



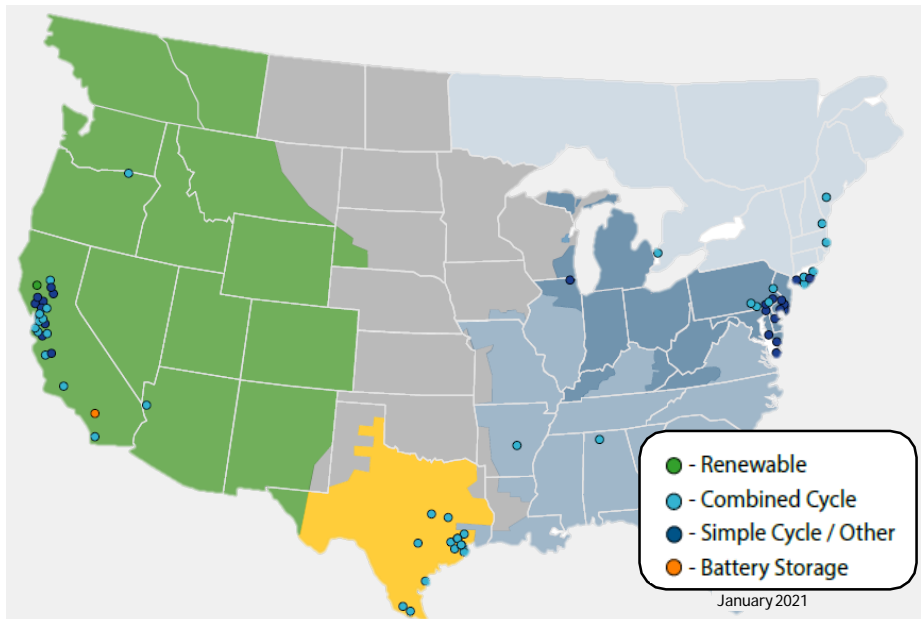
America's Premier Competitive Power Company
... Creating Power for a Sustainable Future

Calpine Sutter Decarbonization Project

May 17, 2023

Calpine at a Glance

Calpine was founded in San Jose, California nearly 40 years ago on principles of sustainability



Serve customers in **23 states**, Canada and Mexico

Largest **geothermal** power producer in the world

Largest **Natural Gas Combined Cycle** and Cogen fleet in the United States

More than **2,300** employees



POWER GENERATION

Natural gas, geothermal, battery storage & alternative technologies; best-in-class maintenance program

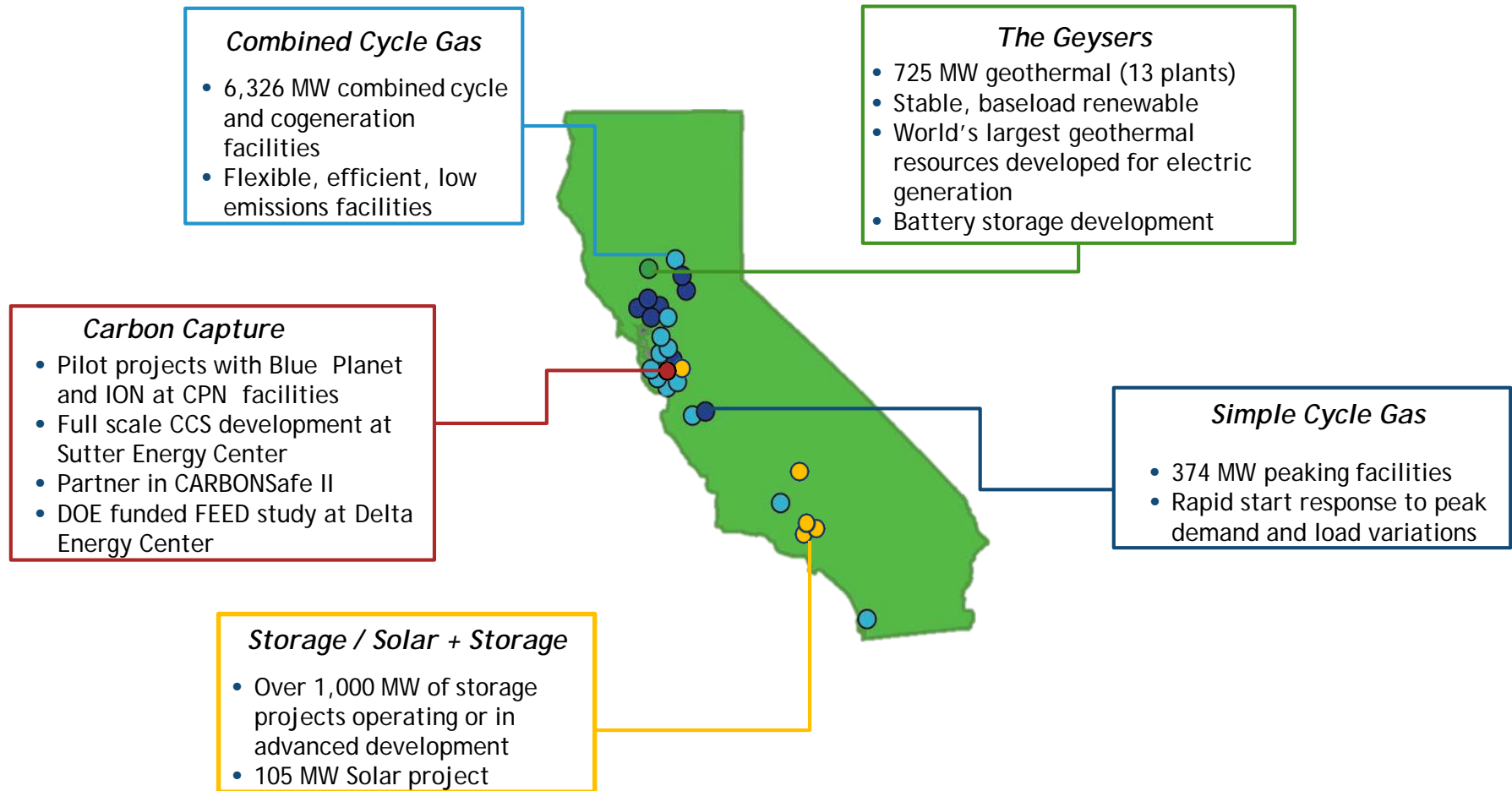


INFRASTRUCTURE DEVELOPMENT

Since 2000, constructed more MW in CA than any other entity. Significant battery storage and carbon capture projects in pipeline

Calpine in California

Calpine owns and operates 7,425 MW in the West



Excluded from image: CCGTs in Oregon and Arizona

Sutter Energy Center Today

Highly efficient ~550 MW natural gas combined cycle power plant

Located near Yuba City in Sutter County

Commercially operational July 2001



Long-standing cooperation with the local community

First air-cooled, zero-liquid discharge plant in California

Financial support to levee district



Critical for system and local reliability

State agency analyses show Natural Gas Combined Cycle plants critical to meet electric reliability through 2045

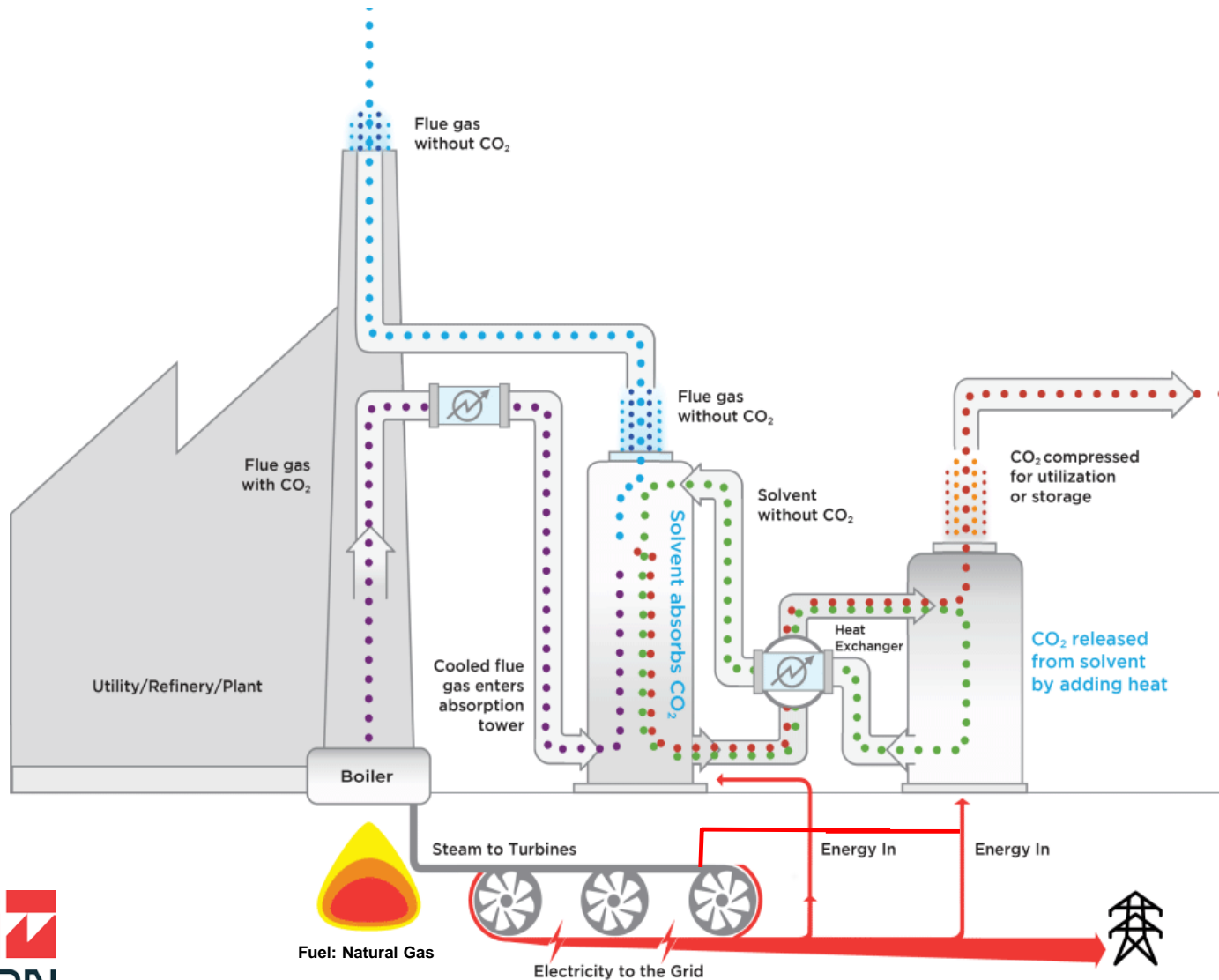
Supplies power to SMUD and CAISO

Sutter Decarbonization Project

- Post-combustion carbon capture retrofit for full 2X1 combined cycle power plant for 2027 operation
- Captures ~1.75 mm tonnes per year at baseload operation; roughly equivalent to taking 326,000 cars off the road annually
- >95% CO₂ capture efficiency
- **First-in-the-world** air-cooled capture facility
- Investigating upgrades to existing facility to increase efficiency
- Provides opportunity for significant investment and fiscal support for region
- Entire project maintains a 10-mile buffer to DACs per the SB535 Disadvantaged Communities Map, which includes CalEnviroScreen 4.0



ION Clean Energy Carbon Capture Technology



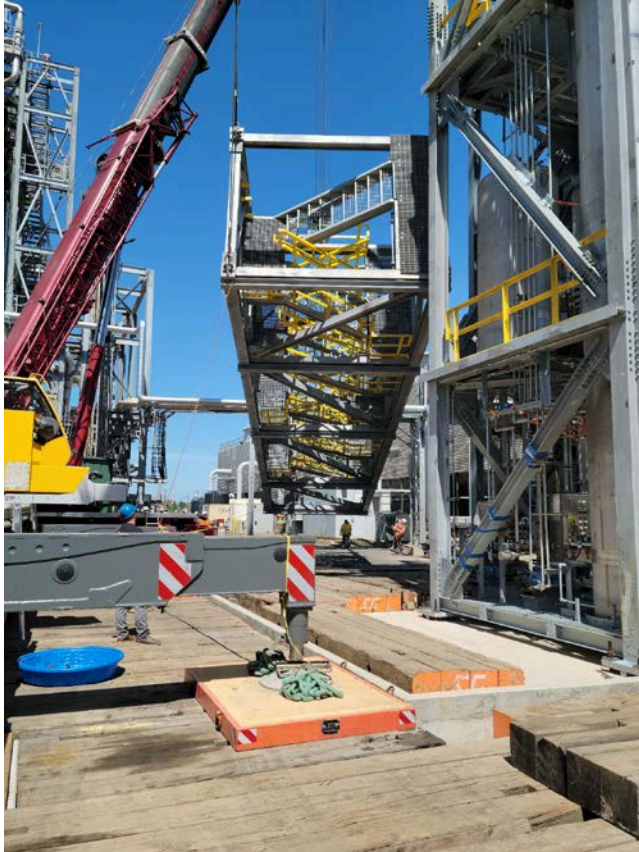
ION Clean Energy optimizes a technology that has been deployed for more than 100 years to make significant improvements as follows:

- Decreased power consumption
- Extended solvent life
- Lower emissions

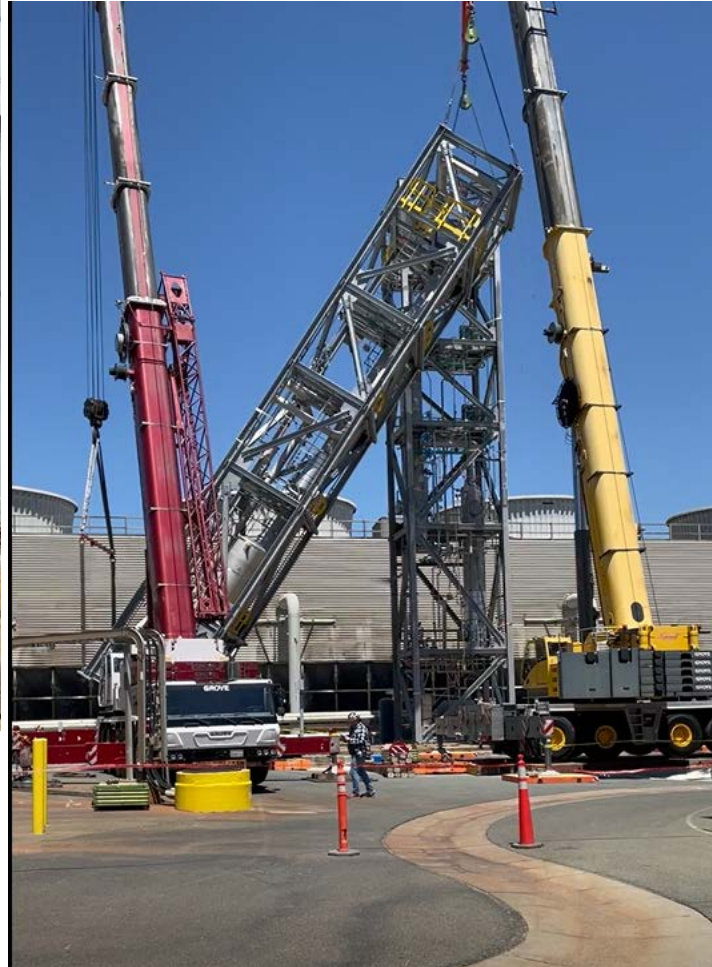
Current DOE-funded pilot:

- Operational experience (including internships)
- Support permitting emission estimates
- Optimize design parameters

ION Carbon Capture Pilot at Calpine's Los Medanos Energy Center



DOE funded carbon capture pilot at similar power plant in Pittsburg, CA.

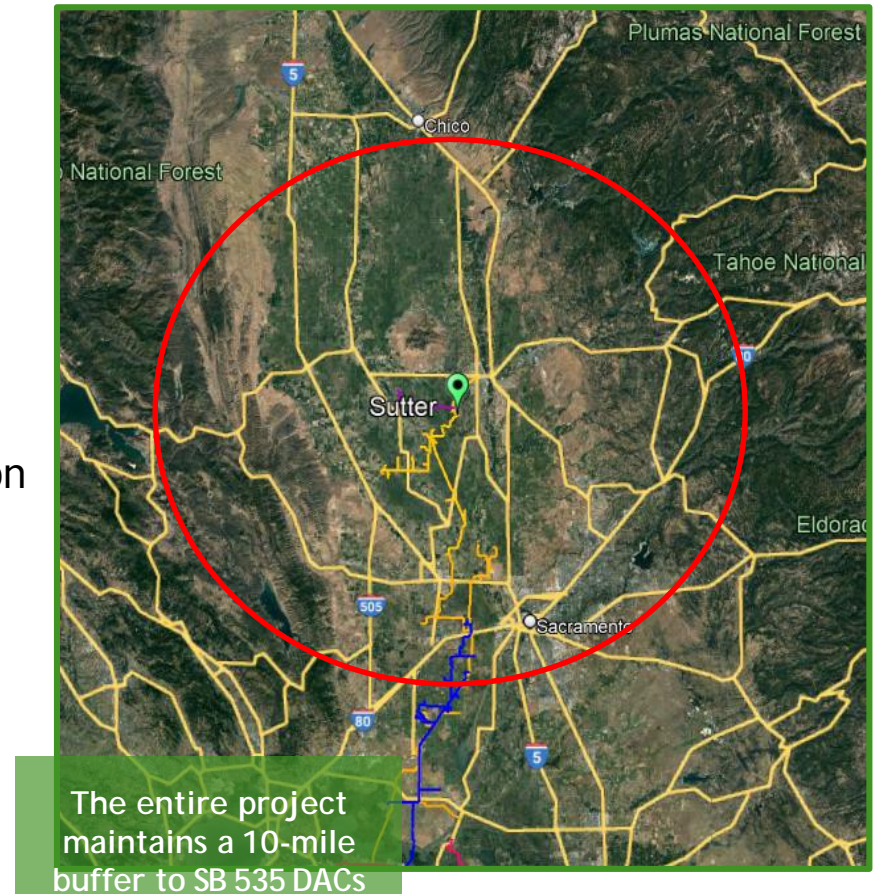


Sutter County CO2 Transport

Utilizes existing pipeline routes and state of the art technology to protect public health and safety

Transportation

- CO₂ pipeline route follows existing rights-of-way and located away from population centers
- Front End Engineering and Design Study completed
- State of the art fiber optic cable leak detection system installed and monitored to ensure the safe operation of the pipeline.
- Remote automated shutoff valves will provide safe isolation in the event of a leak
- Coordination with local emergency responders to ensure safe operation

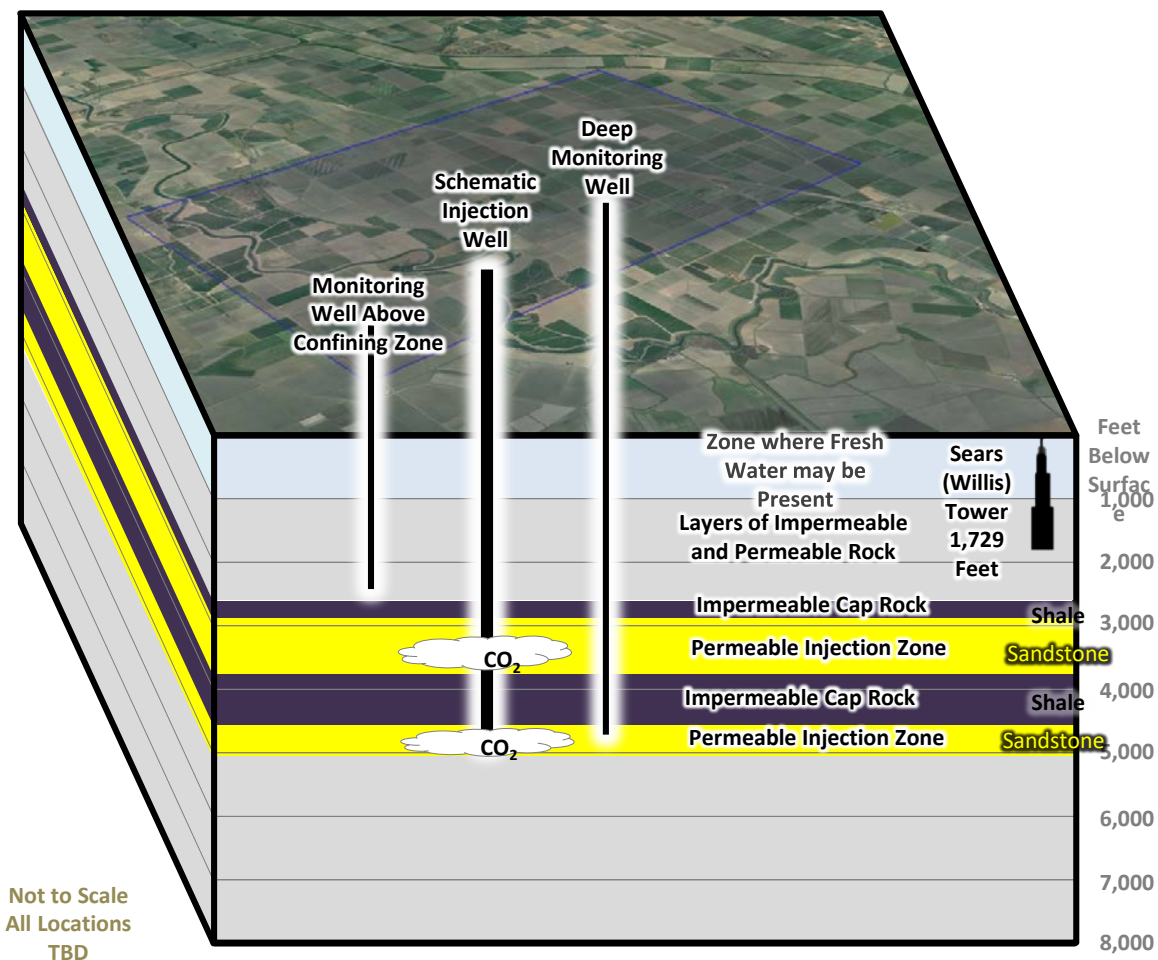


Sutter County CO2 Storage

Sutter region has excellent geology for safe, secure and permanent storage

Storage

- 1PointFive brings expertise as storage partner
- Optimal storage location and capacity verified by three independent engineering evaluations including LLNL
- DOE CarbonSAFE Phase II grant will validate characterization and safety
- US EPA well application under preparation
 - Regulations require extensive monitoring, reporting and verification



Development and Permitting Plans

- Calpine-funded integrated FEED study underway; pilot projects will inform FEED
- Extensive local, state and federal environmental and regulatory review
 - Project will submit CEC Amendment in May 2023
 - CEC CEQA review provides a robust, comprehensive, and inclusive environmental review process
- Ongoing, proactive community outreach is a critical part of any Calpine project.
- To date, early stakeholder engagement has identified and responded to the following:
 - Water use
 - Noise
 - Criteria pollutants
- Calpine intends to build this project under a Project Labor Agreement



Community Benefits Plan Development

Labor

- Calpine negotiating a Project Labor Agreement (PLA) to cover project construction
- Calpine to offer learning and development opportunities for job promotion and professional development
- Company to continue to sponsor co-op programs with students from local community colleges

Diversity, Equity, Inclusion and Accessibility

- Expanded relationships with minority-serving institutions including career fairs, jobs postings, contracts, apprenticeships, and information-sharing (Including Yuba College, Los Medanos College, and UC Davis)
- Expanded internship program including a program to research and present to community members projects related to environmental justice concerns
- New company-wide target of 10% of supplier spend dedicated to local minority-owned business enterprises

Environmental Justice

- Literature review conducted and area mapped using tools including the Climate and Economic Justice Screening Tool, EJScreen, CalEnviroScreen4.0, and the DOE Energy Justice Mapping Tool
- Quantifying, tracking, and updating throughout the life of the project the flow of impacts to communities, including benefits, neutral impacts, and potential harms
- Project design minimizes the potential for harmful impacts: power block upgrade to increase efficiency, leak detection equipment to minimize transport risks, air cooled condensers to minimize water usage, etc.

Stakeholder Engagement

- One-on-one small meetings with community groups and Sutter-specific stakeholders kicked off in September 2022, more than 6 months prior to permit filing
- Two public workshops held in May
- Community feedback directly impacts engineering design, broader project design and implementation
- Engagement will continue throughout the lifetime of the project

Calpine is committed to engaging with and listening to the public, community, stakeholders and policymakers.



Sutter Decarbonization Project Timeline

