

Akiachak Energy Efficiency Project



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A collaboration between the Akiachak Native Community (ANC) and the Fairbanks Campus of the National Renewable Energy Laboratory (NREL)

2024 Program Review

US Department of Energy Office of Indian Energy

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Project Partners and Contractors



At its northern campus in Fairbanks, Alaska, the National Renewable Energy Lab advances building technologies for extreme environments and pushes the limits of renewable energy.

Implementing energy efficiency in commercial, industrial, and municipal buildings.



**COLD CLIMATE HOUSING
RESEARCH CENTER**



Promoting and advancing the development of healthy, durable, and sustainable shelter for Alaskans and other circumpolar people.

Akiachak Native Community

Chukchi Sea



Bering Sea

Akiachak is 18 miles northeast of Bethel, on the west bank of the Kuskokwim River, in the Yukon-Kuskokwim Delta.



Akiachak

Gulf of Alaska



Akiachak

Pop: 1,027 | 93% Native
Alaskan

Remote: the village is accessible year-round by small plane, although a barge delivers supplies each summer; in winter, the river becomes a road for a hovercraft. Most residents speak Yup'ik.







Electricity in Akiachack

- **\$0.74/kWh** (w/o Power Cost Equalization discount)
- **~\$0.33/kWh** with PCE

Electricity in Colorado

- **\$0.15/kWh** (avg)

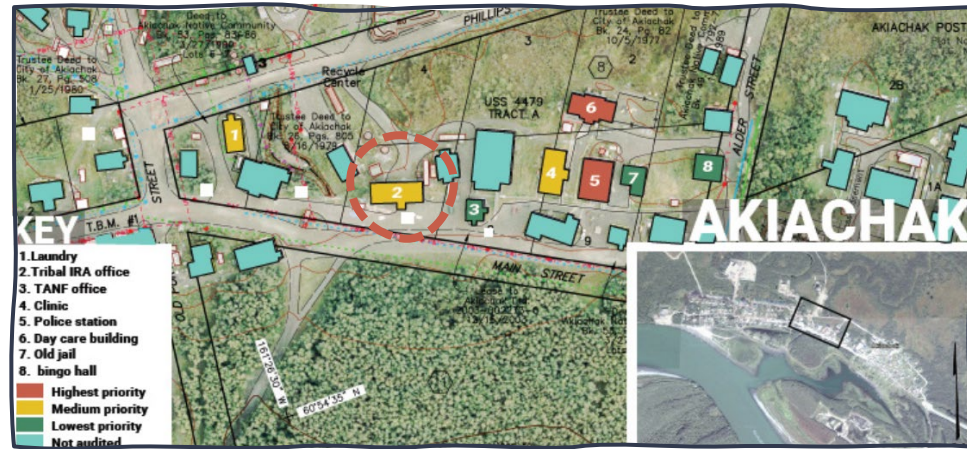
Fuel oil

- 2018: **\$5.60/gal**
- 2022: **\$6.81/gal**
- 2023: **\$6.93/gal**
- 2024: **\$7.21/gal**

Cost of heating and powering buildings

Commercial buildings used to be billed at a lower rate than residential, but within the last decade, that changed when the utility company raised it to match the residential rate.

By reducing energy use in highly-used community buildings, ANC will be less reliant on fossil fuels and less vulnerable to supply disruptions.



Energy efficiency improvements based on two energy audits.

- October 2017: first audit
- December 2022: re-evaluation
- Dec-Jan 2023: retrofit work
- January 2024-present utility monitoring

Price increases since 2017 limited the 2022 scope; supply chain bottlenecks slowed progress.

Akiachak Tribal IRA Office

Executed upgrades:

- Upgraded variable speed pump
- Replaced boiler + zone controls
- Replaced fintubes and covers
- Replaced thermostats
- Installed occupancy sensors
- Installed humidity sensors
- Retrofitted 39 LED light fixtures
- Installed nine LED fixtures
- Removed hazardous waste

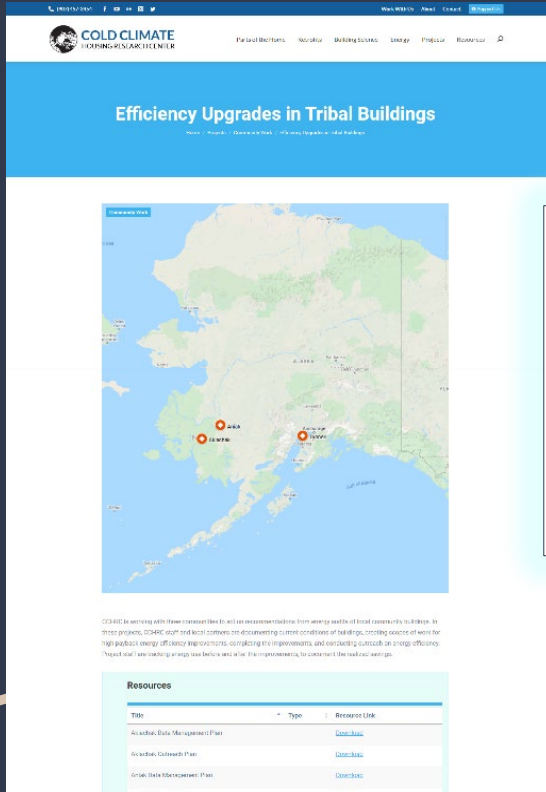


Built: 2007. Office space (2,232 ft²)

Occupancy: 11 staff, ~8-10 visitors daily

Spaces: conference room for council meetings and a kitchenette. In operation Mon-Fri.

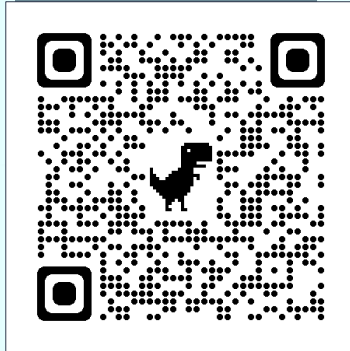
Activities



The screenshot shows the CCHRC website with the title "Efficiency Upgrades in Tribal Buildings". It features a map of Alaska with three red location markers. Below the map is a paragraph of text and a "Resources" table.

CCHRC is working with three tribal tribes to act on executive orders from energy needs of tribal community facilities. In three projects, CCHRC will find fact confirm on discovering to more conditions of buildings, creating source of work for high quality energy efficiency improvements, conducting energy audits, and recording results in energy efficiency "audit tool" and energy savings before and after the improvements, to understand the building energy.

Title	Type	Resource Link
Academy, Eula Management Plan		Click Here
Academy, Outreach Plan		Click Here
Academy, State Management Plan		Click Here



Current tasks:

- Analyzing savings: collecting utility bills to create a before-and-after comparison

Future tasks:

- Continue to analyze savings
- Final reporting

Other Notes

- **Hazardous waste removal from rural and remote areas can be a substantial part of the budget.**
 - Electronics and old lighting ballasts

A person is pulling a sled across a vast, flat, snow-covered landscape. Four dark-colored dogs are running in a line, pulling the sled. The background shows a dark line of trees under a blue sky with scattered white clouds. The scene is captured in a wide-angle shot, emphasizing the expanse of the snowy terrain.

Quyana!

Thank you!