U.S. DEPARTMENT OF ENERGY

Office of Clean Energy Demonstrations

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Office of Clean Energy Demonstrations (OCED)

- The Bipartisan Infrastructure Law (BIL) more than triples DOE's annual funding for energy programs, including significantly expanded research and development (R&D) and entirely new demonstration and deployment missions

- DOE announced the establishment of OCED in December 2021 to deliver $21.5 billion provided by the BIL to support large-scale clean energy demonstration projects

- OCED will build on DOE's long-standing position as the premier international driver for clean energy research and development, expanding DOE's scope to fill a critical innovation gap on the path to carbon-free electricity in the U.S. by 2035 and a net-zero economy by 2050

- OCED will help bridge the gap between research and development to validate technologies in real-world conditions and provide confidence that the technology works as intended

OCED Mission and Key Tenets

- **Mission:**
  - Deliver clean energy demonstration projects at scale in partnership with the private sector to launch or accelerate market adoption and deployment of technologies
  - Support the equitable transition to carbon-free electricity by 2035 and a net-zero economy by 2050

- **Key Tenets of Federally-Supported Demonstration Projects:**
  - Are a pathway to technical and commercial risk reduction and learning to make projects commercially viable by addressing technology challenges and driving down cost curves
  - Must target relevant operational environments, scales, and timeframes to validate the performance, cost, and value
  - Should enable downstream market adoption and deployment to accelerate scale-up leading to greenhouse gas reductions, job creation, and achieving environmental justice priorities
  - Involve substantial risk and the known and unknown risks factors will impact project outcomes

Scope of OCED in the Bipartisan Infrastructure Law

- Carbon Capture Demonstrations ($2.5 billion)
- Carbon Capture Large-Scale Pilot Projects ($937 million)
- Industrial Emissions Demonstrations ($500 million)
- Energy Improvement in Rural and Remote Areas ($1 billion)
- Clean Energy Demonstrations on Mine Lands ($500 million)
- Energy Storage Demonstration and Pilot Grants ($355 million)
- Long Duration Demonstration Initiative and Joint Program ($150 million)
- Upgrading Grids Demonstrations ($5 billion)
- Regional Hydrogen Hubs ($8 billion)
- Advanced Reactor Demonstrations ($2.5 billion)

Carbon Capture Demonstrations ($2.5 billion)

- **Description:** To establish a carbon capture technology program for the development of six facilities to demonstrate transformational technologies that will significantly improve the efficiency, effectiveness, costs, emissions reductions, and environmental performance of coal and natural gas use, including in manufacturing and industrial facilities. Of the demonstration projects carried out, two shall be designed to capture carbon dioxide from a natural gas electric generation facility, two shall be designed to capture carbon dioxide from a coal electric generation facility, and two shall be designed to capture carbon dioxide from an industrial facility not purposed for electric generation.

- **Timeline of Next Steps:** No statutory deadline. Reviewing responses to the carbon management RFI and conducting stakeholder engagement.

- **Intended Focus:** Diversification of technologies and applications, coupled with geologic storage of carbon dioxide.

Carbon Capture Large-Scale Pilot Projects ($937 million)

- **Description:** To establish a carbon capture technology program for the development of transformational technologies that will significantly improve the efficiency, effectiveness, costs, emissions reductions, and environmental performance of coal and natural gas use, including in manufacturing and industrial facilities. Pilots will be large enough to validate scaling factors and demonstrate the interaction between major project components to enable advancement from pilot to commercial-scale demonstrations.

- **Timeline of Next Steps:** No statutory deadline. Reviewing responses to the carbon management RFI and conducting stakeholder engagement.

- **Intended Focus:** Testing of transformational carbon capture technologies to validate performance and costs.

OCED Priorities and Key Focus Areas

- Conducting stakeholder outreach to ensure we are using the BIL funding to buy down risks to market adoption to achieve our long-term goals
- Identifying options for maximizing impact -- jobs, Justice benefits, and greenhouse gas reductions
- Ensuring appropriate front end planning to account for lessons learned from prior demonstration projects
- Creating a center of excellence for demonstration project management oversight in DOE