



Office of Clean Energy Demonstrations Carbon Capture Demonstrations Projects Selected and Awar...

Carbon Capture Demonstrations Projects Selected and Awarded Projects



 Baytown Rendering

Awarded Carbon Capture Demonstration Projects

Baytown Carbon Capture and Storage Project

PROJECT FACT SHEET →

**COMMUNITY BENEFITS
COMMITMENTS SUMMARY →**

Fact sheets currently describe Phase 1.



 **Baytown Energy Center**

Federal Cost Share: Up to \$270 million

Recipients: Calpine Texas CCUS Holdings, an indirect subsidiary of Calpine

Location: Baytown, Texas

Project Summary: Calpine plans to build the Baytown Carbon Capture and Storage Project (Baytown CCS Project), a carbon capture demonstration facility that aims to capture carbon dioxide from the Baytown Energy Center (BEC), a natural gas combined-cycle power plant in Baytown, TX. The project would be the first full-scale implementation of CCS technology at a natural gas combined cycle power plant in the U.S. The project plans to use Shell's CANSOLV point-source technology to capture up to 2 million metric tons of CO₂ annually—equivalent to the annual emissions of nearly 450,000 gasoline-powered cars. The project plans to sequester the CO₂ in saline storage sites on the Gulf Coast. The project is evaluating the use of greywater cooling to minimize freshwater consumption by reusing wastewater. The project's primary power and steam off-taker, Covestro, plans to prove technologies that showcase the benefits of decarbonized process heat and electricity in the industrial sector.

Calpine has committed to creating a strong Community Benefits Plan with local stakeholders that prioritizes equity, justice, and creation of quality, good paying local jobs. The project has already incorporated community feedback into the project designs to reduce non-CO₂ air pollutants in addition to minimizing freshwater usage. The project estimates creating approximately 22-26 permanent jobs and 1,500,000 hours of construction jobs and has partnerships with Minority-Serving Institutions to support equitable job access and workforce development

including the support of internships from HBCUs and Hispanic-Serving Institutions. Calpine plans to develop a Community Benefits Agreement to ensure the project delivers benefits to local communities. The project will include third party Community Benefits Plan monitoring and validation to support accountability and transparency.

Project Tundra

PROJECT FACT SHEET →

**COMMUNITY BENEFITS
COMMITMENTS SUMMARY →**

Fact sheets currently describe Phase 1.



 ***The Milton R. Young Station provides reliable power for communities in North Dakota and Minnesota***

Federal Cost Share: Up to \$350 million

Recipient: Dakota Carbon Center East Project LLC (DCC East), led by project sponsor Minnkota Power Cooperative

Location: Center, North Dakota

Project Summary: Project Tundra is a carbon capture system that would be developed by the Dakota Carbon Center East Project LLC (DCC East), which is led by project sponsor Minnkota Power Cooperative. DCC East was formed to facilitate investment in and development of Project Tundra, which would be located near Center, North Dakota. The project plans to deploy carbon capture technology at Milton R. Young Station

using Mitsubishi Heavy Industries' KS-21 solvent to capture up to 4 million metric tons of CO₂ each year—equivalent to the annual emissions of 800,000 gasoline-powered cars—from the coal power plant each year. The captured CO₂ would be safely and permanently stored in saline geologic formations deep underground beneath the power plant. The storage site has already been approved for a Class VI well permit, which minimizes schedule risk. The project plans to transfer lessons learned to inform future carbon capture projects around the country.

Project Tundra plans to establish a Community Advisory Group with membership from local impacted communities, workforce organizations and labor unions, and community-based organizations to discuss and offer feedback on project initiatives and community benefits. The project team would also work with community representatives to negotiate Community Benefits Agreements to align project benefits with the needs of impacted communities and Good Neighbor Agreements to protect the natural landscape and ensure responsible project development. Project Tundra also plans to engage tribal nations and Tribal Colleges and Universities to provide workplace and educational opportunities for students.

Sutter Decarbonization Project

PROJECT FACT SHEET →

COMMUNITY BENEFITS COMMITMENTS SUMMARY →

Fact sheets currently describe Phase 1.



ION Clean Energy's rendering of a carbon capture demonstration facility

Federal Cost Share: Up to \$270 million

Recipients: CCS LLC, an indirect subsidiary of Calpine

Location: Yuba City, California

Project Summary: The Sutter Decarbonization Project plans to demonstrate and deploy a commercial-scale carbon capture system at the Sutter Energy Center, which is a 550-megawatt natural gas combined-cycle power plant near Yuba City, CA. The Sutter Decarbonization Project plans to use ION's ICE-21 solvent to capture up to 1.75 million metric tons of carbon dioxide from this facility each year—equivalent to the annual emissions of nearly 390,000 gasoline-powered cars—transport it and sequester it permanently and safely more than a half mile underground in saline geologic formations. This project will be the first in the world to deploy an air-cooling system at a carbon capture facility, which will eliminate the use of cooling water and significantly minimize freshwater usage—a critical concern of the local community and an imperative to further deployment of CCS in the arid western United States. To minimize land disturbance, the Sutter Decarbonization Project plans to construct and operate a transportation pipeline running parallel to or using an existing natural gas pipeline rights-of-way.

Sutter Energy Center has been an active community member for more than two decades—including negotiating Community Benefits Agreements—and the Sutter Decarbonization Project will include robust community engagement. The project has already incorporated community feedback into the project designs and made responsive changes to absorber column height, sound dampening systems, and the cooling method. The project also has a long-term commercial relationship with the Sacramento Municipal Utility District (SMUD). SMUD has said that the project will provide tangible benefits to its customers, which include disadvantaged and under-resourced communities, and that it will be a partner in targeted outreach and two-way engagement with traditionally excluded communities. Negotiation of a Project Labor Agreement (PLA) is underway and the project plans to engage with local and statewide labor organizations and educational institutions to secure qualified and highly skilled craft labor. The project estimates creating approximately 15–20 permanent jobs and 1,500,000

hours of construction jobs. In addition to the PLA, the project is engaged and collaborating with the community to implement a robust Community Benefits Plans. The project plans to support 10 internships through Minority-Serving Institutions to create career pathways that can help ensure that the project's high-quality jobs are filled by a skilled workforce from historically underrepresented communities. During operations, the project has a 10 percent diverse supplier spend goal. Lawrence Livermore National Laboratory will support accountability and transparency and will monitor the implementation of the project's Community Benefits Plans.

Q. What is carbon capture, transport, and storage?

A. Carbon capture is a process that separates and captures carbon dioxide (CO₂) before it enters the atmosphere, from sources like power plants or heavy industrial facilities. The captured CO₂ is then safely transported and permanently stored deep underground in geologic formations.

Q. How is carbon capture, transport, and storage different from Direct Air Capture?

A. Carbon capture technologies capture CO₂ at the source before it enters the atmosphere. In other words, carbon capture and storage technologies help avoid emissions by preventing the release of CO₂ from power plants and industrial facilities. This is known as "point-source capture," since the CO₂ is captured at the source before it can be emitted.

Direct Air Capture (DAC) is not a form of point-source capture. Rather than avoiding future CO₂ emissions, DAC technologies address the carbon pollution that already exists in our atmosphere.

Q. Why is DOE investing in carbon capture, transport, and storage?

A: Large-scale deployment of carbon management technologies is critical to addressing the climate crisis and achieving net-zero carbon emissions by 2050. Reaching our nation's energy transition goals will require capturing and storing [400 to 1,800 million metric tons of carbon dioxide annually by 2050](#).

The Carbon Capture Demonstrations Program received \$2.5 billion from the Bipartisan Infrastructure Law to demonstrate commercial-scale carbon capture technologies, transportation, and storage infrastructure. The three projects selected for award negotiations focus on technologies that can be deployed at other power-generating plants. Experience gained through successful execution of these demonstration projects can accelerate carbon capture technology deployment and achieve cost-effective reductions in CO₂ emissions from the power sector. This program builds on research and development on carbon capture and storage that DOE has supported for more than two decades.

Q. How many projects have been selected and how much funding is DOE providing?

A: DOE selected three projects for award negotiations, with anticipated federal award amounts as follows:

- Sutter Decarbonization Project: Up to \$270 million
- Project Tundra: Up to \$350 million
- Baytown Carbon Capture and Storage Project: Up to \$270 million

If the projects are awarded, DOE will provide up to 50% of the cost share.

Q. How were the Carbon Capture Demonstrations projects selected?

A: DOE solicited applications for the Carbon Capture Demonstration Projects Program with a Funding Opportunity Announcement (FOA) in February 2023, and conducted merit reviews of eligible project submissions in 2023. The merit review criteria included:

- Technical Merit and Site Suitability (25%)
- Technical Approach and Project Management Plan (15%)
- Applicant/Team Capabilities and Commitments (20%)
- Financial and Market Viability (20%)
- Community Benefits Plan (20%)

Internal and external reviewers that are subject matter experts in the evaluation criteria conducted rigorous reviews of eligible submissions. Ultimately, the Selection Official(s) considered the recommendations of the reviewers with respect to individual proposals, and also applied a portfolio approach to ensure the selected projects satisfied all of the statutory requirements.

Q: How is this related to the Carbon Capture Demonstration Projects Program Front-End Engineering Design (FEED) Studies?

A: Through the Bipartisan Infrastructure Law, Congress authorized more than \$2.5 billion for carbon capture demonstration projects. To date, OCED has released two Funding Opportunity Announcements (FOA) under the Carbon Capture Demonstration Projects Program:

- Carbon Capture Demonstration Projects, issued in February 2023 for up to \$1.7 billion. On December 1, 2023, OCED announced the three

demonstration projects selected for award negotiations. Read more about the CCS demonstration projects above.

- Carbon Capture Demonstration FEED Studies, issued in September 2022 for up to \$189 million. On May 5, 2023, OCED announced the nine FEED study projects selected for award negotiations. These FEED study projects will conduct early-stage engineering and design studies. FEED studies are a necessary step for future potential CCS demonstrations. [Learn more about the FEED studies.](#)

OCED plans to issue an additional funding opportunity for this program in the future.

Q. What are the anticipated benefits of the Carbon Capture Demonstrations?

A: DOE's funding for the Carbon Capture Demonstration projects will accelerate the commercialization of carbon management technologies critical for combatting the climate crisis, while also creating economic opportunities and reinforcing America's global competitiveness in the clean energy sector and leadership in carbon management. Experience gained through successful execution of these demonstration projects can help to accelerate safe and responsible carbon capture technology deployment and achieve cost-effective reductions in CO₂ emissions from the power sector.

These projects have the potential to create good-paying jobs and deliver public health benefits to communities. DOE is committed to ensuring that carbon management projects are designed, built, and operated safely and responsibly, in a way that reflects the best science and responds to the needs and inputs of local communities.

DOE's comprehensive Community Benefits Plan approach and phased project management approach will ensure the robust engagement of impacted communities throughout the lifecycle of

the project, maximize benefits for local communities, and help minimize and mitigate negative impacts.

Q. How does DOE plan to address risks associated with these projects?

A: Ensuring safe deployment and mitigating social, economic, technical, and environmental risks associated with carbon capture demonstration projects is of the utmost importance to DOE and central to our project management approach. DOE will work with the project selectees and the appropriate authorities to mitigate and address concerns proactively and continually throughout the duration of the project. Projects will be required to comply with the National Environmental Policy Act (NEPA) as well as other Federal environmental reviews, Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations for CO2 pipeline safety will be followed and projects will need to obtain permits for geologic storage through Environmental Protection Agency (EPA) Class VI injection wells. The Class VI program requires risk assessment before during and after injection of carbon dioxide. Projects will also follow state and local regulations. Funded projects must submit detailed risk assessments and risk management plans outlining potential risks and impacts, and how they will mitigate those impacts. They must also submit detailed Community Benefits Plans, including how the project performers will transparently communicate risks or potential negative impacts associated with the project to the community.

Q. How will communities where these projects are located be engaged?

A: OCED will engage in early, frequent, and meaningful engagement with communities that host the carbon capture demonstration

projects. Communities will have substantive opportunities to engage with both DOE and the projects—starting during the negotiation process and extending throughout the full life cycle of each project. Before projects are awarded, the Office of Clean Energy Demonstrations (OCED) will begin these engagements by [co-hosting virtual community briefings](#) with the selected project teams to engage and build relationships with local stakeholders. Additional engagement opportunities will be planned on a project-by-project basis. DOE may use information gained during these engagements to inform the negotiation process.

Projects that are successfully negotiated and awarded are required to implement their Community Benefits Plans, including engaging with community and labor groups; investing in America's workforce; advancing diversity, equity, inclusion, and accessibility; and supporting environmental justice. While each project is unique, all must pursue robust activities in these four areas. These plans are intended to evolve in response to community and worker input and will be assessed at each phase as part of DOE's go/no-go decision points.

Lastly, to ensure that federal investments are planned and executed in a responsible, equitable, and environmentally sound manner, OCED-funded projects must comply with applicable environmental and cultural legislation like the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). A major component of this work is to encourage early and meaningful engagement with Tribal entities, other federal and state agencies, and public stakeholders throughout the course of federal decision-making.

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