THE CLEAN ECONOMY IN ALASKA

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ATLAS PUBLIC POLICY

170,000	$714M	720 MW	23%
Estimated Homes Supplied by Renewable Power	Estimated Renewable Power Investment	Renewable Power Capacity	Power Capacity from Renewables

- Alaska's clean power buildout totals 720 megawatts (MW), or about $714 million in investment—enough to power more than 170,000 homes each year. Hydropower makes up most operational renewable power capacity in the state at 480 MW, followed by battery storage at 130 MW and wind at 60 MW.
- Across Alaska's more than 200 isolated microgrids—where electricity costs can exceed four times the national average—renewable power and battery storage are emerging tools for improving reliability and affordability.
- Of the 60 federally-defined critical minerals, 57 have deposits in Alaska, including Graphite One's Graphite Creek project—the largest known U.S. graphite deposit.

Alaska at a Glance

More than half of Alaskans live in just three cities—Anchorage, Juneau, and Fairbanks—making it the least densely populated state in the country. Alaska also has the nation's highest per capita energy use, driven by its cold climate, small population, and energy-intensive industries.

With abundant natural resources, Alaska has a strong presence in industries like energy, mining, fishing, tourism, timber, and agriculture. Alaska has also found success in hydropower production from its many lakes and rivers. Other natural features have the potential to generate renewable power—coastal areas have significant wind resources, and the state's volcanic areas could generate geothermal power. Major infrastructure investments are supporting emerging energy projects across the state, including grid resilience, solar, hydroelectric, heat pump, and battery storage projects, helping reduce energy costs and improve reliability for Alaska communities.

By the end of 2024, the state supported 10,000 clean energy jobs[1] across manufacturing, power generation, grid infrastructure, and energy efficiency—36 percent of all energy jobs in the state.

[1] Jobs are defined by the U.S. Energy & Employment Report, which has a year-long lag between collection and reporting.

Data is from the Clean Economy Tracker unless otherwise noted. Data as of June 2026.
Questions? Reach out: info@cleaneconomytracker.org. See the full methodology here.

Meeting Alaska's future energy employment needs will require a skilled workforce. The Alaska Network for Energy Education and Employment (ANEEE), launched by the Renewable Energy Alaska Project in 2017, develops clean energy career pathways by connecting K–12 schools, career and technical education programs, universities, utilities, Alaska Native organizations, and industry. ANEEE finds gaps in energy education and training and expands access to energy careers statewide through training programs and technical assistance. In the Northwest Arctic, the Alaska Technical Center in Kotzebue trains local workers for energy-sector jobs through its Process Technology program, which prepares operators for power generation roles in partnership with employers, including Kotzebue Electric Association.

Hydropower and Battery Storage in Alaska

Alaska has the nation's sixth highest electricity prices, and demand is set to climb from data centers, electrification, and energy-intensive industries like resource recovery and seafood processing. Hydropower, battery storage, and other renewables are positioned to help meet that rising demand reliably and affordably. Renewable energy supplied 32 percent of Alaska's power generation in 2025—primarily hydropower, with smaller amounts of wind and biomass—while natural gas provided 40 percent.

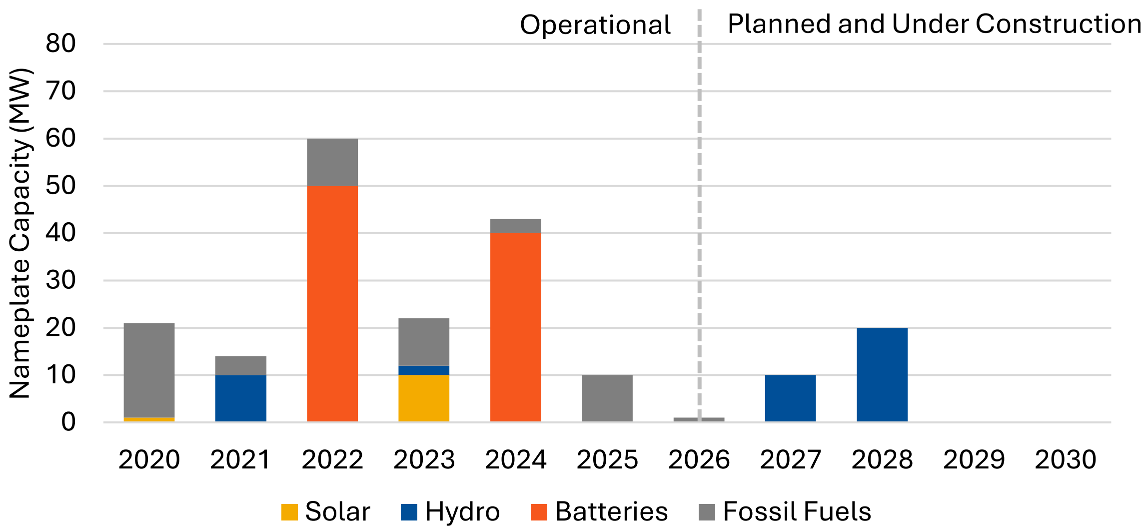
The state's operational,[2] under-construction, and planned renewable power and battery storage capacity exceeds 720 MW through 2029, representing an estimated $714 million in investment[3] across more than 120 generators—enough to power roughly 170,000 homes[4] and support more than 1,500 operations and construction jobs.[5]

Nearly 690 MW is already operational. Hydropower leads at 480 MW, followed by battery storage at 130 MW and wind at 60 MW. Another 30 MW is in the pipeline from two hydropower projects in southeast Alaska, including Juneau Hydropower's Sweetheart Lake project, which is expected to

[2] Operational facilities include projects operating, temporarily out of service, or on standby/backup. Power capacity refers to operational, under construction, and planned facilities. The figure excludes retired and canceled facilities.
[3] Investment is estimated by multiplying project nameplate capacity by capital expenditure multipliers from the National Laboratory of the Rockies 2024 Annual Technology Baseline, considering technology and operating year, converted to 2024 dollars.
[4] We calculated estimated homes powered using the national average capacity factor for each technology and national average energy use per home. These multipliers are sourced from the National Laboratory of the Rockies2024 Annual Technology Baseline and the U.S. Energy Information Administration.
[5] Estimated clean power jobs may not correspond to actual past or future jobs at each site but are an approximation. Jobs are estimated using multipliers derived from the National Laboratory of the Rockies Jobs and Economic Development Impacts models and the Decarbonization Employment and Energy Systems model.

grow the Juneau Borough's electricity supply by 20 percent and serve Juneau and the nearby Kensington Mine. No other projects are planned for at least the next five years (Figure 1).[6]

Figure 1. Power Capacity Additions Over Time



Year represents the year a generator became operational or is expected to do so. 60 MW of active wind power was deployed before 2020 and is not reflected in this chart.

Alaska is building out battery storage capacity, which allows renewables to firm a growing load. Since coming online in 2022 and 2024, Homer Electric's and Chugach Electric's battery systems have stored energy when supply is plentiful and released it as demand rises, balancing the grid and enabling greater use of utility-scale hydro like the planned Bradley Lake Expansion Project.

The Railbelt, Microgrids, and Affordable Energy Access for Rural Communities

Alaska has a two-track energy system—a centralized Railbelt grid serving 75 percent of the population and 200+ isolated rural microgrids[7] running mostly on increasingly expensive diesel. Power sources like hydropower, solar, and battery storage are becoming vital for diversifying the state's power supply, lowering bills, and promoting greater energy reliability and security.

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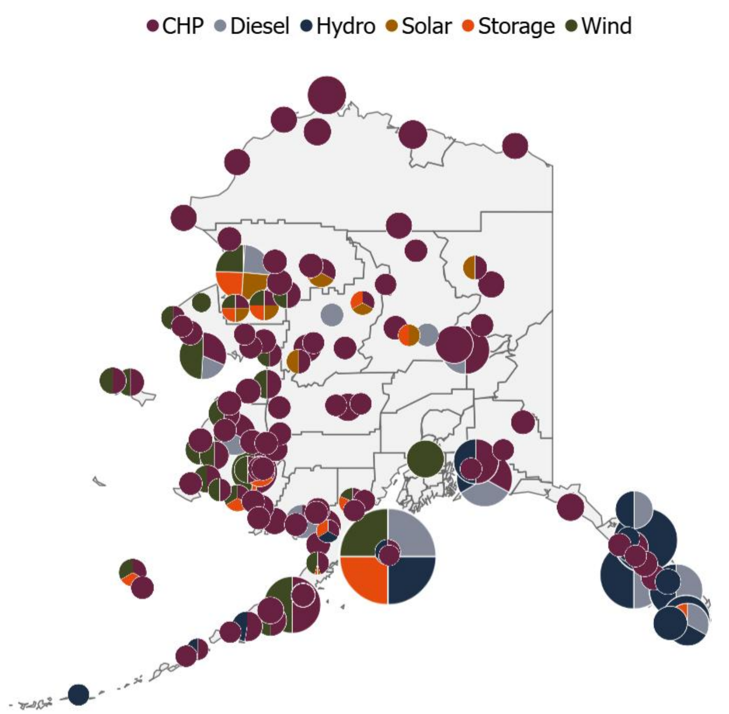
[6] Planned power plants are required to provide data to EIA on their status if they are expected to begin commercial operations within five years of the current reporting year, or within 10 years if fueled primarily by coal or nuclear energy.
[7] A microgrid is a localized, self-contained electrical network that can operate independently or in conjunction with the traditional, large-scale power grid.

The Railbelt, due to power supply shocks such as declining natural gas production in Cook Inlet, is pushing utilities toward alternative sources of power supply. The state is leaning harder into renewable power generation, securing more local sources of natural gas, and funding transmission upgrades and storage to smooth the integration of low-cost power generators into Alaska's central grid. Rural and tribal communities require a different approach.

Disconnected from centralized grids and roads, Alaska's rural communities rely on microgrids for reliable power. Alaska has the second-highest number of microgrids in the country—in terms of site quantity and power capacity—behind only Texas (Figure 2).

Figure 2. Microgrid Locations by Power Source



The size of a power plant's bubble is proportional to the nameplate capacity in megawatts generated at that microgrid, per power source. Microgrids with multiple power sources are split evenly across those sources (i.e., does not reflect the proportion of actual generation per fuel source at that microgrid).

Source: Onsite Energy Installation Database

These microgrids are fueled primarily by diesel that is barged or flown in—sometimes at more than $15 per gallon, which can lead to electricity costing more than four times the national average. Most of these systems use combined heat and power (CHP) technology that recovers waste heat from diesel generators for space heating. And although the state's longstanding Power Cost Equalization program subsidizes rural rates, it is anchored to rising urban rates. Consequently, its ability to smooth costs for rural ratepayers is increasingly strained.

As prices rise, renewable power has become a centerpiece of the state's rural energy strategy. The Alaska Renewable Energy Fund has supported $270 million in renewable projects and feasibility studies, including for rural microgrids. For example, the Native Village of Igiugig received a grant for a 200-kW solar array planned for installation in 2025. Paired with battery energy storage, it is expected to replace approximately 36 percent of the diesel fuel used for electricity generation.

Combined with state efforts, federal initiatives like the U.S. Department of Energy's Energy Improvements in Rural or Remote Areas Program and Community Microgrid Assistance Partnership provide funding, technical assistance, and workforce development support. A hydropower project led by Kootznoowoo, Inc. for the Native Alaskan Tlingit community is projected to replace 12.9 million gallons of diesel annually, supply reliable and lower-cost energy to the community's microgrid, and create 30 construction and operations-and-maintenance positions. Similarly, a project in Kokhanok anticipates replacing about 70 percent of the village power plant's diesel use within two years, and a Tok-area project is estimated to offset more than 125,000 gallons of diesel. As Alaska's energy challenges intensify, scaling these proven approaches for the state's many microgrids will be essential to achieving cost relief and energy security in remote communities.

Bolstering the Country's Critical Minerals Supply

Alaska's role in strengthening the nation's energy security extends beyond power generation. The state's critical minerals resources also provide essential inputs for battery storage, grid infrastructure, advanced electronics, and other technologies needed to meet rising energy demand. For example, Graphite One's Graphite Creek project north of Nome is the largest known graphite deposit in the United States, according to the U.S. Geological Survey. As of 2022, the United States had to import all needed flake graphite, a key lithium-ion battery anode material. In April 2025, Graphite One announced that the project would reach 175,000 tons of annual concentrate capacity, as part of a $1.1 billion project expected to employ more than 250 Alaskans during operations. It became the first Alaskan mining project on the federal FAST-41 permitting dashboard in June 2025, with operations expected to commence in 2029 at the earliest. In November 2025, the company confirmed the presence of rare earth elements in the same deposit, further underscoring the project as an essential energy and national security asset for the country.[8] Under the U.S. Geological Survey's 2025 List of Critical Minerals, Alaska has prospective deposits for 57 of the 60. Alaska's minerals are essential to energy technologies, advanced electronics, and national defense applications at a time when the United States is import-dependent on these input materials and China dominates global production.

[8] Rare earth elements are precursor materials for high-strength magnets used in electric vehicle motors and wind turbine generators. A domestic source is strategically important as China dominates global rare earth elements supply.