



## Carbon Capture Demonstration Projects Program — Baytown Carbon Capture and Storage Project

The Carbon Capture Demonstration Projects Program, managed by the U.S. Department of Energy's Office of Clean Energy Demonstrations (OCED), aims to advance integrated carbon capture, transport, and storage technologies and infrastructure that can be deployed at power plants and in hard-to-decarbonize heavy industries. OCED selected three projects to begin award negotiations for a total of up to \$890 million. In July 2024, OCED awarded the Baytown Carbon Capture and Storage Project \$12.5 million of federal funding (of the total federal cost share of up to \$270 million) to begin activities in Phase 1.



### Awardee Fact Sheet Carbon Capture Demonstrations Projects Program: Baytown Carbon Capture and Storage Project

#### Project at a Glance – Phase 1

- » **Total OCED Cost Share:** Up to \$270 million
- » **Phase 1 Total Project Amount:** \$25 million\*
- » **Phase 1 OCED Award Amount:** \$12.5 million\*\*
- » **Phase 1 Scope of Work:** Complete the Front-End Engineering and Design (FEED) study and continue workforce planning, project permitting, and other technical assessments
- » **Phase 1 Timeline:** 9 -12 months
- » **Recipient:** Calpine Texas CCUS Holdings, an indirect subsidiary of Calpine
- » **Project Location:** Baytown, TX
- » **Project Start Date:** July 2024

\* Represents the total project cost for the initial project phase.

\*\* Represents OCED's cost share for the initial project phase. Additional funding for this project is subject to future award negotiations at the end of each project phase.

## About This Project

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 CO<sub>2</sub> annually—equivalent to the annual emissions of nearly 450,000 gasoline-powered cars. The project plans to sequester the CO<sub>2</sub> 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.

During Phase 1 of the project, Calpine will complete an integrated Front-End Engineering and Design (FEED) study to determine the specifications for CO<sub>2</sub> capture, transport, and storage components. The project will also continue workforce planning, project permitting, and complete a National Environmental Policy Act (NEPA) review process. OCED will provide project management oversight of the Baytown CCS Project by evaluating the status and quality of implementation at each phase of the project. Through its phased approach to project management, OCED will review and evaluate the project's progress, including community benefits, which impact OCED's decision to continue to provide federal funding and allow a project to progress to the following phase.

# Baytown Carbon Capture and Storage Project

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### Project Site

Located in Baytown, TX, near southeast Houston on a 24-acre campus, the Baytown Energy Center consists of three combustion turbines with three heat recovery steam generators that produce 810 megawatts (MW) of base load electric power.

### Community Benefits Commitments

Community benefits commitments are a key component of the Baytown CCS Project, informed and developed in consultation with local communities. Community benefits aim to mitigate potential adverse impacts of this project and maximize local positive impact.

**The project's community benefit commitments that will begin in Phase 1 include:**

- Operating a Community Advisory Board (CAB) with membership representative of local impacted communities and underrepresented groups, including community-at-large seats.
- Creating a plan to engage with community stakeholders and developing a strategy and schedule for future engagement including prior identification of barriers to engagement (including language and transportation equity) and incorporate community feedback through either the formal Community Advisory Board or the community liaison's direct engagement with the project development team leads.
- Partnering with Minority-Serving Institutions to support equitable job access and workforce development, including the support of internships from Historically Black Colleges and Universities and Minority-Serving Institutions.
- Designing and beginning to implement strategies to increase pathways to employment for underrepresented workers, workers from disadvantaged communities, and local residents.

More details on the Baytown CCS Project's community benefits commitments can be found in the Community Benefits Commitments Fact Sheet, which we will update at the start of each project phase [Community Benefits Commitments Fact Sheet](#).



The Baytown Carbon Capture Project plans to use Shell's CANSOLV point-source technology to capture up to 2 million metric tons of CO<sub>2</sub> annually—equivalent to the annual emissions of nearly 450,000 gasoline-powered cars.

The U.S. Department of Energy established OCED to help scale the emerging technologies needed to tackle our most pressing climate challenges and achieve net-zero emissions by 2050. OCED's mission is to deliver clean energy demonstration projects at scale in partnership with the private sector to accelerate deployment, market adoption, and the equitable transition to a decarbonized energy system.



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### Carbon Capture Demonstration Projects Program Goals

Large-scale deployment of carbon management technologies is critical to addressing the climate crisis. Reaching our nation's climate goals will require capturing and sequestering 400 to 1,800 million tons of carbon dioxide annually by 2050. Commercial demonstration of advanced carbon capture technologies, integrated with reliable transportation and storage infrastructure, will be required for the widespread deployment of these carbon management technologies. The Carbon Capture Demonstrations Projects Program focuses on integrated carbon capture, transport, and storage technologies and infrastructure that can be readily replicated and deployed at power plants and major industrial sources of carbon emissions, such as cement, pulp and paper, iron, and steel.



The Baytown Energy Center consists of three combustion turbines with three heat recovery steam generators that produce 810 megawatts (MW) of base load electric power.

### Contact

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**Site-Specific Email:** [Baytown\\_CCS@hq.doe.gov](mailto:Baytown_CCS@hq.doe.gov)

### More Resources

**Carbon Capture Demonstrations Projects Program Website:** [energy.gov/oced/CCdemos](https://energy.gov/oced/CCdemos)

**Office of Clean Energy Demonstrations:** [energy.gov/oced](https://energy.gov/oced)

**Office of Clean Energy Demonstrations:** [energy.gov/fecm/interactive-diagram-carbonmanagement-provisions](https://energy.gov/fecm/interactive-diagram-carbonmanagement-provisions)

**More information about Calpine:** [calpinecapture.com](https://calpinecapture.com)