

# ALTERNATIVE GENERATION UPDATE



JANUARY 2026

Members often ask why CVEA does not incorporate a wide variety of alternative or renewable energy resources—such as wind, solar, biomass, nuclear, and tidal energy—into its generation portfolio. Many often ask if the Cooperative has evaluated these resources and are keeping abreast of new opportunities.

For many years, the Co-op had a vision "to reduce or eliminate our dependence on fossil fuel for generation." With that vision in mind, the Cooperative reviewed many possible alternative energy solutions. Those not selected for in-depth analysis were determined to be low priorities based on their potential benefit to CVEA members at the time.

In 2021, CVEA updated its vision through a strategic planning process. One of the plan's key goals - and CVEA's highest priority today - is to "find a low-cost winter energy solution." Our dedicated team of professionals continually monitors technological advancements. If a generation resource cannot contribute to this primary goal, it is not considered. Conversely, if a viable alternative has the potential to advance this goal, CVEA thoroughly investigates it.

In this article, we provide an update on several alternative technologies; where they stand today, and the Cooperative's view on how the resource may help us achieve our mission and goals and ultimately best serve you, the member.

For additional information on historical efforts related to alternative technologies and resources, please visit *Projects* in the *About Us* section at [cvea.org](http://cvea.org).



## HYDRO POWERS THE SUMMER

Most members know that hydropower supplies nearly 100 percent of CVEA's electricity needs during the summer months—providing clean, renewable, affordable, carbon-free energy.

What many do not realize is that CVEA not only meets its summer demand with hydro, but actually has excess hydro from June through September. During this period, additional generation resources are not needed.

This reality is a major factor when evaluating new technologies or alternative energy sources, as the availability of abundant hydro four months during the year significantly impacts the cost-effectiveness, value, and feasibility of potential options.



[www.cvea.org/aboutus/projects](http://www.cvea.org/aboutus/projects)



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# ALTERNATIVE GENERATION TECHNOLOGIES

## WIND

In 2011, CVEA launched a wind assessment program to determine if the service territory had wind conditions for a commercial-scale wind project.

Since that time, studies conducted in 2012, 2014, and continuing today—using two 50-meter meteorological (MET) towers and a distributed generation display— have collected wind data at various sites in both the Valdez and Copper Basin districts. To date, none of the locations studied have shown wind resources to support a commercial project.

Currently, Ahtna, Inc. is conducting a wind study near Willow Mountain in the Copper Basin and is completing a fatal-flaw analysis. CVEA continues to monitor the progress of their work.



## SOLAR

Solar will not support a commercial power project as it produces the most power in the summer—when demand is fully served by hydro—and little to no power in winter when the Cooperative seeks alternatives to costly fuel generation.

At this time, there is no cost-effective method to store summer solar energy for winter use.

In 2012, CVEA installed a distributed solar demonstration array at the Glennallen office to provide members with a visible example of installation basics, net-metering requirements, and the realistic energy production of a small residential or commercial system in the Copper Basin.

Solar presents an opportunity for members through the CVEA Net Metering Program. Program details are available at [cvea.org](http://cvea.org).



## BIOMASS

Biomass refers to organic material or waste that contains chemical building blocks that can be used as fuel for generating electricity.

Viable biomass generation requires a centralized, large-scale source of material, such as wood bark and chips from a sawmill or landfill that produces suitable gas.

CVEA studied biomass as a potential generation resource in 2011. It was determined that biomass was not viable for commercial power production due to the lack of opportunity biomass in the service territory.

CVEA could pursue a partnership opportunity with the City of Valdez to finance a feasibility study for the Valdez landfill as a biomass resource.





# ALTERNATIVE GENERATION TECHNOLOGIES

## GEOTHERMAL

Geothermal energy captures heat from deep within the Earth. Alaska has significant geothermal potential—especially in volcanic regions such as the Aleutians and the Alaska Peninsula. The State of Alaska maintains a resource map available at the Alaska Division of Geological & Geophysical Surveys website.

Federal and state agencies continue to explore new geothermal opportunities, but geothermal development in Alaska remains limited compared to other resources due to cost and geographic challenges.

At this time, CVEA does not consider geothermal a viable option. A geothermal project would require high exploration and drilling costs, and the most promising resource locations are remote - necessitating the construction of costly transmission infrastructure.



The system above, tested in Cobscook Bay Maine in 2010 and 2011, is the largest ocean energy device yet deployed in US waters

Photo by Ocean Renewable Power Company

Courtesy of Ground Truth Trekking

## HYDROKINETIC TIDAL

Hydrokinetic tidal power is a form of renewable energy that uses submerged turbines that spin in response to tidally generated currents without the use of dams or impoundments, much like wind turbines harness wind energy.

As of now, tidal power in Alaska remains an emerging renewable energy source with promising potential due to the extensive coastline and significant tidal ranges.

Several projects and studies have been conducted to assess feasibility and environmental impacts. Companies like Ocean Renewable Power Company have initiated pilot projects, such as the RivGen Power System in Kivalina. Alaska's narrow fjords and tidal estuaries, such as Turnagain Arm near Anchorage, are identified as prime locations for tidal energy development.

Challenges such as environmental concerns, high costs, logistic issues related to remote locations, and harsh weather conditions have slowed large-scale deployment to date. Overall, tidal power is still in the pilot and testing phase in Alaska.

In addition to the challenges noted, permitting a generator in areas near the CVEA system could be costly due to the potential impact on salmon, sea lions, whales, and other marine wildlife.

High maintenance costs are also a concern. Current models must be periodically removed from the water to be cleaned and serviced or commercial divers must be contracted if done in-situ. Finally, the use of anti-fouling paints are strictly controlled.

# ALTERNATIVE GENERATION TECHNOLOGIES

## BATTERIES FOR STORAGE

A utility-scale battery energy storage system (BESS) allows an electric utility to store excess or low-cost electricity—often from renewable sources like hydro or solar—and then discharge that energy later when demand is higher or generation is lower.

While a BESS cannot provide seasonal energy storage for CVEA, it could provide measurable benefits in system stability, outage response, and operational flexibility. However, the financial return depends on diesel fuel costs, avoided maintenance, and outage reduction benefits. With CVEA's high hydro penetration, economic payback would be low to moderate.

If grant funds become available, a feasibility study could be considered to determine the potential benefit.



## CVEA-ALYESKA INTERTIE

The CVEA-Alyeska (APSC) Intertie project provides an electrical interconnection between the CVEA grid and the Valdez Marine Terminal (VMT), allowing the two systems to exchange energy.

This project will benefit APSC and the members of CVEA, reducing carbon emissions for the VMT and diesel consumption for both entities.

Construction was completed in 2024 and testing, including a successful power exchange, took place in 2025.

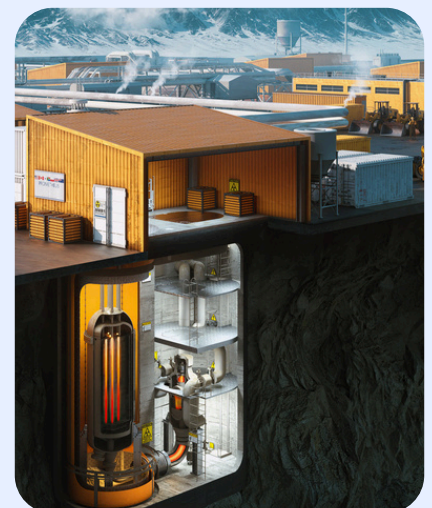
The project is scheduled to begin commercial power exchange in spring 2026.

## NUCLEAR

From 2021–2023, CVEA partnered with Ultra Safe Nuclear Corporation to evaluate a Micro-Modular Reactor (MMR®) Energy System, looking at technical feasibility, social acceptance, location, cost, and operating specifics. After the Feasibility Study was completed, an economic analysis was performed by CVEA.

While the technology was found to be technically feasible, economic analysis showed it was not cost-effective for CVEA members.

In 2023, the CVEA Board decided not to move forward with the project. The Cooperative continues to monitor the technology and may reassess if economic conditions improve in the future.





# ALTERNATIVE GENERATION TECHNOLOGIES

## HYDROPOWER

### Solomon Lake Pool Raise

In 2020, CVEA studied raising the pool level at the Solomon Gulch Hydroelectric Project reservoir to store excess water for winter power generation, reducing diesel fuel usage and potentially lowering high costs for members. The project did not prove to provide an operational nor economic benefit to CVEA members at the time.

An updated 2024 review confirmed the project could replace winter diesel generation in Glennallen while maintaining full output from Allison Creek.

Three design options were evaluated. The most feasible option is an 8-foot spillway raise, with an estimated project cost of \$10.1 million (based on 2028 construction costs).

To evaluate the feasibility of this pool raise project, CVEA must gain operating experience exchanging power as part of the CVEA-Alyeska Intertie.

CVEA has submitted a \$1.5 million Renewable Energy Fund grant application to the Alaska Energy Authority to help fund the next phase of feasibility work.

### Tiekel River

In 2016, CVEA evaluated the potential for a large-scale hydroelectric project in the Copper Basin, with a particular focus on the Tiekel River reach between the Richardson Highway and its confluence with the Copper River. The purpose was to determine whether the body of water could become a viable energy resource.

The project was found to be neither economically feasible nor necessary to meet CVEA's current or projected power needs. However, CVEA continues to monitor the concept and recognizes it's potential value as part of a future statewide energy solution.

