
CALDAC: A Feasibility Assessment of a Community-Based Approach to a Regional DAC Hub

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Project Overview

- Total project funding: \$3,651,424
 - DOE: \$2,644,806
 - Cost share: \$1,006,618
- Period of Performance (estimate):
September 1, 2024 – August 31, 2026

Research Partners	Technology Providers
<ul style="list-style-type: none">• UC Berkeley• Lawrence Berkeley National Laboratory• Central California Asthma Collaborative• Valley Onward• Project2030• EPRI• AECOM• California State University, Fresno• California State University, Bakersfield	<ul style="list-style-type: none">• Capture6• AirMyne• Mosaic• Origen• Carbon Built• Blue Planet Systems• Rondo• Clean Energy Systems• ZuCO2/Pelican Renewables

Project Goals

We will complete a feasibility study that will assess the technical, environmental, social and governance feasibility of establishing a Community Alliance for Direct Air Capture.

The resulting feasibility study will include:

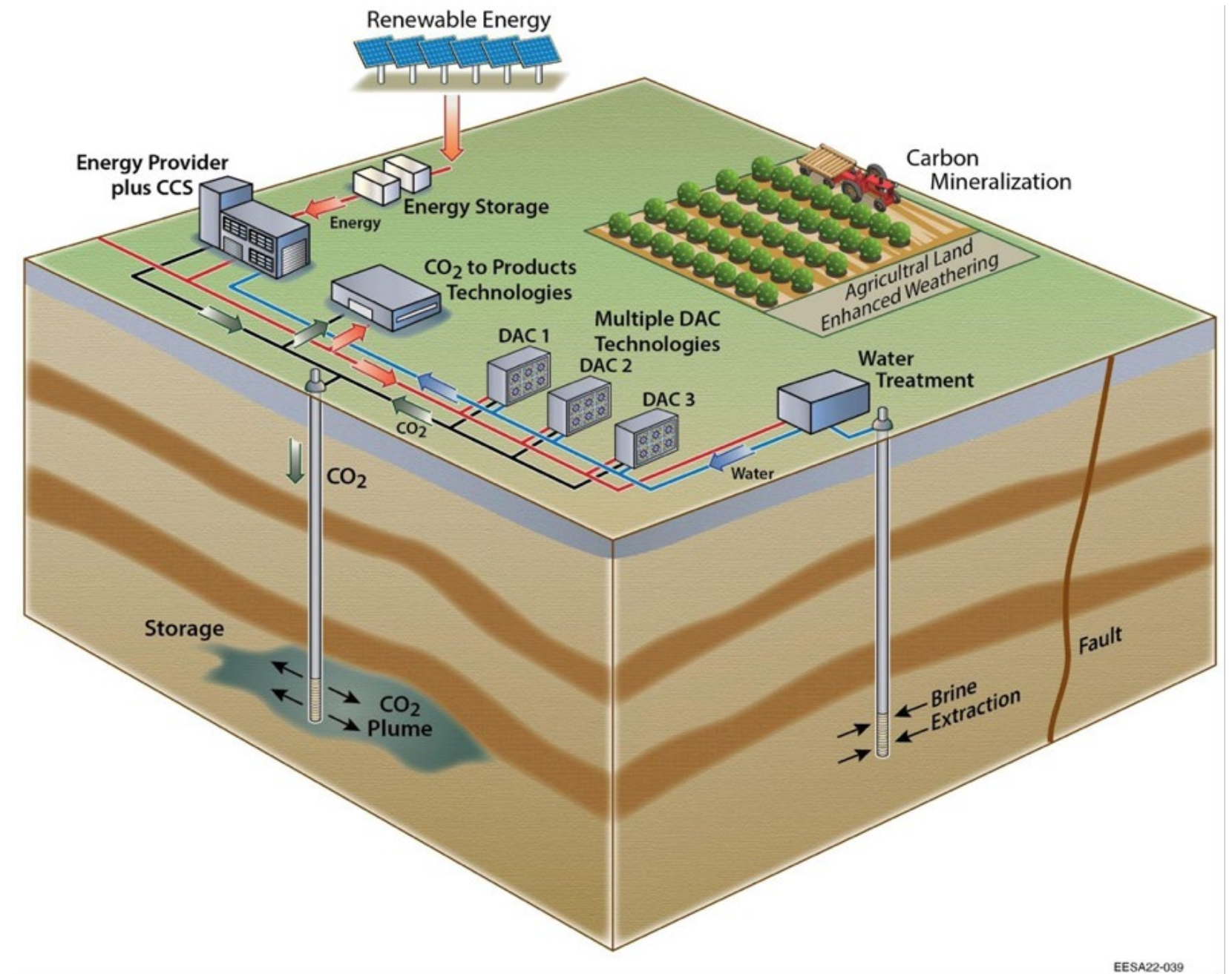
- A Hub design that is technically feasible and meets community-informed criteria for hub design; environmental, economic, and safety performance; and accountability and transparency
- A Hub owner, ownership and business model, and governance structure that delivers real and measurable community benefits while protecting the environment
- Carbon management strategies
- Co-produced data, accountability metrics, and structures to guide Phases 1, 2, 3

If we cannot meet **BOTH** community and technical feasibility criteria, the project will be **deemed infeasible**.

Project Approach

Testing the Feasibility of a Combined Socio-Technical Vision:

- A connected Hub that reflects community vision and goals, delivering meaningful benefits, accountability, transparency, and agency to the community.
- Integration of multiple DAC technologies, other carbon removal approaches, carbon utilization solutions, carbon-free, clean energy providers and energy storage solutions, water and environmental management, as well as geological storage providers.



CALDAC Feasibility Assessment Framework



Technical Feasibility Assessment

- Evaluating multiple DAC technologies
- Use literature and company data to Assess Technology, State of Development, and Scale
 - **Task Assessment of DAC Technologies**
 - Updates on technology developments
 - Current and projected technology performance
 - Target market and scale of existing demonstrations
 - **Task Assessment of CO₂ to Products Technologies**
 - **Analysis of Geologic Storage options**

Community Feasibility Assessment

- Establishing a compensated Community Oversight Council to engage in all elements of the project
 - Membership to be determined, but will include local members who represent environmental, civic, labor, and environmental justice organizations
 - Council will be co-created with the Community
- Assessment of ownership and governance models to realize community goals and vision
- Carbon removal curriculum
- Develop a Community Benefits Plan
 - Framed by community goals and vision

Community Partnership and Engagement is Key to Success

- The entire feasibility assessment will be informed by community priorities and vision
- To enable this, we have proposed:
 - Establishing a compensated Community Advisory Committee
 - Allocating approximately 20% of the budget to support community partners, which can include grants for staffing, technical assistance, etc.
 - Committing budget to provide education and outreach support
- Working collaboratively to deploy these resources to **co-develop** a meaningful community partnership

Progress and Current Status

- Finalizing award negotiation
- During the negotiation process:
 - Convened environmental justice organizations in round table discussions
 - Finalized partnership with second community-based partner organization
 - Started research on community oversight and governance models
 - Created project website to share project updates with interested parties

Next Steps

- Community Engagement
 - Community-based kickoff meeting to provide collaborative learning opportunities
 - Establish Community Oversight Council
- Analysis and Research
 - Formalize Technical and Community Assessment teams and analysis
 - Gather data from technology companies to scope analysis
 - Consideration of possible hub locations
 - Governance-focused research on:
 - Community oversight structures
 - Collaborative decision-making
 - Public authority models

Summary

- CALDAC is piloting an approach to DAC Hub analysis in partnership with community
- Project team includes technology partners, community-based organizations, and universities
- Committed to meeting technical feasibility criteria defined by DOE **and** community goals, vision, and criteria for a DAC Hub
- Will utilize technical parameters, CBP, and associated governance structures to test feasibility