section 4

AEA-OWNED ASSETS & STRATEGIC PROJECTS

Statewide Railbelt Energy Vision

AEA-Owned Assets and Strategic Projects Include:

- Alaska Railbelt Transmission System Upgrades
- Bradley Lake Expansion Project
- Cook Inlet Powerlink (CIPLink)

The following pages profile the timeline, project components, strategic importance, economic benefit, and key insights for the projects and initiatives listed above.

Alaska Intertie

BRADLEY LAKE EXPANSION PROJECT

The Bradey Lake Expansion Project is a major expansion of the largest hydroelectric facility in Alaska, on the Kenai Peninsula. The Bradley Lake Expansion Project will redirect water from the Dixon Glacier (Dixon Diversion Project) to the reservoir for the Bradley Lake Hydroelectric Project, increasing energy output and providing renewable energy to the Railbelt transmission system. **Total estimated cost as of FY26: $400 million.**

PROJECT COMPONENTS:

Diversion Infrastructure: A diversion dam and intake structure at Dixon Glacier.

Tunnel Construction: 4.7-mile tunnel to convey water.

Reservoir Enhancements: Raise Bradley Lake reservoir dam wall by 16 feet.

Bradley Lake

KEY INSIGHTS:

Increases energy production by 50% annually, equivalent to powering 30,000 homes.

Reduces 1.5 million cubic feet of natural gas demand annually.

Eliminates 100,000 metric tons of CO_2 emissions annually.

ECONOMIC BENEFITS:

3,250
Jobs Created
(direct, indirect)

$260M
in Labor Income

$584M
Total Economic Output

STRATEGIC IMPORTANCE:

Grid Resilience: Stores additional energy for the Railbelt grid, increasing reliability.

Renewable Energy Reliability: Helps manage the output of renewable energy in coordination with variable sources like wind and solar.

Rural Energy Cost Reduction: When Railbelt energy costs decrease, so do residential rates for rural Alaskans through the Power Cost Equalization Program.

PROJECT TIMELINE:

	2024	2025	2026	2027	2028	2029	2030
Pre-Construction (studies, permitting, design)	■	■	■	■			
Construction				■	■	■	■
Project Completion							■

COOK INLET POWERLINK (CIPLink)

The CIPLink project is a High-Voltage Direct Current (HVDC) transmission project, that will advance energy reliability across the Railbelt. The CIPLink will create a redundant pathway between the Kenai Peninsula and Anchorage, linking generation assets with power consumption centers. **Total estimated cost as of FY26: $413 million.**

PROJECT COMPONENTS:

Submarine HVDC Line: Extends across Cook Inlet.

Converter Stations: Constructed at each end of the line to convert power for long-distance travel for local distribution.

System Enhancements: Associated overland HVDC transmission lines to connect the submarine HVDC line to converter stations.

The subsea cable shown here is similar to the high-voltage direct current cable that will connect Beluga and Nikiski as part of the Cook Inlet PowerLink project.

KEY INSIGHTS:

Enables the transfer of the cheapest and best power sources, while reducing wasted energy.

Allows the full utilization of Bradley Lake Hydroelectric Project energy.

Improves powerline capacity and reduces risk by creating a redundant energy transmission path.

ECONOMIC BENEFITS:

1,470
Jobs Created
(950 direct, 520 indirect)

$129M
in Labor Income

$332M
Total Economic Output

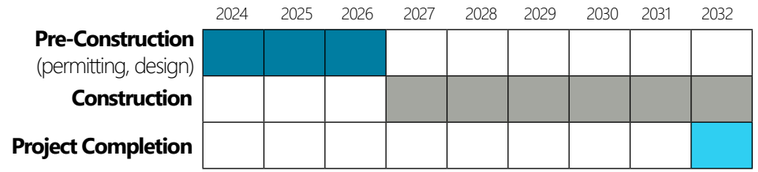
STRATEGIC IMPORTANCE:

Integrate Clean Energy: Added power capacity allows for future renewable clean energy projects.

Protection Against Disruptions: Redundancy in energy transmission makes the system more reliable.

Long-Term Cost Savings: Improved transmission efficiency reduces energy loss, which lowers costs.

PROJECT TIMELINE:



ALASKA RAILBELT TRANSMISSION SYSTEM UPGRADES

The Railbelt, spanning from Kenai to Fairbanks, is constrained by legacy transmission infrastructure lacking capacity and redundancy. Current infrastructure lacks the ability to support renewable generation, data centers, industrial electrification and increase electric vehicle load. To address these deficiencies, the Railbelt Transmission System Upgrades Project is a multi-phase infrastructure project to strengthen reliability, flexibility, and future-readiness of Alaska's primary electric transmission corridor. Upgrades include enhancing existing infrastructure and constructing new transmission lines to increase capacity and reduce outages. These projects are aligned with the 2050 Railbelt Strategic Transmission Plan (RSTP) and are mutually supported by all Railbelt utilities.

69 kV Removal with helicopter

KEY INSIGHTS:

Brings the Alaska Railbelt transmission system to near parity with the lower 48.

Upgrades of aging infrastructure ensures the grid can meet growing demand.

Improved efficiency lowers costs, benefiting consumers.

STRATEGIC IMPORTANCE:

National Security: Ensures energy reliability and redundancy for five military bases.

Community: Strengthens grid reliability for 75 percent of Alaska's population, reducing outage risks and supporting economic development.

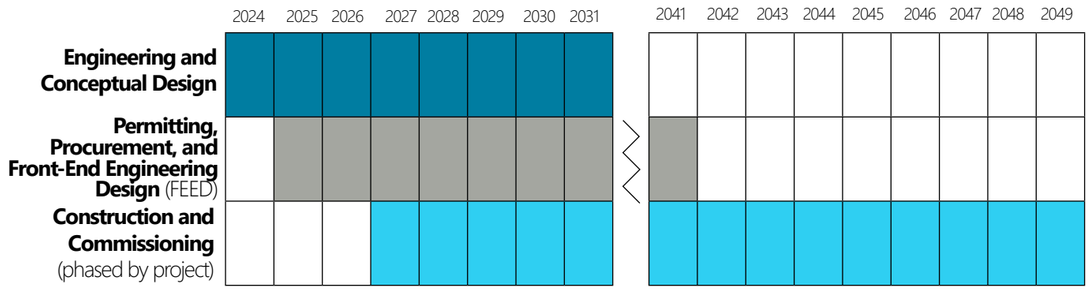
Resilience: Provides redundancy, reduces system losses and strengthens stability across the Railbelt.

ECONOMIC BENEFITS:

6,095
Jobs Created
(3,843 direct, 795 indirect, and 1,458 induced)

$1.269B
Total Economic Output

PROJECT TIMELINE:

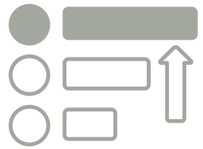


ALASKA RAILBELT TRANSMISSION SYSTEM UPGRADES (CONT.)

Each improvement project is organized by priority level. Note that all projects within the same category (high, medium, or low) share equal priority. The intent is to highlight the most impactful system improvements, not to prescribe a strict order of execution.

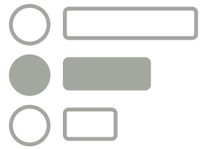
Kenai Intertie Construction, Kenai Peninsula (2025)

Statewide Railbelt Energy Vision



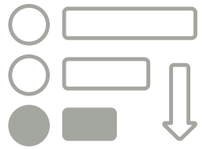
HIGH-PRIORITY TRANSMISSION PROJECTS: THE KEY SYSTEM IMPROVEMENTS

The analysis conducted within the RSTP identified a core portfolio of projects that are essential. These system improvements represent the foundational investments needed to build a strong and resilient Railbelt grid. **These projects are characterized by their high value across all regions of the system in terms of reliability and economics.** They maximize the system's ability to integrate generation resources across the Railbelt, enabling regionwide resource planning, eliminating barriers to entry for new generation, and reducing the risk of stranded assets.



MEDIUM-PRIORITY TRANSMISSION PROJECTS: TARGETED UPGRADES FOR INTRA-REGIONAL RELIABILITY

The system improvements that fall into the medium-priority category are focused on building reliability within specific regions. While the high-priority projects form the main electrical connections between the Railbelt's three regions, **these projects are necessary upgrades to individual regions' transmission networks.** They address growing electricity demand, integration of new resources, and resolve reliability constraints within the Northern and Central regions.



LOW-PRIORITY TRANSMISSION PROJECTS: ENABLING HIGH LOAD GROWTH AND NEW RESOURCES

The projects in the low-priority category are required to meet the reliability standards for a high-load growth scenario. **These upgrades are necessary only if "High-Load" growth materializes in specific areas, or if the utilities/ independent energy developers choose to build specific large-scale power plants in particular locations of the Railbelt.** In addition, the low priority projects consist of those improvements that are primarily needed when large amounts of generation are moved outside the core of Anchorage and Palmer areas. These projects are in the long-range strategic plan at a low priority to ensure that the Railbelt is prepared for multiple possible futures without committing funds to infrastructure that may not be needed.

HIGH-PRIORITY: INCREASE ENERGY TRANSFERS BETWEEN THE CENTRAL AND SOUTHERN REGIONS

The Anchorage to Soldotna Pathway currently consists of a single line—the Kenai Intertie—connecting Anchorage to the Kenai Peninsula. This line must be upgraded to significantly increase transfer capacity and reduce energy losses between regions. These upgrades are essential to unlocking the Kenai Peninsula's energy potential and will enable planned hydro and other renewable resources to deliver firm power to the broader Railbelt system. **Installation of a new high-voltage direct current (HVDC) transmission line (CIPLink)** between the Central and Southern regions will enable reliable power transfer, in accordance with established planning and operational standards. To provide a redundant path between the Central and Southern regions, an additional transmission line is required. Given the length of the subsea route, an HVDC line is recommended. Upgrades to the Kenai Intertie require reconducting and replacing the existing transmission line structures between Anchorage and Soldotna to transmit at a higher voltage of 230kV. Much of the physical line construction has already been completed by the utilities and AEA. Upgrades to the existing Kenai Intertie will reduce system losses through line loss. Reducing these losses improves the economic efficiency of the power system and supports long-term reliability. As Bradley Lake Expansion Project is developed, the annual energy losses for Bradley Lake increase significantly as the plant's annual average output rises. In the existing transmission system during high transfers, **nearly 25 percent of the energy generated at Bradley Lake is lost,** meaning it is not available to Railbelt customers due to extremely high transmission line losses. In simple terms, If Bradley Lake's output is 110 MW, only 80-85 MW is actually delivered to customers. Typical transmission losses in the lower 48 range from two to five percent. Upgrading the transmission system results in delivering more usable energy to northern utilities and unlocking opportunities for new generation development on the Kenai.

HIGH-PRIORITY: INCREASE ENERGY TRANSFERS BETWEEN THE CENTRAL AND NORTHERN REGIONS

Increasing energy transfer and reducing losses along the Anchorage-Fairbanks Pathway is a critical upgrade for the Railbelt. Transmission improvements between the Central and Northern regions will provide greater and more efficient transfer capacity, enable reliable power delivery, reduce energy losses, and allow for Railbelt-wide planning—all contributing to a more reliable, economically efficient grid. The project involves upgrading the existing transmission network between the Anchorage area and Fairbanks from 138 kV to 230 kV. This includes the AEA-owned Alaska Intertie, the 26-mile section of the MEA-owned portion of the Alaska Intertie, the GVEA-owned Northern Intertie, the GVEA-owned Lattice Line and the Chugach owned southern termination of the intertie. In addition to upgrading existing transmission lines, a second 230 kV Central–Healy Intertie—**a new line that parallels the existing Alaska Intertie**—must be constructed to create a redundant transmission path between the Central and Northern regions. This second line is essential for reliability and increased power transfer capability. It ensures the Northern region is not isolated from the rest of the Railbelt due to a single transmission outage, and the Central area remains connected to key generation resources in the north. Increasing the operating voltage of the Central and Northern regions from 138 kV to 230 kV, coupled with the added Central–Healy Intertie, substantially increases power transfer capability between regions.

HIGH-PRIORITY: UNLOCKING SOUTHERN REGION RESOURCES

The Southern region of the Railbelt, on the Kenai Peninsula, has abundant renewable energy potential. However, the existing 115 kV transmission system is a significant bottleneck. In particular, **the Bradley-Soldotna Pathway does not have the capacity to deliver the full output of existing resources,** nor support new large-scale renewable projects like the Bradley Lake Expansion Project. The existing 115 kV HEA/AEA system has a critical limitation between Bradley Lake and Soldotna, which prevents further capacity development in that area restricting Bradley Lake from operating at full output. The following upgrades are necessary to unlock this resource potential and ensure the region's clean energy can be delivered reliably to the main load centers north of the Kenai Peninsula. The plan recommends two key transmission upgrades. First, the primary transmission line between Soldotna and Bradley Lake will be upgraded to a higher-capacity 230 kV HEA-owned line. Second, a new 230 kV transmission path is required to ensure reliable power delivery to Soldotna.

HIGH-PRIORITY: UPGRADE AND BUILD BATTERY ENERGY STORAGE SYSTEMS (BESSs)

As the Railbelt transitions from a grid dominated by traditional generators and begins to integrate more inverter-based resources, the system will lose some of the inherent physical properties that have helped keep the system stable. BESSs will help address maintaining stability and reliability in an isolated power system while enabling energy generation transition and modernization of the grid. With the development of advanced grid-forming (GFM) inverter controls, BESSs can provide significant support to systems like the Railbelt. **BESSs with GFM controls can provide stabilizing effects similar to conventional power plants, stability during disturbances, and restoration services following the loss of a generator, loss of load, or blackout.** Additionally, expanded BESS capacity can enhance the operational flexibility of the grid. This plan recommends upgrading existing BESS facilities to modern GFM capability and constructing new and expanded GFM BESS capacity.

HIGH-PRIORITY: IMPROVING TRANSMISSION ACROSS KNIK ARM

The transmission corridor across Knik Arm is a critical electrical link connecting the Anchorage Bowl to the system north of Knik Arm and to the southern end of the Anchorage–Fairbanks Pathway. The main component of this transmission corridor is a set of 230 kV submarine cables that are more than 40 years old and will likely require replacement before 2050. The 230 kV CEA-owned cables are vital to the Railbelt power system for several reasons. First, this route represents one of the primary paths for serving Anchorage-area power from the Anchorage-Fairbanks Pathway, and the HVDC Intertie belonging to the Anchorage–Soldotna Pathway. **This makes the Knik Arm connection a key element for inter-regional power transfers.** Second, given the existing gas-fired generation and the potential for new generation resources west of Anchorage this east-west undersea cable route requires additional transfer capacity to meet future needs. This upgrade is common to all scenarios in the RSTP with existing infrastructure approaching end-of life, making this CEA-owned project a high-priority investment for the Railbelt.

Palmer, Alaska.

MEDIUM-PRIORITY:
IMPROVE THE TRANSMISSION SYSTEM THROUGH MEA

As the population and electrical demand grow in the Matanuska-Susitna Valley, the existing network within MEA service territory becomes a bottleneck for importing power into MEA and reliably serving the load. To address this, the plan identifies two solutions that scale according to the expected level of future growth. For moderate load growth, the plan calls for reinforcing the existing 115 kV system within MEA by adding new lines and upgrading conductors on others to increase capacity. For an MEA future grid with high load growth, more comprehensive rebuild is required. The rebuild involves upgrading key transmission corridors between CEA and MEA, creating two parallel 230 kV high capacity paths through the MEA system coupled with the need to build a major new substation (Fossil Creek) to manage the higher power flows and potential outage scenarios.

Fairbanks, Alaska.

MEDIUM-PRIORITY:
IMPROVE THE TRANSMISSION SYSTEM IN AND AROUND FAIRBANKS

The transmission network serving the Fairbanks area and communities to the southeast of Fairbanks require improvements to handle future load growth and to reliably connect new energy resources. The plan identifies two key projects to meet these needs. First, a new 138 kV line connecting the Fort Knox area to North Pole is required to support the integration of renewable energy. This line also relieves transmission congestion between Fairbanks and North Pole. Second, a new 138 kV line between Fort Wainwright and Delta Junction area is required. This creates a second electrical path to improve reliability for communities along this corridor, prevents overloads on the existing network during an outage, and supports potential future load growth.

LOW-PRIORITY PROJECTS

Serving High Load Growth In and Around Anchorage
These upgrades are only required if the "High Load" forecast, which anticipates significant electrification, materializes in the Anchorage area and decommissioning of generation in the Anchorage area occurs. The "High Load" forecast envisions increased electrical demand that would congest the downtown Anchorage transmission network. To prevent equipment overload and ensure continued reliability, the RSTP calls for upgrading conductors on local 115 kV lines to increase their thermal capacity and add new transformers at key substations in the south, east, and northern portions of the Anchorage area to handle the increased power flow.

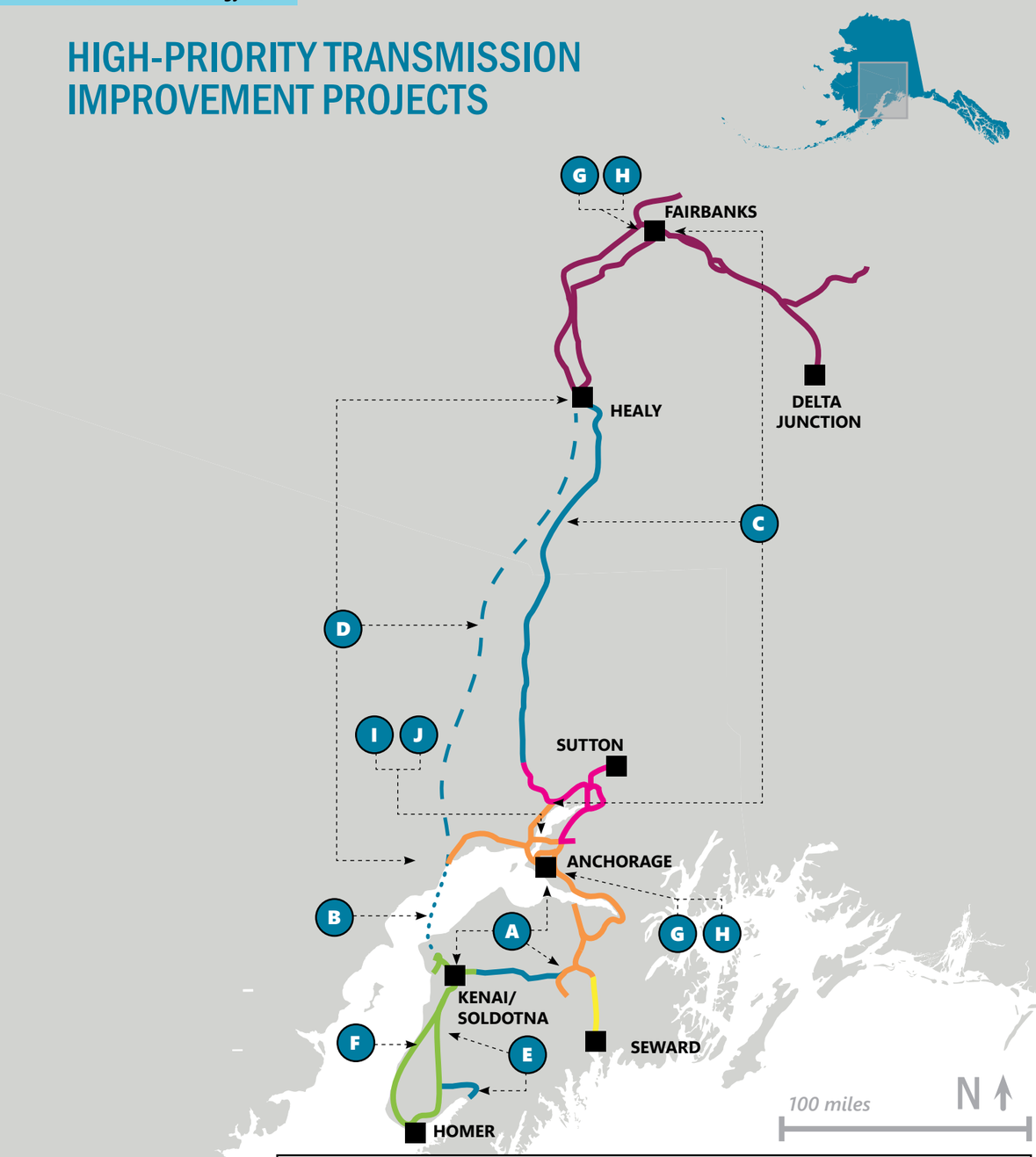
Interconnecting Large Synchronous Generation Plants Near Pt. MacKezie
The transmission upgrades required in the Beluga and Point MacKenzie area are highly dependent on which of the 2050 generation scenarios becomes reality. For example, if a single, large synchronous power plant is built west of Point MacKenzie, its interconnection would require adding new 230 kV lines between the plant and Anchorage. Alternatively, if the future generation portfolio includes several distributed synchronous plants, a new substation would be needed to connect to a proposed plant at Lake Lorraine. These projects are therefore planned only in response to the specific type and location of large generation facilities that are ultimately chosen to power the Railbelt.

Interconnecting New Renewable Facilities on the Kenai Peninsula
These improvements are contingent upon the development of new, large-scale renewable projects proposed for the northern Kenai Peninsula, between Soldotna and Bernice Lake. The existing grid in this location does not have a suitable point of interconnection for new generation facilities.

Serving Load-Growth in the Northern Region
The 69 kV sub-transmission network in the Northern Region is approaching the limits of its load capacity. Given the moderate and high-load growth scenarios forecasted for the 2050 Railbelt system, this sub-transmission network requires improvements and upgrades that will allow for higher thermal capacities. This may be achieved by upgrading conductors on the existing 69 kV lines or upgrading substations and transmission lines to increase nominal operating voltage. The RSTP recommends upgrading to a higher nominal operating voltage would be the most robust solution for the Central Fairbanks and Southeast GVEA portions of Northern Region.

Serving Anchorage-Area Loads With Remote Generation
The RSTP lists three diverse generation scenarios that all assume a significant amount of generation would cease within the core Anchorage and Matanuska-Susitna Valley areas. Due to extremely high costs and future resource uncertainty, the RSTP determined that the removal of generation from the core of Anchorage and Palmer is extremely unlikely. This makes replacement and potential upgrades of the North-South 138 kV Knik arm crossing and overhead transmission improvements between Point Woronozof and International a low priority.

HIGH-PRIORITY TRANSMISSION IMPROVEMENT PROJECTS



BUILDING A PHASED CAPITAL PORTFOLIO

This effort sets forth a bold, long-term opportunity to strengthen and prepare Alaska's Railbelt transmission infrastructure for the next generation of energy development across a 25-year horizon, with investments on the order of $2.5 billion. Rather than a single undertaking, the vision is deliberately structured as a portfolio of coordinated projects that can be advanced in phases. Individual investments range from targeted near-term improvements of roughly $10 million to transformative, multi-year construction efforts that may approach $500 million as system needs evolve. Each project is designed to deliver value on its own—enhancing reliability, resilience, and performance as it comes online—while collectively building a stronger, more capable transmission system for the future.

A phased portfolio approach gives Alaska both flexibility and momentum. It allows infrastructure to be developed responsibly and incrementally, aligned with policy priorities, system conditions, and available funding, while steadily laying the foundation needed to support economic growth, energy security, and future resource development. Progress does not depend on a single decision or a one-time commitment; rather, benefits accumulate over time as each project is completed, strengthening the system step by step and expanding the range of energy choices available to Alaskans.

This document is intended to inform long-range decision-making and highlight opportunities that help shape Alaska's energy future in coordination with the Integrated Resource Plan. The Railbelt System Transmission Plan was developed with participation from the Railbelt Reliability Council through a technical working group and is designed as a complementary framework to the upcoming Integrated Resource Plan. Many of the projects identified here are expected to be reflected in that plan, providing a durable transmission foundation that enables future generation investments—whatever technologies emerge—to reliably, affordably, and securely serve Alaskans for generations.

System Improvement Projects

Map	Sub-projects	Project Owners	Project Timeline
Increase Energy Transfers between the Central and Southern Regions			
A	Upgrade Existing Intertie between Anchorage and Soldotna	AEA, CEA, HEA	1-10
B	CIPLink - HVDC Project between Anchorage and Kenai	AEA	8**
Increase Energy Transfers between the Central and Northern Regions			
C	Upgrade Existing Intertie between Anchorage and Fairbanks	AEA, CEA, MEA, GVEA	2-10
D	Build New Transmission between Anchorage to Healy	AEA	5-10
Unlocking Southern Region Resources			
E	Upgrade Existing Line between Bradley Lake and Soldotna to 230 kV	AEA, HEA	5-7
F	Create a 2nd 230 kV path between Bradley Lake and Soldotna	HEA	5-10
Upgrade and Build Battery Energy Storage Systems (BESSs)			
G	Modify Existing BESS's to be Grid Forming (GFM)	CEA, MEA, HEA, GVEA	2-3
H	Build additional Grid-Forming (GFM) BESS in all 3 Regions	CEA, MEA, HEA, GVEA	2-3
Improving Transmission Across Knik Arm			
I	Replace the 230 kV Undersea Cable due to End of Life	CEA	4-6
J	Upgrade 230 kV Overhead line between Pt. Makenzie & Anchorage	CEA	4-6

Note:
* Project partially funded and underway
** Project partially funded, scheduled for completion August 2032

Section 4

ADVANCEMENT OF RAILBELT INITIATIVES FROM THE ALASKA ENERGY SECURITY TASK FORCE

"In order to develop a report of comprehensive recommendations, the Task Force focused on strategies and actions to advance the goals of affordability, reliability, and security/resilience."

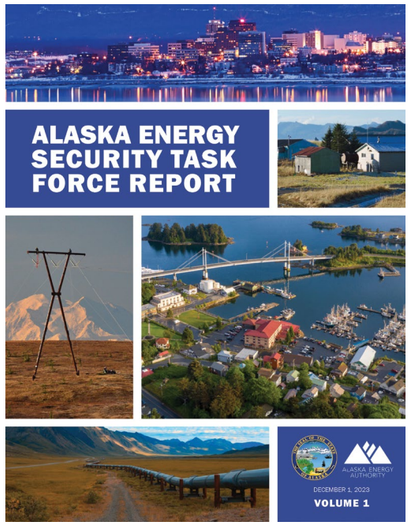
Statewide Railbelt Energy Vision

In December 2023, the Governor's **Alaska Energy Security Task Force** (Task Force) submitted the Alaska Energy Security Task Force Report, which included key strategies and more than 80 specific energy actions recommended to the Governor and Legislature to achieve the goals established by the Task Force.

The Railbelt Transmission, Generation and Storage subcommittee within the Task Force generated three (3) key strategies and six (6) actions to support key outcomes for the region. The three (3) strategies and key outcomes are identified below and progress on actions supporting them are described on the following pages.

Railbelt Transmission, Generation and Storage Key Strategies:

- **A-1 Unify Railbelt transmission and storage:** Unify all existing transmission assets along the Railbelt and Bradley Lake under Alaska Energy Authority or a new not-for-profit regulated utility.
- **A-2 Diversify generation:** Encourage and coordinate the diversification of Railbelt generation assets through projects and policy that provide opportunities to maximize energy cost savings.
- **A-3 Increase demand:** Significantly increase load to drive down energy rates.



Alaska Energy Security Task Force Report

Key Outcomes:

- Establishing a Railbelt Transmission Organization (RTO) as a unified governance structure administered by AEA to establish an Open Access Transmission Tariff that ensures fair, transparent grid access and cost recovery.
- Investing in transmission and storage infrastructure and simplifying its operation will ultimately enable the long-term goal to significantly diversify Railbelt generation and provide energy that is reliable, affordable, and generated in-state.
- Greater diversification of power generation to provide reliable, lower cost electricity, for Railbelt rate payers.
- A significant increase in load would spread fixed costs over a larger base, drive down prices for all consumers, and spur economic development.

AEA continues to work with their Board of Directors and the RTO to explore additional energy policy updates that will speed energy growth, accelerate energy transmission reliability and redundancy, and continue to lower the cost of energy for Alaskans.

STRATEGY A-1: UNIFY & UPGRADE TRANSMISSION AND STORAGE

Action A-1.1: Unify all existing transmission assets along the Railbelt and Bradley Lake under Alaska Energy Authority or a new not-for-profit regulated utility.

ADVANCEMENT OF STRATEGY A-1:
In late July of 2024, Governor Dunleavy signed HB307, establishing the Railbelt Transmission Organization (RTO) representing a significant shift in the state's energy policy and establishing a separate board of directors for AEA. As a result, Railbelt Utilities are more interconnected and system focused. The RTO's tariff will provide a mechanism that recovers backbone transmission costs across the entire Railbelt and helps to eliminate barriers to economic dispatch.

STRATEGY A-2: DIVERSIFY GENERATION

Action A-2.1: Adopt Clean Energy Standard and incentives to diversify generation.

Action A-2.2: Modify existing statute(s) requiring the Regulatory Commission of Alaska to consider long term diversification goals when approving additional/new Railbelt power generation.

Action A-2.3: Progress known near term energy diversification projects to a go/no-go decision:
- 2.3.1: Dixon Diversion (Now referred to as Bradley Lake Expansion Project)

Action 2-2.4: Progress known long term energy diversification projects to a go/no-do decision:
- 2.4.1: Susitna Watana
- 2.4.2: AKLNG

ADVANCEMENT OF STRATEGY A-2:

Diversified energy generation was also a priority of the Railbelt subcommittee. AEA has already invested in Battery Energy Storage Systems (BESS) to help stabilize power distribution and continuity along the Railbelt. Hydroelectric power is some of the most plentiful and lowest cost renewable energy available in Alaska. Bradley Lake Hydroelectric is a 120 MW facility generating about 10 percent of the total annual power used by Railbelt electric utilities and is some of the lowest-cost power for more than 550,000 Alaskans from Homer to Fairbanks. The Bradley Lake Expansion Project (Dixon Diversion) will increase the energy output of the state's largest hydroelectric generation facility by 50 percent offset 1.5 billion cubic feet of natural gas annually, and strengthen grid reliability.

On Action A-2.3.1: The Bradley Lake Expansion Project (Dixon Diversion) has also moved forward. Preliminary design including the environmental documents are complete and the design team is working on 30% design. AEA and the utilities are preparing to submit an updated Federal Energy Regulatory Commission (FERC) license amendment in January of this year.

On Action A-2.4.1: In May 2025, the Railbelt Utilities requested the State of Alaska complete the federal licensing process for the Susitna-Watana Hydroelectric Project pursuing a FERC license. This request reflects renewed interest from stakeholders and legislators in moving this massive electrical generation project forward.

STRATEGY A-3: INCREASE DEMAND

Action A-3.1: Significantly increase load to drive down energy rates.
- 3.1.1: RFP for industrial customers
- 3.1.2: Energy tax credit for new industrial customers
- 3.1.3: Identify "load friendly" areas already in-place

ADVANCEMENT OF ACTION A-3.1:
Encouraging data center development along the Railbelt through this regional vision helps encourage and attract large industrial investments. Data Centers require significant energy, up to 1 giga-watt, to run their processors. Attracting even one data center would substantially increase demand.

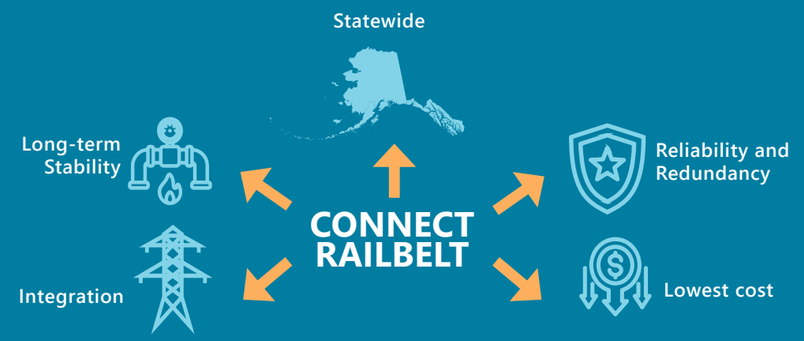
Task Force Meeting, Anchorage, Alaska.

Section 5

Building Alaska's Energy Future:

A Roadmap to Reliability, Affordability, and Growth

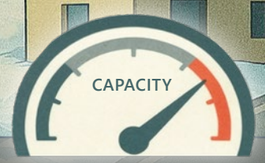
AEA is investing in Alaska's energy infrastructure to strengthen reliability, ensure long term affordability, and support economic growth statewide.



Statewide Railbelt Energy Vision

Today

Aging Systems and Constrained Power



- Infrastructure built more than 50 years ago
- A single transmission corridor with no redundancy
- Constraints limiting support for emerging growth
- High cost of energy for many communities

Next Steps: 2025-50

Stabilization and Modernization

- Grid strengthening and smart technology integration
- Upgrade transmission/ distribution lines
- Integrate diversified energy sources (renewables, storage)
- Enhance reliability in critical areas
- Reduce reliance on costly diesel in rural communities

Future Vision: 2050+

Resilient, Affordable, and Sustainable

- Secure, reliable, and resilient energy grid statewide
- Long-term energy affordability for all Alaskans
- Supports sustainable economic growth and new industries

Alaska Energy Authority
813 W Northern Lights Blvd
Anchorage, AK 99503
Phone: (907) 771-3000
Fax: (907) 771-3044
Toll Free: 1 (888) 300-8534
Email: info@akenergyauthority.org
Web: www.akenergyauthority.org
Facebook: @alaskaenergyauthority
LinkedIn: @alaskaenergyauthority