



# THE OFFICE OF CLEAN ENERGY DEMONSTRATIONS



## Carbon Capture Large-Scale Pilot Projects National Briefing on Project Selections

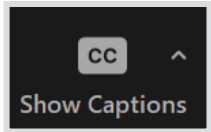
February 6, 2024

Office of Clean Energy Demonstrations

U.S. Department of Energy

# Webinar Logistics

## How do I turn on live captions?

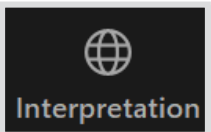


Click on the “**Show Captions**” button in the control panel at the bottom of your screen.

## Is this webinar being recorded?

**Yes, this webinar is being recorded** and will be available on the DOE YouTube channel and the OCED website within the next week.

## How do I turn on Spanish or ASL interpretation?



Click on the “**Interpretation**” button in the control panel at the bottom of your screen.

## Will the slides be shared?

**Yes, a copy of the presentation slides will be shared** via email with registrants and on the OCED website within the next week.



# Agenda

- Welcome & Opening Remarks
- Carbon Capture Large-Scale Pilot Projects Program Overview
- Selected Carbon Capture Large-Scale Pilot Projects Overview
- Next Steps & Resources





# Opening Remarks



# Carbon Capture Large-Scale Pilot Projects

# How Does Carbon Capture and Storage (CCS) Work?

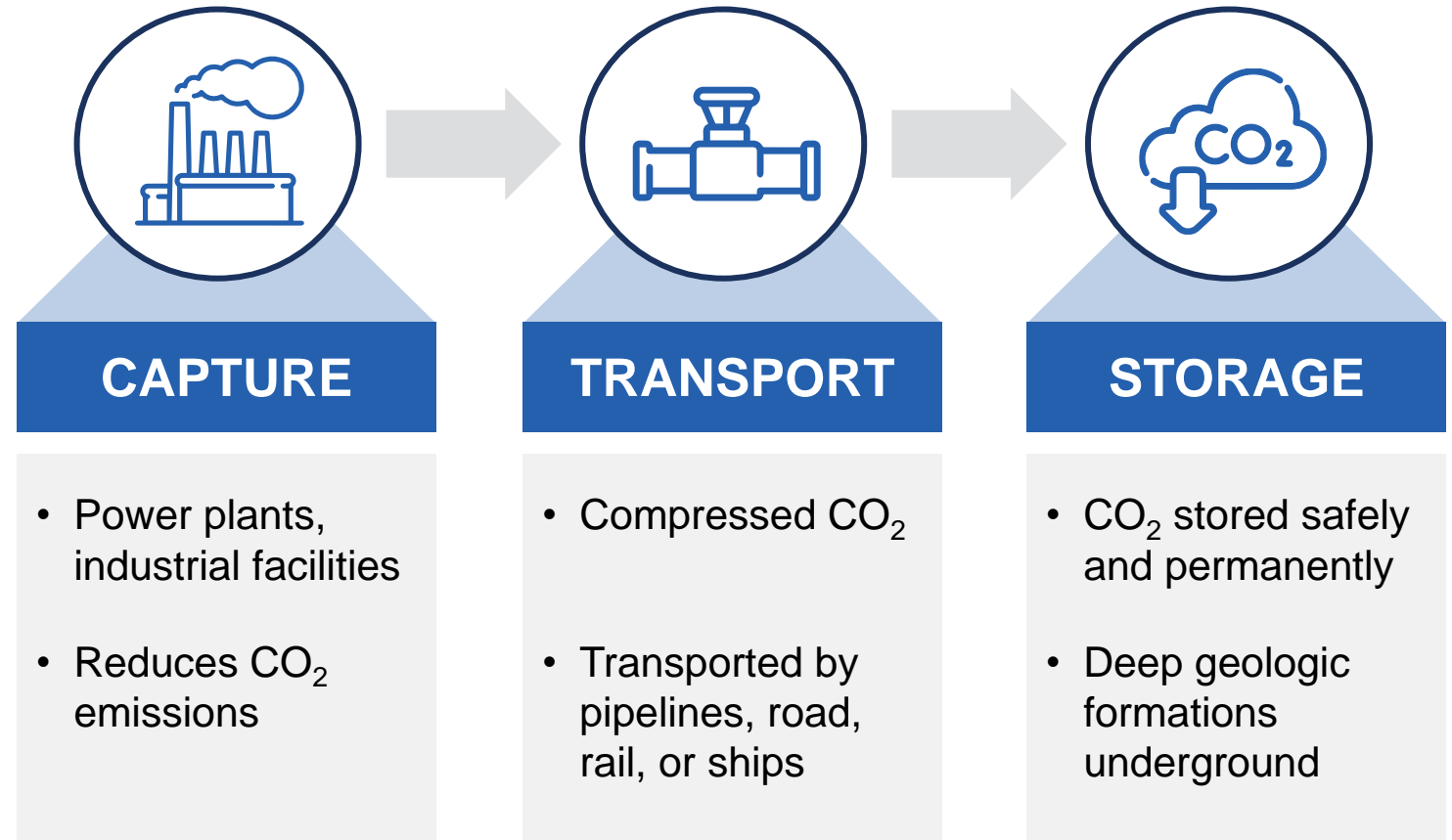
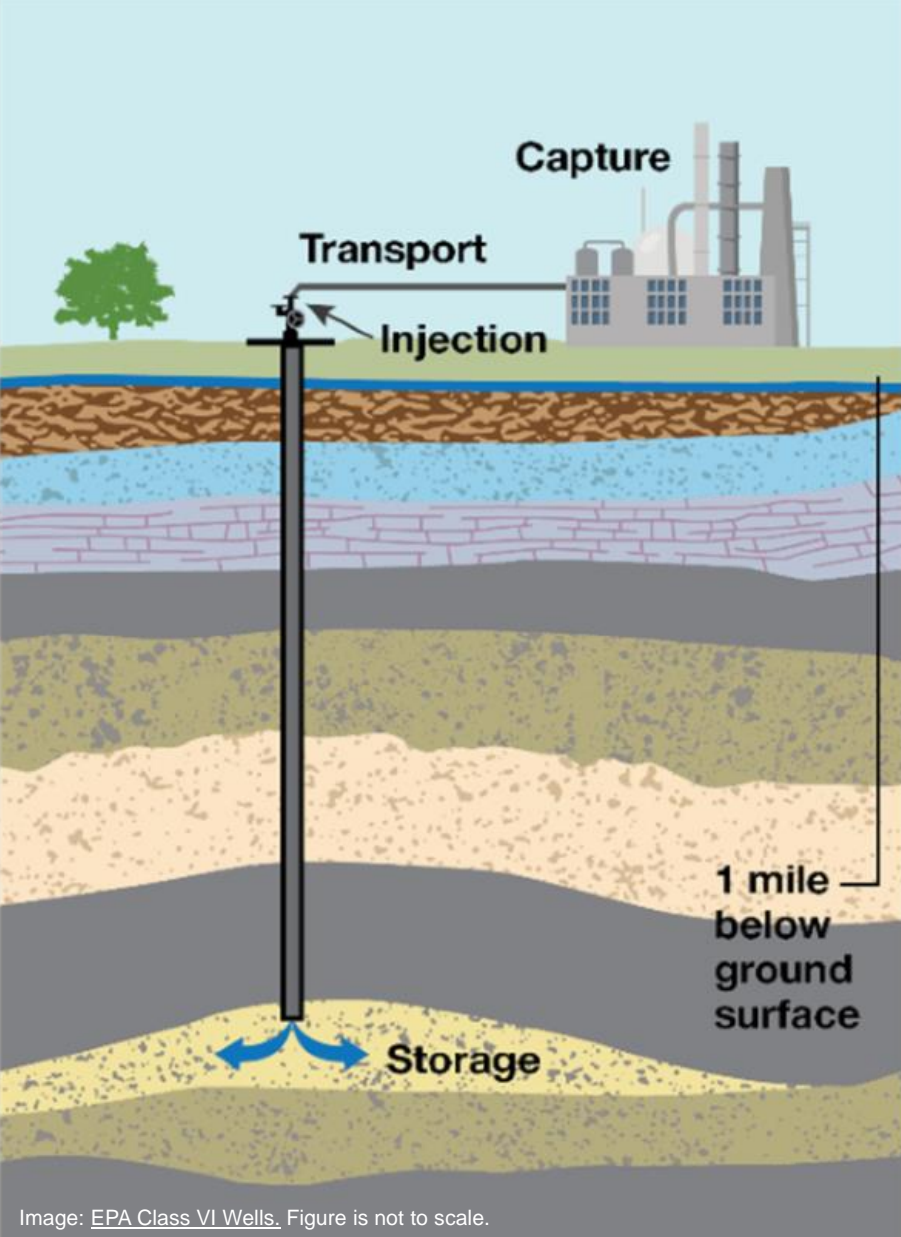
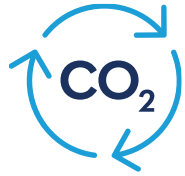


Image: [EPA Class VI Wells](#). Figure is not to scale.

# Deploying CCS Technology has the Potential to...



**Reduce harmful carbon pollution** by preventing carbon dioxide emissions from entering the atmosphere.



**Demonstrate technology leadership** and increase U.S. competitiveness in the global energy transition.



**Deliver cleaner air** by reducing health-harming pollutants, like SO<sub>2</sub>, NOx, and particulate matter.



**Maintain good, high-wage jobs** while advancing the clean energy economy.



**Decarbonize existing infrastructure** and assets in the power and industrial sectors.



**Support our nation's net-zero goals** and help the world decarbonize at existing facilities.





## Carbon Capture Large-Scale Pilot Projects Program

**Establish and test innovative carbon capture pilot projects large enough to support new processes and technology improvements at scale.**

### **Carbon Capture Pilots Current Status**

- February 2023: Announced funding opportunity for Carbon Capture Large-Scale Pilot Projects.
- May 2023: Responded to concept papers.
- July 2023: Received full applications.
- **February 2, 2024: OCED announced four projects selected for award negotiation.**
- DOE is considering another FOA for more Carbon Capture Large-Scale Pilot Projects.



# Prioritizing Community Benefits in OCED Projects

OCED **requires** applicants to include a Community Benefits Plan to help ensure broadly shared prosperity in the clean energy transition.

By **prioritizing community benefits**, we can ensure the next chapter in America's energy story is marked by greater justice, equity, security, and resilience.

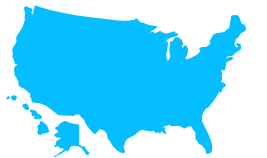
Community & Labor Engagement



Diversity, Equity, Inclusion, & Accessibility



Investing in the American Workforce



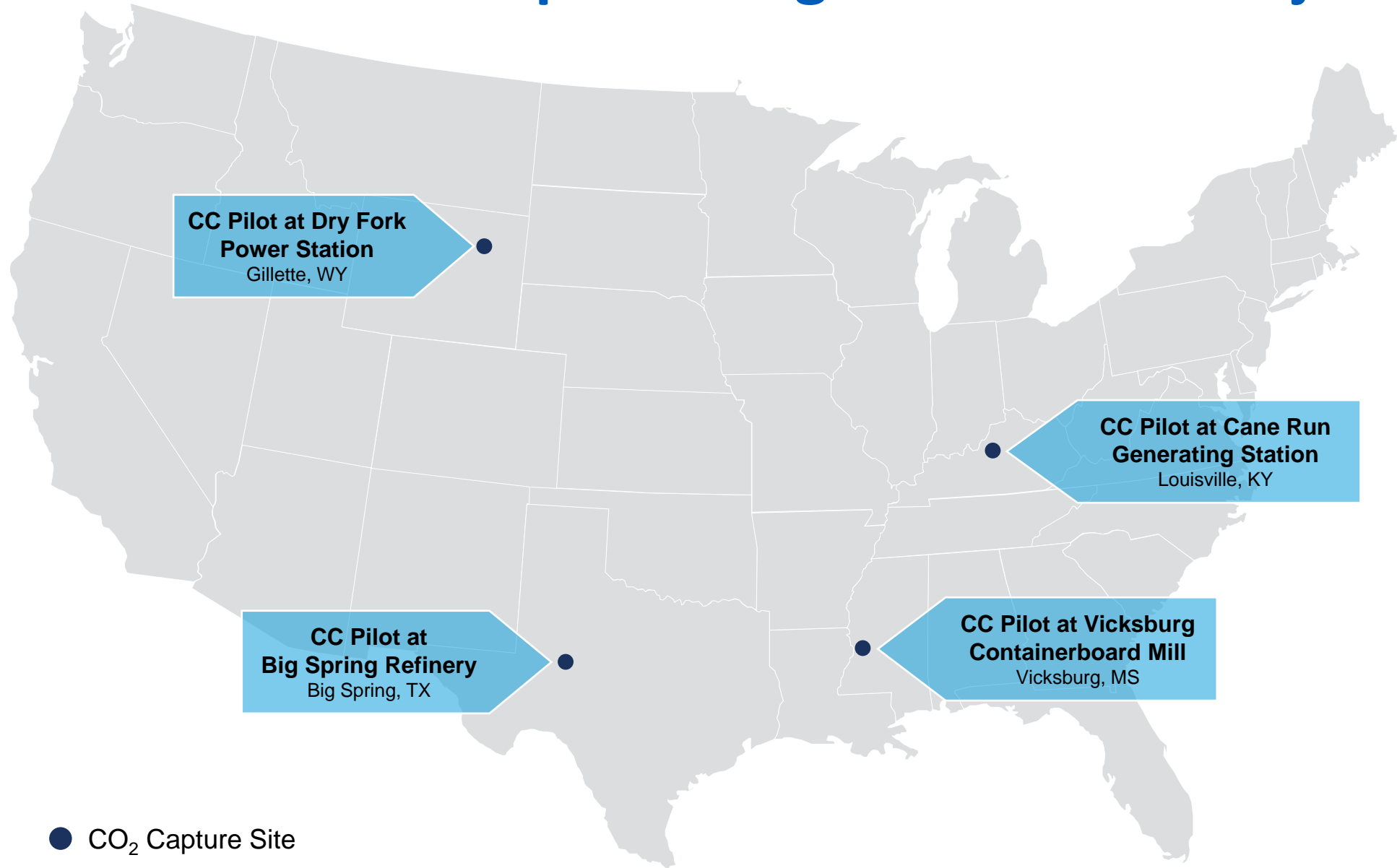
Justice40 Initiative





# Carbon Capture Large-Scale Pilot Projects Selected for Negotiations

# Selected Carbon Capture Large-Scale Pilot Projects



# Four Selected Carbon Capture Pilot Projects Will...

## Reduce CO<sub>2</sub> Emissions

- ✓ More than 500,000 metric tons of CO<sub>2</sub> will be captured annually
- ✓ Equivalent to annual CO<sub>2</sub> emissions for more than 110,000 gasoline-powered cars

## Demonstrate innovation with first-of-a-kind projects

- ✓ 1<sup>st</sup> large-scale CC pilot at a pulp and paper mill in the U.S.
- ✓ 1<sup>st</sup> CC pilot at an oil refinery's Fluid Catalytic Cracking Unit for DOE
- ✓ Novel technologies integrated with flue gas systems to capture CO<sub>2</sub>

## Provide tangible benefits for Americans

- ✓ Create hundreds of construction jobs and dozens of operations jobs
- ✓ Develop workforce training programs in partnership with HBCUs and Minority-Serving Institutions

# Carbon Capture Pilot at Cane Run Generating Station

## Project Overview

Prime Applicant:  
**PPL Corporation**

Location:  
**Louisville, Kentucky**

Federal Cost Share:  
**Up to \$72 Million\***

\*Pending negotiations

## Key Facts

- Natural gas combined-cycle power plant
- **Up to 90,000 metric tons of CO<sub>2</sub> annually**
- Solvent-agnostic process



## Community Benefits

- History of partnership with local community
- Employs workers from the International Brotherhood of Electric Workers and United Steelworkers
- Expand existing training and internship programs
- Develop a workforce development plan in partnership with local colleges and universities, including an HBCU
- Estimate creating approx. 40-100 construction jobs





# Carbon Capture Pilot at Dry Fork Power Station

## Project Overview

Prime Applicant:  
**TDA Research**

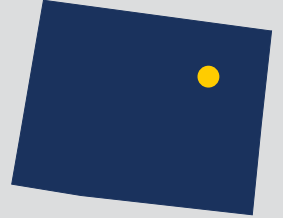
Location:  
**Gillette, Wyoming**

Federal Cost Share:  
**Up to \$49 Million\***

\*Pending negotiations

## Key Facts

- Coal-fired power plant
- **158,000 metric tons of CO<sub>2</sub> annually**
- Adsorption process



## Community Benefits

- Community engagement through listening sessions, town hall meetings, and open houses
- Committed to hiring four underrepresented interns during each project phase, prioritizing tribal members and students from Minority Serving Institutions
- Expects to create approx. 40-60 construction jobs and 20-25 operations jobs



# Carbon Capture Pilot at Vicksburg Containerboard Mill

## Project Overview

Prime Applicant:  
**RTI International**

Location:  
**Vicksburg, Mississippi**

Federal Cost Share:  
**Up to \$88 Million\***

\*Pending negotiations

## Key Facts

- Pulp & paper mill
- **120,000 metric tons of CO<sub>2</sub> annually**
- Non-aqueous solvent technology



## Community Benefits

- Establish a Community Advisory Council
- Existing collective bargaining agreements with several labor unions, including United Steelworkers, the International Brotherhood of Electric Workers, and the United Association.
- Expected to create approx. 90 construction jobs



# Carbon Capture Pilot at Big Spring Refinery

## Project Overview

Prime Applicant:  
**Delek US Holdings**

Location:  
**Big Spring, Texas**

Federal Cost Share:  
**Up to \$95 Million\***

\*Pending negotiations

## Key Facts

- Oil refinery
- **145,000 metric tons of CO<sub>2</sub> annually**
- Fluidized Catalytic Cracking Unit (FCCU)



## Community Benefits

- Create a Community Advisory Committee
- Existing collective bargaining agreement with the International Union of Operating Engineers, plans to partner with unions to create workforce and community agreements
- Establish a Carbon Capture Schoolhouse to train organized labor and expand skilled workforce
- Expected to create up to 200 construction jobs and six operations jobs





# Next Steps & Resources

## Next Steps – Negotiations

**Award Negotiations:** DOE OCED will begin the negotiations process with project selectees

**After Award: *IF the projects receive an award (successful negotiations)***

- Awarded projects will enter into a cooperative agreement with OCED
- Phase 1: Detailed Project Planning begins
- NEPA: OCED will work with the awarded project partners starting in Phase 1 to ensure compliance with the National Environmental Policy Act (NEPA)
- Local communities (state, local and community stakeholders) will have the opportunity for ongoing engagement with OCED and the awardee(s)

More broadly, DOE is exploring the use of regional frameworks to support project outcomes.



# Get Involved

How could this project impact me?

Learn more about OCED's  
Community Benefits Plan  
Framework →

Is there a CC Pilots  
project near me?

Learn more about the  
selected projects here →

Project  
selected



WE ARE HERE

What is a CC Pilot?

Learn more →

**Announcement and Negotiations**  
Projects have been selected, but awards  
have not been made

Project  
awarded



NEPA engagement  
during phase 2 →

1

~18 months

Ongoing community  
engagement throughout  
each phase

When are the CC Pilots  
project-specific briefings?

Learn more and  
register here →

2

Up to 12  
months

Phase 1: Project Planning  
Community Benefit Commitments Public

3

Up to 24  
months

Phase 2: Project Development  
Community Benefit Commitments Public

4

Up to 24  
months

Phase 3: Install, Integrate, Construct  
Community Benefit Commitments Public

Phase 4: Ramp-Up & Operate

Community Benefit Commitments Public

How do I stay informed?

Sign up for updates →

Learn more about project phases →



**OCED**  
Office of Clean Energy Demonstrations



Community Benefit Commitments Public



Go/No-Go Decisions

# Next Steps – Community Briefings

Learn more and  
register: [Local  
Engagement  
Opportunities](#)

OCED will hold four virtual project-specific briefings where selectees will share more information with the communities hosting Carbon Capture Pilot Projects.

**CC Pilot at Cane Run Generating Station – Kentucky**  
**Wednesday, February 21, 2024**

**CC Pilot at Dry Fork Station – Wyoming**  
**Thursday, February 22, 2024**

**CC Pilot at Vicksburg Containerboard Mill – Mississippi**  
**Wednesday, February 28, 2024**

**CC Pilot at Big Spring Refinery – Texas**  
**Tuesday, March 5, 2024**

\*Subject to change based on negotiations. Negotiations may take several months.



## Stay Connected

- Reach DOE OCED about these Carbon Capture Large-Scale Pilot Projects at [Engage\\_CCS@hq.doe.gov](mailto:Engage_CCS@hq.doe.gov)

- OCED Website & Newsletter  
[energy.gov/oced](https://energy.gov/oced)

*Scroll to the bottom to subscribe:*

### Sign Up for OCED News & Alerts

Subscribe and stay up-to-date on all upcoming funding opportunities, news announcements, upcoming events, and more.

- OCED Exchange (RFIs, NOIs, and FOAs)  
[oced-exchange.energy.gov](https://oced-exchange.energy.gov)
- Follow us on LinkedIn  
[linkedin.com/company/doe-oced/](https://linkedin.com/company/doe-oced/)

# Carbon Capture Large-Scale Pilot Projects Resources

## Carbon Capture Large-Scale Pilot Projects Program

- [Program Page](#)
- [Press Release](#)
- [Overview of Selected Projects](#)
- [Local Engagement Opportunities](#)

## Community Benefits

- [CBP101 Webinar](#)
- [OCED CBP Factsheet](#)
- [OCED Communities, Jobs, and Justice Page](#)

## Additional Carbon Capture Resources

- [Carbon Management Pathways to Commercial Liftoff Report](#)
- [Industrial Decarbonization Pathways to Commercial Liftoff Reports](#)
- [Interactive Diagram of DOE's Carbon Management Provisions](#)



# Thank you!



**OCED**  
Office of Clean Energy Demonstrations

For more information, please visit: [energy.gov/OCED](https://energy.gov/OCED)