



Developed in 2001 as the first merchant combined cycle plant to come online in time to address the California energy crisis, the Sutter Energy Center is a **safe and reliable source of energy**. Championing an **exceptional safety and environmental record**, it utilizes the latest technology and leads with **environmental sustainability**.

Designed to capture up to 95% of the plant's current carbon emissions, the Sutter Energy Center's Carbon Capture and Storage (CCS) project highlights how advancements in this technology are pioneering efforts to **meet CO<sub>2</sub> reduction goals** while being **cost-efficient and reliable**.

This project will create approximately 1.5 million hours of highly skilled craft labor during construction, in addition to another 15-20 full-time high-wage jobs post-construction.

#### At-a-Glance Features:

- 550 MW natural gas combined-cycle
- Annual property tax for the facility is \$840K
- Critical reliability on WAPA transmission system
- 25 highly skilled full-time employees

# SUTTER ENERGY CENTER



For more information about Calpine's CCS efforts visit:  
<https://calpinecarboncapture.com>



# WHY CARBON CAPTURE?

Climate scientists agree carbon capture is a critical tool for **cost-effectively meeting CO<sub>2</sub> reduction goals** and **preserving electrical reliability**. The Sutter Energy Center Decarbonization Project will capture and store 1.75 million metric tons of CO<sub>2</sub> per year. There is substantial federal support available for a transformative and significant investment in Sutter County.



Is this technology ready for commercial deployment?

CCS technology has a well-developed history, with its roots in the 1930s. CCS was further deployed in the 1970s, with dedicated storage unlinked to carbon use since the 1990s. The advanced technology used in this project from ION Clean Energy has already been demonstrated in a lab setting and **will be further demonstrated** at Calpine's pilot facility in Pittsburg, CA.

## THE ADVANTAGE

- Combined cycle power plants with CCS are **not reliant on the weather or time of day**.
- Carbon capture in the power sector will facilitate greater electrification economy-wide, including in the transportation sector.
- Implementing the technology will address emissions **in a timely manner**.
- **Strict measures** are put in place to ensure sequestration storage addresses **community safety**.



# SUSTAINING COMMUNITY

Forty years ago, Calpine was founded on principles of sustainability. Our forthcoming application for funding from the U.S. Department of Energy (DOE) is designed to **advance transformative and innovative CCS systems**, allowing our plants to supply the electric grid with **low-carbon power 24 hours a day, seven days a week.**

Advancing these technologies promises to **bring down the cost of reliable, clean energy** while protecting existing, local jobs and creating new jobs in the operation and management of clean energy generation.

Our approach reflects Calpine's ongoing commitment to **advancing climate goals** and leading the way to a **clean energy future for all.**

## Is there a 10-mile buffer distance between all Carbon Capture infrastructure and disadvantaged communities?

As identified by CalEnviroScreen 4.0, the two nearest disadvantaged communities are both more than 10 miles away from the facility. This includes the entire chain of infrastructure from capture to transport to storage.



## Is Carbon Storage Safe?

All industry and manufacturing activity requires safety precautions; carbon dioxide is stored beneath specialized wells (called EPA Class VI) that **have strict safety guidelines.**

## What is the process for setting up storage?

Wells are subject to **strict permitting guidelines from the EPA** and regulations require that **all operators establish emergency remediation plans**, detailed post-injection site care plans, and **provide multiple opportunities for public input.**

## Is Calpine speaking with the community?

Yes. Outreach with the public began in September 2022, more than six months prior to the filing for permits. We are working with community stakeholders, leaders, and neighbors to ensure our projects are built and operated in a way that addresses unique local concerns while delivering reliable, clean energy.



# CARBON TRANSPORTATION AND STORAGE

The Sutter Region has been qualified as having exceptional regional geology for safe and permanent sequestration per a Lawrence Livermore National Labs study.



Underground storage of carbon is a **well understood practice**, with several active large-scale storage projects throughout the country, and the world.

At the site selected for the Sutter Energy Center's carbon storage, Lawrence Livermore National Laboratory and Black & Veatch separately studied the area and determined the site as **well suited for storage of large quantities of carbon** due to multiple caprock formations (layers of rock that keep the carbon sealed), no seismic activity in the area, and a considerable distance from other geologic activities. These factors ensure **safety is paramount for the project**.

What safety measures are being taken regarding the pipeline?



- A **new pipeline** will be built along the same path as existing pipeline, in order to **guarantee a high standard of safety**.
- The contents of this pipeline will **only include carbon dioxide**, and no other toxins, minimizing risks.
- Monitoring of the pipeline and coordinating with first responders from the onset.

Will existing transmission pipelines be converted to carry CO<sub>2</sub> ?

No. Calpine will build a new pipeline to safely carry carbon from the plant to the nearby storage site with leading technology.





# WATER SAFETY



As many California communities know, water is a challenging resource in the state. Calpine continues to ensure water systems are not overburdened. During the initial construction of the Sutter Energy Center, reducing water usage was important. Calpine continues to ensure water usage is minimal and wastewater meets all required safety and environmental standards.

Why is being an air-cooled power plant so important for water?



Sutter Energy Center is air cooled to minimize water use and integrates state of the art technology.

Generally, water is used for direct cooling and a constant supply is needed. By using air cooling, you substantially reduce the amount of water used in the cooling process.

## GROUNDWATER SAFETY MEASURES



- This project will **not threaten or impact water or soil resources.**
- Carbon is stored **substantially deeper than groundwater resources**, with several layers of dense geological formations between the stored carbon and water resources.
- In addition to subsurface, shallow monitoring, there is also **deep monitoring**, where any issues can be detected many years (and sometimes centuries) **before causing any negative impacts**, allowing for ample time to course correct.