



OCED
Office of Clean Energy Demonstrations

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

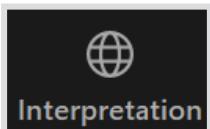
Webinar Logistics

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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.

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?

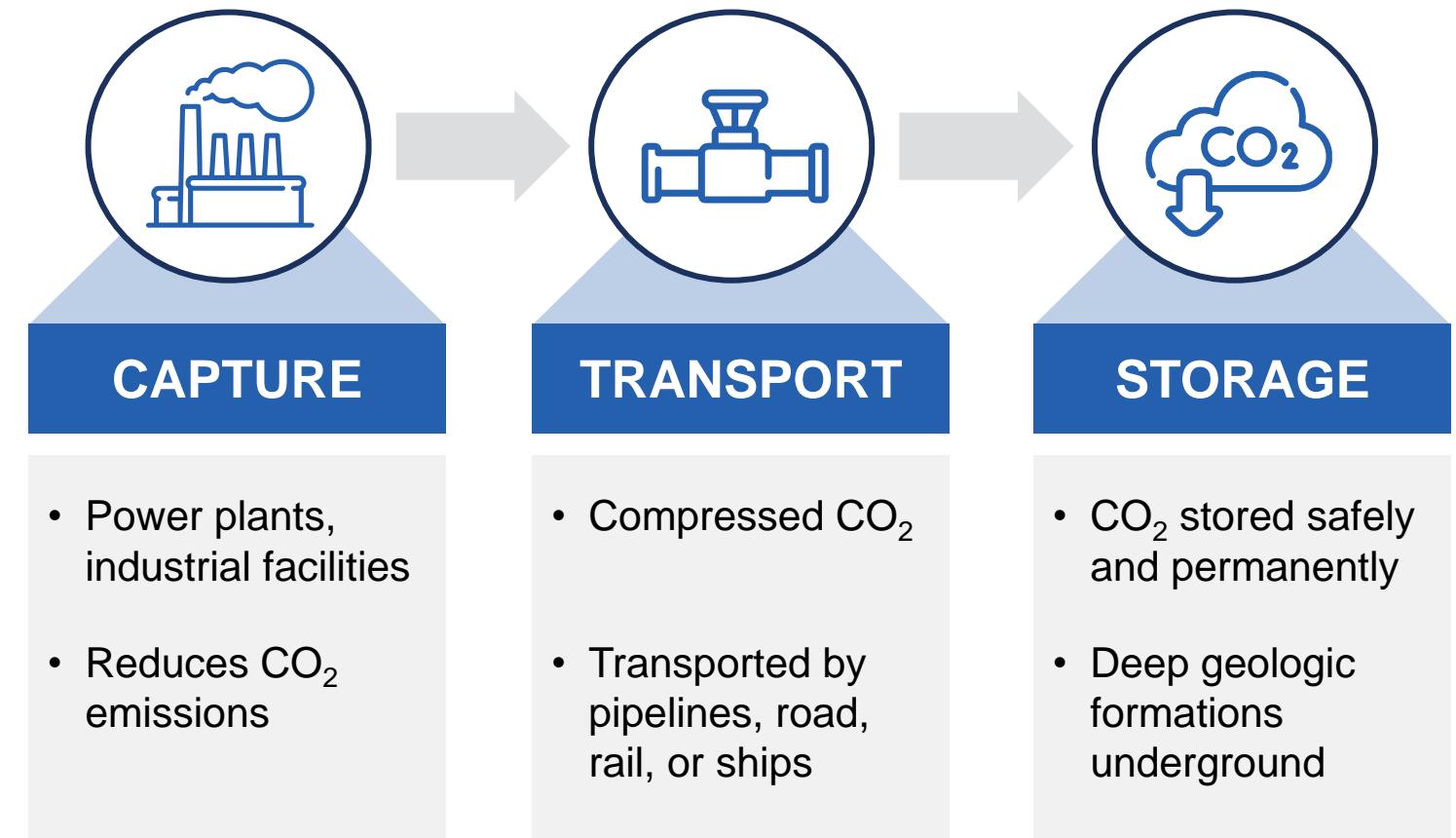
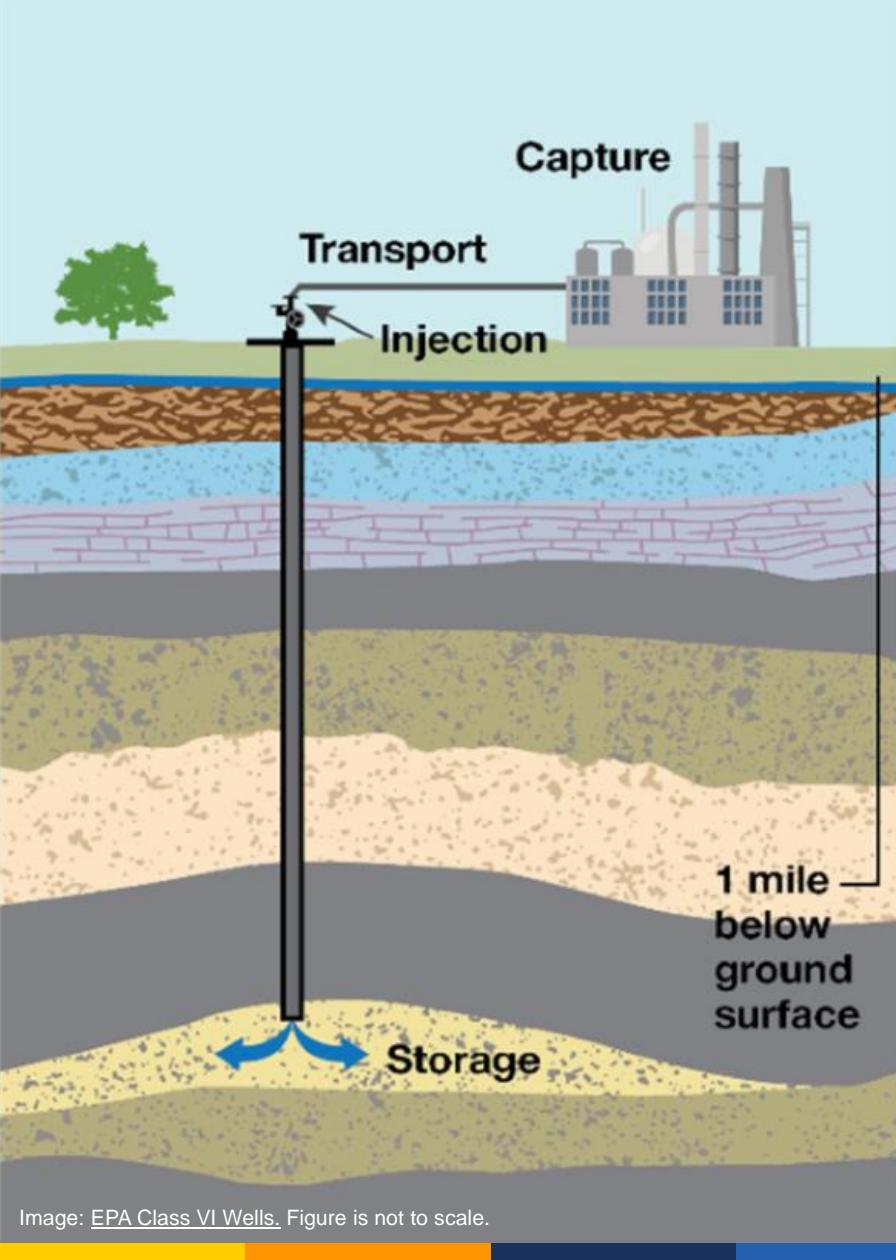
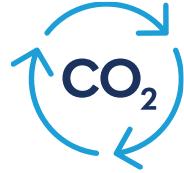


Image: [EPA Class VI Wells](#). Figure is not to scale.



Deploying CCS Technology has the Potential to...



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



Deliver cleaner air by reducing health-harming pollutants, like SO₂, NOx, and particulate matter.



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



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



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



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



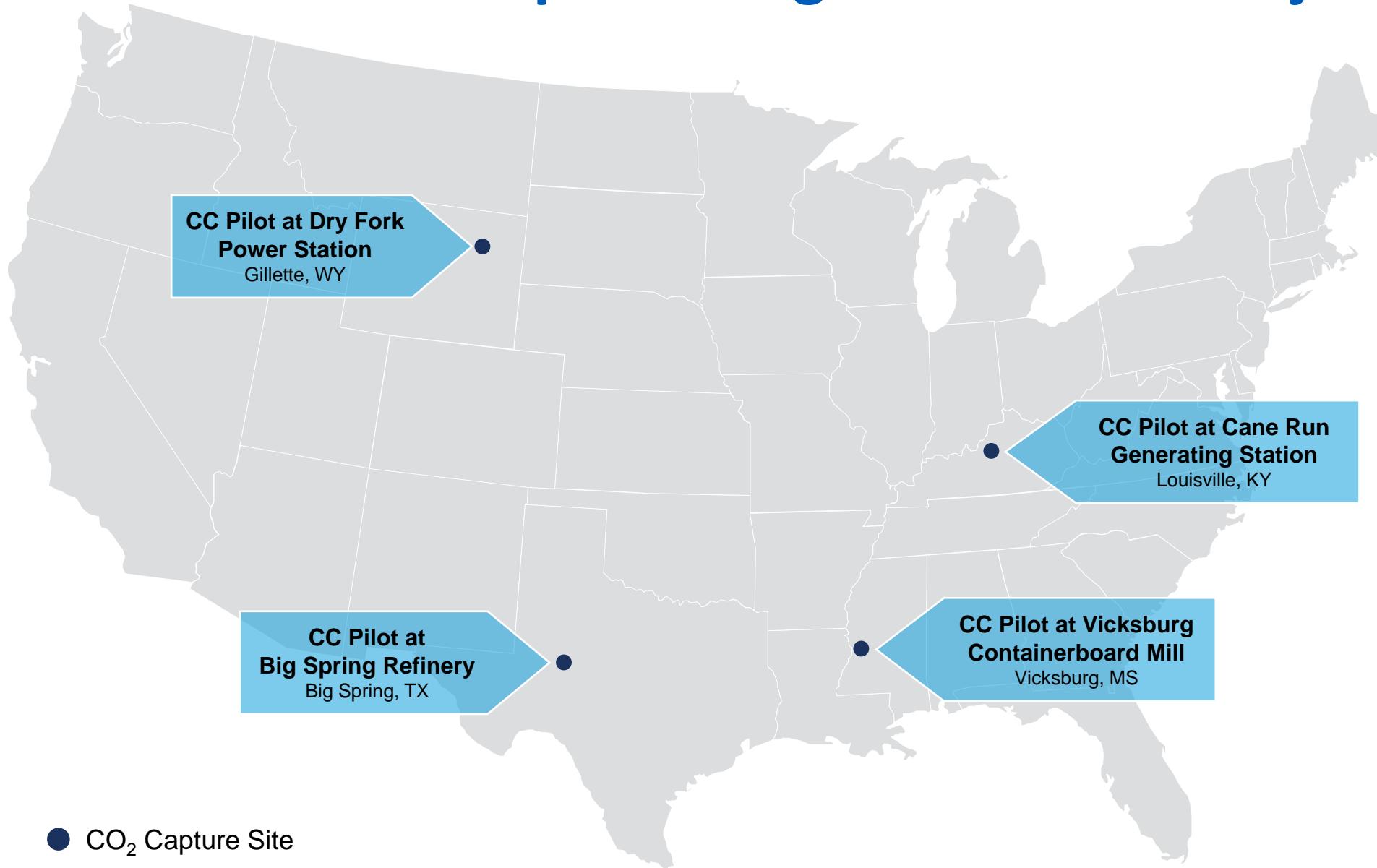
Justice40 Initiative



Carbon Capture Large-Scale Pilot Projects Selected for Negotiations



Selected Carbon Capture Large-Scale Pilot Projects



Four Selected Carbon Capture Pilot Projects Will...

Reduce CO₂ Emissions

- ✓ More than 500,000 metric tons of CO₂ will be captured annually
- ✓ Equivalent to annual CO₂ emissions for more than 110,000 gasoline-powered cars

Demonstrate innovation with first-of-a-kind projects

- ✓ 1st large-scale CC pilot at a pulp and paper mill in the U.S.
- ✓ 1st CC pilot at an oil refinery's Fluid Catalytic Cracking Unit for DOE
- ✓ Novel technologies integrated with flue gas systems to capture CO₂

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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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?

Is there a CC Pilots project near me?

Learn more about the selected projects here

Project selected



WE ARE HERE

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

What is a CC Pilot?

Learn more



Project awarded

NEPA engagement during phase 2



2

Up to 12 months

~18 months

Up to 24 months

Up to 24 months

Up to 24 months

Up to 24 months

4

Phase 4: Ramp-Up & Operate

Community Benefit Commitments Public



Phase 3: Install, Integrate, Construct

Community Benefit Commitments Public



Phase 2: Project Development

Community Benefit Commitments Public



Phase 1: Project Planning

Community Benefit Commitments Public



Ongoing community engagement throughout each phase

Learn more about project phases



When are the CC Pilots project-specific briefings?

Learn more and register here

How do I stay informed?

Sign up for updates



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

- OCED Website & Newsletter energy.gov/oced

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- OCED Exchange (RFIs, NOIs, and FOAs) oced-exchange.energy.gov
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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!



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For more information, please visit: energy.gov/OCED