

Alaska: \$1 billion in renewables, more to come

Goal is 50 percent, but 30% now attained

Alaska is an oil state, but how is it handling the energy transition? Answer: Progress is being made. In 2010, the Alaska Legislature passed House Bill 306 to establish a nonbinding goal to produce 50 percent of the state's electricity from renewable resources by 2025 and reduce energy use by 15 percent per capita by 2020. Alaska is currently meeting nearly 30 percent of its electric power generation from renewable resources, almost all of which is from hydropower installations across the state.

Since the sale of the "Four Dam Pool," four formerly state-owned hydro plants, to coastal communities, the State of Alaska has invested over \$1 billion in renewable energy resources, according to data from the Alaska Energy Authority. When coinvestments by project partners are included the total is likely \$2 billion or more.

The projects include:

- Banner Peak wind project (Nome) – 2.8 MW
- Blue Lake hydro expansion (Sitka) – 16.9 MW
- Bradley Lake hydro project (Homer) – 120 MW
- Delta area wind project (Delta Junction) – 1.9 MW
- Eva Creek wind project (Healy) – 24.6 MW
- Fire Island wind project (Anchorage) – 17.6 MW
- Golden Valley Electric Association solar (Fairbanks)
- 563 kW Hiilangaay hydro project (Prince of Wales Island) – 5 MW
- Kaltag Solar project (Kaltag) – 9.6 kW
- Pillar Mountain wind project (Kodiak) – 9 MW
- Renewable Energy Fund (Statewide, small community projects)
- Terror Lake hydro project (Kodiak) – 33 MW
- Whitman Lake hydro project (Ketchikan) – 4.6 MW
- Willow Solar project (Willow) – 1.2 MW

Renewable Energy Fund

The Renewable Energy Fund (REF), established by Alaska's Legislature in 2008, is included in the above. It was formed to provide grant funding for the development of competitively selected small renewable energy projects. Over the years there have been 244 REF grants to projects totaling over \$275 million. There have been 99 operating projects built with REF contributions, collectively saving an estimated more than 30 million gallons of diesel each year. Twenty-seven new projects are in development and AEA is currently soliciting for a new Round 14 of REF project solicitations.

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Renewable energy - what new projects are coming?

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Hydroelectric opportunities

- Susitna-Watana hydro project (Talkeetna) – 600 MW
- Dixon diversion project (Homer) – 180 MW
- Grant Lake hydro project (Homer) – 5 MW
- Bradley Lake hydro expansion (Homer)
- Sweetheart Lake hydro project (Juneau) – 19.8 MW
- Thayer Creek hydro project (Angoon) – 850 kW
- Indian River hydro project (Tenakee Springs) – 180 kW
- Knutson Creek hydro project (Pedro Bay) – 150 kW
- Elfin Cove/Crooked Creek hydro project (Elfin Cove) – 105 kW

Biomass opportunities

- Biomass district energy system (Haines)
- Biomass system (Kake)
- Wood chip heating, biomass (Craig)
- Cordwood heating (Klawock)
- Woodchip heating (Northway)
- Pellet heating (Ketchikan)

Solar opportunities

- Mat-Su solar expansion (Houston)
- Solar project (Kenai Peninsula) – 20 MW

Wind and storage opportunities

- Wind-diesel project (Dutch Harbor and Unalaska) – 2 MW
- Wind and solar with electric thermal storage (Kwethluk) – 100 kW/500 kW
- Wind project expansion (Kotzebue) – 900 kW
- Wind expansion (Stebbins and St. Michael) – 900 kW
- Wind turbines (Igiugig) – 25 kW
- Wind turbine upgrades (Kongiganak, Kwigillingok, and Tuntutuliak)
- Wind to heat (Nome)
- Battery energy storage (Chefornek, Kipnuk, and Pilot Point)

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