



BLOG

OCED Selects Four Projects in KY, MS, TX, and WY to Advance Technologies to Reduce Harmful Carbon Dioxide Emissions

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[Office of Clean Energy Demonstrations](#)

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 7 min

WASHINGTON, D.C. — The U.S. Department of Energy (DOE) Office of Clean Energy Demonstrations (OCED) today announced up to \$304 million in funding for four projects to pilot transformational technologies designed to capture carbon dioxide (CO₂) emissions that would otherwise accelerate climate change and jeopardize public health. Funded by the Bipartisan Infrastructure

Law, these large-scale pilot projects—located at power and industrial sites in Kentucky, Mississippi, Texas, and Wyoming—have the potential to prevent more than 500,000 metric tons of CO₂ emissions from being released into the atmosphere each year—an amount equivalent to the combined annual emissions of more than 110,000 gasoline-powered cars. The Biden-Harris Administration is committed to ensuring that carbon management projects are designed, built, and operated safely and responsibly, and in a way that reflects the best science and responds to the needs and inputs of local communities. As part of the Administration’s commitment to advance environmental and energy justice in partnership with communities, the projects receiving awards will be required to implement a comprehensive Community Benefits Plan—which will be informed by early and meaningful community and labor engagement.

The power and industrial sectors account for roughly half of U.S. carbon emissions. The projects announced today are part of the [Carbon Capture Large-Scale Pilot Projects Program](#), which supports projects that implement carbon capture technologies at the pilot scale across the power and industrial sectors. The selected projects are designed to pilot transformational carbon capture technologies and catalyze significant follow-on investments for commercial-scale demonstrations on carbon emission sources, helping to reduce emissions, combat the climate crisis, and support meeting the Biden-Harris Administration’s goal of a net-zero emissions economy by 2050.

Projects selected for award negotiation include:

- **Carbon Capture Pilot at Cane Run Generating Station: Louisville, Kentucky** – This pilot project, led by PPL Corporation, will deploy a carbon capture system at subsidiaries Louisville Gas and Electric and Kentucky Utility companies’ Cane Run Generating Station, a natural gas combined-cycle power plant. The Carbon Capture Pilot at Cane Run Unit 7 uses an advanced heat-integrated CO₂ capture technology developed by the University of Kentucky. The project team plans to partner with an off-taker who will purify the captured CO₂ for use as beverage-grade CO₂. The goal of the project is to pilot the carbon capture technology and enable its replication at other natural gas combined-cycle power plants. The project will expand existing training and internship programs to create a project workforce development plan that involves collaborating with local community leaders and organizations and partnering with local colleges and universities, including a local Historically Black College and University,

for implementation. The project team has existing collective bargaining agreements with several labor unions, including United Steelworkers.

- **Carbon Capture Pilot at Vicksburg Containerboard Mill: Vicksburg, Mississippi** – This pilot project plans to build a carbon capture system at International Paper's (IP) pulp and paper mill. This first-of-its-kind carbon capture project for the pulp and paper industry, led by RTI International in collaboration with IP, SLB, and Amazon, aims to capture 120,000 metric tons of CO₂ per year and transport it to a site for permanent geologic storage. The main goal of this pilot project is to illustrate effective use of the technology, helping drive its adoption in the pulp and paper industry and to demonstrate how strategic partnerships can accelerate decarbonization. The project team has existing collective bargaining agreements with several labor unions, including United Steelworkers (which includes Paper and Forestry, Rubber, Manufacturing, Energy), Allied Industrial Services Workers International Union, United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry, and the International Brotherhood of Electrical Workers.
- **Carbon Capture Pilot at Big Spring Refinery: Big Spring, Texas** – This pilot project plans to deploy an innovative post-combustion carbon capture process at Delek's Big Spring Refinery Fluidized Catalytic Cracking Unit and transport the CO₂ via existing pipelines for permanent storage or utilization. The project is also expected to decrease emissions of health-harming pollutants, including SO_x and particulate matter. The goal of this project is to help scale-up the carbon capture technology and achieve cost reductions to facilitate replication at other oil refineries and industrial facilities. The majority of Delek personnel at the Big Spring Refinery are employed through an existing collective bargaining agreement with the International Union of Operating Engineers (IUOE). Delek plans to partner with the unions to create workforce and community agreements as part of this pilot project. The project team will also work with community partners, including United Steelworkers and the IUOE, to establish a Carbon Capture Schoolhouse to train organized labor and expand the community's skilled workforce.
- **Carbon Capture Pilot at Dry Fork Power Station: Gillette, Wyoming** – This pilot project will deploy a carbon capture system at the Wyoming Integrated Test Center located adjacent to Basin Electric's Dry Fork Power Station, a coal-fired power plant. The project is ideally placed in close proximity to a storage site in the carbon capture hub being developed through the DOE-funded [Wyoming CarbonSAFE project](#)^{ca}. Ultimately, this

requires only a short pipeline to transport the captured CO2 to permanent storage. The goal of this pilot project is to inform future commercial deployment of the carbon capture technology, which could be scaled up for use at coal plants around the world. The project team will engage with the local community and labor unions, through listening sessions, town hall meetings, and open houses to ensure the local community benefits from the construction and operation of the pilot project and local input is incorporated. Additionally, the project team plans to deliver seminars to provide educational information for students at local colleges and universities to learn more about carbon capture technology.

Learn more about the four projects selected for award negotiations [here](#).

On February 6, 2024, DOE will host a national briefing to share more information about the selected projects. In February and March 2024, DOE and the selected project teams will co-host virtual community briefings to engage with local stakeholders in each location, which build on the local engagement conducted by the selectees during their application development. Learn more about the national and community briefings and register [here](#).

Selection for award negotiations is not a commitment by DOE to issue an award or provide funding. Before funding is issued, DOE and the applicants will undergo a negotiation process, and DOE may cancel negotiations and rescind the selection for any reason during that time. Lead applicants also may change during the award negotiations process. If awarded, OCED will evaluate these projects through a [phased approach to project management](#) that includes “go/no-go” decision points between each project phase where DOE reviews and evaluates the key elements of the project, including community benefit commitments, and assesses how well they are being implemented.

Delivering Public Health and Economic Benefits to Communities Across America

In addition to reducing harmful carbon emissions, carbon capture technologies have the potential to deliver significant public health benefits to communities across the country and help revitalize local economies as the nation pursues an equitable and just energy transition in partnership with these communities. Funding applicants were required to submit a Community Benefits Plan. These plans, which must be implemented if projects are ultimately awarded, will support community and workforce engagement; invest in the American workforce; advance energy and environmental justice; promote

diversity, equity, inclusion, and accessibility; and deliver benefits to disadvantaged communities.

To ensure the successful implementation of Community Benefits Plans, DOE intends to strengthen community capacity across the U.S. through a DOE-led initiative supporting collaborative regional consortia across the U.S., bringing together public, private, academic, and philanthropic partners to enhance community collaboration and leverage DOE funding to maximize benefits delivered to communities.

DOE's Efforts to Advance Innovative Climate Technologies

DOE has supported research on carbon capture and storage for more than two decades, helping decarbonize the global economy to meet our climate goals. New carbon capture technologies are emerging, and the next step is developing them at larger scales to help illustrate their effective deployment as safe and responsible climate technologies, and to attract the capital necessary for commercialization. DOE follows [guidance](#) from the White House Council on Environmental Quality to ensure that the advancement of carbon capture, utilization, and sequestration technologies are done in a responsible manner that incorporates the input of communities and reflects the best available science.

OCED manages the [Carbon Capture Large-Scale Pilot Projects Program](#) and is charged with accelerating deployment of carbon capture technologies by piloting these transformational technologies at scale and catalyzing private sector investment through public-private cost share agreements. OCED plans to issue an additional funding opportunity for this program in the future.

Visit the [OCED](#) and [Office of Fossil Energy and Carbon Management](#) websites for more information on how DOE is working to expand the commercial impact of its research investments to accelerate the safe and responsible deployment of carbon management technologies and support the Biden-Harris Administration's efforts to ensure an equitable and just transition to an American-led clean energy future.

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