

Carbon Capture, Utilization, and Storage Recommendations

Carbon capture technologies enable power plants and other industrial sources to capture carbon dioxide (CO₂) emissions, transport them, and either utilize them with emissions reductions impact or store them underground permanently. While carbon capture technologies have been demonstrated at a commercial scale, the at-scale deployment of carbon capture in the power sector has been slow. Current market conditions and less robust federal and state policy support relative to other low- and zero-carbon technologies do not support the incremental cost of installing carbon capture technology at a new or existing power plant.

Federal policy should focus on activities that will bring down the cost of capture and enable the development and deployment of first-of-a-kind (FOAK) through next-of-a-kind (NOAK) commercial-scale projects involving various innovative capture technologies, including through key investments in infrastructure that will support carbon capture and storage. Additionally, the federal government should maintain and improve economic incentives that will support the long-term deployment of many commercial-scale projects and also should continue to invest in research and development.

FY22 (Authorized Funding Levels and Programs)	FY22 (Recommended Funding Levels for Current and New Program Authorizations)	FY22-25 (Cumulative Recommended Funding Levels for Current and New Program Authorizations)
\$1,205,000,000	\$4,995,000,000 (\$1,640,000,000)*	\$19,880,000,000 (\$6,560,000,000)*

Infrastructure

- Establish federal programs and incentives (such as cost-share grants, no-interest loans, and grants tied to supersizing) to support investment in supersized common carrier CO₂ transport capacity that could serve multiple capture projects, including future carbon capture facilities.
- Provide Front-End Engineering and Design (FEED) study grants (\$20 million per fiscal year through 2025) for CO₂ transportation infrastructure.

Deployment

- Amend the Section 45Q tax credit for carbon sequestration to ensure its availability well into the future and to make it more useable for carbon capture projects, including by:
 - Establishing a monetization option for 45Q through direct pay;
 - Extending the commence construction deadline for projects through at least 2035;
 - Establishing an electricity production tax credit option under 45Q for natural gas carbon capture power projects;
 - Expanding the range of entities to which eligible claimants can transfer the credit; and
 - Allowing claimants to claim 45Q for up to 20 years.
- Allow commercial-scale natural gas carbon capture projects to opt-in to an amended Section 45 production tax credit (PTC) in lieu of claiming 45Q.
- Establish an additional grant program with at least \$6 billion in total appropriations that would be available to commercial-scale carbon capture projects to complete construction.
- Modify the 48A credit to make natural gas carbon capture utilization and storage (CCUS) eligible and to remove heat rate requirements.
- Authorize private activity bonds and master limited partnerships for carbon capture projects.
- Establish a program with appropriations of at least \$500 million per fiscal year through FY2025 to facilitate the commercialization of large-scale saline storage locations with the capacity to accept at least 10 million tons of CO₂.

Demonstration

- Increase appropriations by at least \$6 billion over 5 fiscal years to support commercial-scale capture demonstration projects involving FOAK and NOAK capture technologies.
- Increase appropriations by \$100 million per fiscal year for 5 fiscal years for the Department of Energy (DOE) to provide funding to cover FEED studies for commercial-scale capture plants.
- Increase appropriations by \$455 million for DOE's Carbon Storage Assurance Facility Enterprise (CarbonSAFE) program to advance existing projects to completion under Phase VI and to initiate and to provide support for completion of new projects, and direct DOE to amend CarbonSAFE to eliminate Phase I and instead initiate projects under current Phase II.

Storage

- Increase appropriations by at least \$5 million per fiscal year from FY2021 to FY2026 (and possibly beyond) for Environmental Protection Agency (EPA) staffing and for Class VI injection well permitting activities.
- Increase appropriations by at least \$10 million per fiscal year through FY2026 for a new EPA grant program to support states in establishing and operating Class VI well permitting programs.
- Require EPA's Underground Injection Control office to identify best practices and potential procedural improvements in issuing Class VI well permits and encourage EPA to provide guidance on how a project under a Class II permit might transition to a Class VI permit.
- Provide a federal backstop for CO₂ storage liability after a period of 10-15 years post-closure.

- Support the creation of regional geologic storage corporations responsible for developing CO₂ transportation and storage projects and for managing long-term carbon storage.
- Establish offshore geologic storage projects, potentially through competitive pre-FEED study grants and competitive sequestration payment awards.
- Increase appropriations to \$700 million over the next 5 years for DOE's existing Carbon Storage Assurance Facility Enterprise (CarbonSAFE) program, which focuses on developing large-scale geologic CO₂ storage reservoirs, to advance existing CarbonSAFE projects to completion under Phase VI (this covers six existing projects), and to initiate new CarbonSAFE projects (at least four new projects) and provide support for their completion from Phase I to Phase VI. In addition, provide direction to DOE to amend the CarbonSAFE program to eliminate Phase I of the process and to instead initiate projects under current Phase II.

Research & Development

- Revise and expand the scope of DOE's Office of Fossil Energy (FE) to ensure a focus on carbon capture with natural gas power generation, give more guidance regarding which carbon capture value chain technologies to focus on, and direct FE to adopt cost and performance goals for natural gas with CCUS.
- Increase appropriations to \$450-650 million per fiscal year for at least 5 years for FE activities to improve the cost and performance of capture technologies.

About the Carbon-Free Technology Initiative

The Carbon-Free Technology Initiative (CFTI) is focused on implementation of federal policies that can help ensure the commercial availability of affordable carbon-free, 24/7 power technology options by the early 2030s to help the electric power industry meet net-zero carbon reduction commitments. Participants in the CFTI include the Edison Electric Institute (EEI) and its member companies, Clean Air Task Force, Bipartisan Policy Center, Center for Climate and Energy Solutions, ClearPath, Great Plains Institute, Information Technology & Innovation Foundation, Nuclear Energy Institute, and Third Way.

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