

**Carbon Capture Coalition
Fiscal Year 2025 Requests**

Energy and Water Development and Related Agencies Appropriations Bill

Below is an overview of our FY25 requests for the E&W bill. If you have any questions regarding these requests, or need more information, please contact Madelyn Morrison at mmorrison@carboncapturecoalition.org.

Title of Request: Carbon Management R&D
Appropriations Bill: Energy & Water
Department/Agency: DOE
Account: Fossil Energy and Carbon Management
Program(s): Carbon Management Technologies

Amount being requested by stakeholders for FY25: \$492,200,000

Amount in President's Budget Requests

FY25: \$435,600,000

FY24: \$464,000,000

*FY23: \$665,000,000

FY22: \$531,500,000

FY21: \$78,000,000

FY20: \$40,000,000

*In the FY23 omnibus carbon management technology programs were separated out into Carbon Management Technologies

Amount Enacted

FY24: \$428,000,000

*FY23: \$460,000,000

FY22: \$416,000,000

FY21: \$406,800,000

FY20: \$490,800,000

*In the FY23 omnibus carbon management technology programs were separated out into Carbon Management Technologies

Brief Description and Justification:

The year 2030 is widely seen as a critical benchmark for meeting midcentury climate targets. Technologies and strategies for meeting 2050 goals need to be commercially available and deployed at a significant scale by the end of the current decade to meet these targets. Modeling done by the United Nation's Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) to assess pathways to achieve 2050 climate goals continues to reaffirm the essential role that economywide and dramatically accelerated commercial deployment of carbon management technologies must play in managing emissions from existing industrial facilities and power plants, balancing emissions from emissions-intensive sectors, and removing legacy CO₂ emissions from the atmosphere. In fact, the IPCC's most recent report uses seven specific pathways to illustrate economywide decarbonization strategies; only one excludes carbon capture and requires global energy demand to decrease by nearly 50 percent by midcentury.

Carbon capture, reuse, and storage can play a critical role in reducing and managing US emissions from the power sector and industrial applications. In addition, direct air capture (DAC) is another useful method for both offsetting residual emissions from heavy industrial facilities, as well as carbon removal at a significantly large scale (e.g. millions of tons) in order to tackle legacy emissions past midcentury.

Carbon management technologies require robust annual federal funding to successfully demonstrate and deploy at a commercial scale and realize their full emissions, jobs, and energy production potential. Recognizing the high inflation rates that are being felt across the entire American economy, energy innovation programs are no exception. The requested funding levels are designed to keep pace with the current inflation rate while providing the Department of Energy (DOE) the necessary tools to see these foundational carbon management programs under their purview scale to meet greenhouse gas emissions reduction targets, reduce criteria air pollutants from emitting facilities, protect and expand a high-wage jobs base and foster American energy and industrial production. While carbon management has received recent historic investments through landmark legislation like the Bipartisan Infrastructure Law, it is essential to provide robust annual funding for core RD&D programs at the DOE. These programs are a fundamental source of federal support for carbon management technologies and a critical policy lever for realizing economies of scale.

Carbon Capture. There are long lead times in advancing capital-intensive technologies from concept to demonstration to commercialization, which makes federal investments during the next decade critical to scaling up carbon capture technologies (including capture at industrial and power facilities and removing CO₂ directly from the atmosphere) to achieve net zero emissions and meet midcentury climate goals. Stable and incremental increases in DOE funding has played a crucial role in the success of recent large-scale carbon capture and storage projects and has already provided cost shares to over a dozen engineering studies (front-end engineering and design studies), the final step before a project can proceed to construction.

In the years since Congress revamped and expanded the federal Section 45Q tax credit and the program's subsequent enhancement in the 117th Congress, project developers, and investors have publicly announced more than 190 carbon management projects under development, with many more in the development pipeline. They span multiple industry sectors, including electric power, transportation fuels, direct air capture, and CO₂ transport and storage infrastructure. These 190-plus publicly announced projects represent an essential early down payment on long-term deployment on a scale sufficient to meet midcentury climate goals. The IEA estimates that the current slate of carbon management projects under development globally will capture and store about 40 million tons of CO₂ in the next five years. That number must increase to 7.6 gigatons by midcentury to reach net zero emissions. To meet these goals, we must deploy thousands of carbon management facilities in industry, power, and direct air capture between now and 2030.

The application of carbon capture technology on both power and industrial facilities is crucial to reduce emissions. However, certain industrial processes have limited or no decarbonization strategies beyond carbon management. DOE has already made significant investments in carbon management in the steel, cement, and chemical sectors, but it is crucial to take additional steps to accelerate the commercialization of carbon capture, removal, reuse, and storage technologies in the industrial sector.

Carbon Utilization. DOE's Carbon Utilization Program works to advance a wide variety of technologies that reuse waste gases from combustion or industrial processes. High-volume products sourced from carbon utilization, or carbon reuse pathways, including concrete, aggregates, and fuels, could drive both

significant carbon reuse and market value. However, realizing this market potential will require a range of market development policies, such as federal procurement, the buildout of CO₂ transport infrastructure, and breakthroughs in carbon reuse technologies and processes enabled by federal RD&D. This is an excellent opportunity to not only reduce emissions but also to spur new lucrative industries and jobs, as well as aid the financial case for deploying carbon capture technologies.

With so many promising commercialization opportunities in its carbon use and reuse portfolio, modest increases to the Carbon Utilization Program will provide an outsized impact. These emerging technologies will not only help to decarbonize carbon-intensive industrial sectors, but it will also allow the US to become globally competitive by developing approaches to use carbon oxides to create novel and innovative products and materials.

Carbon Dioxide Removal. Removing carbon dioxide directly from the atmosphere is critical to offset emissions in those sectors with challenging-to-abate emissions and post-2050, reducing the concentration of CO₂ in the atmosphere. Increasingly, CDR and in particular, direct air capture (DAC) is recognized as an important and commercially available pathway to help meet emissions reduction goals. DAC is one type of engineered CDR that permanently removes CO₂ from the atmosphere when paired with geologic storage; alternatively, captured CO₂ can also be reused to produce essential fuels, chemicals, and products and offset emissions from these emissions-intensive sectors.

In addition to promising commercial developments, the US now provides the most forward-looking policy support for the large-scale deployment of DAC. This includes, but is not limited to, the DOE's DAC Hub program, the CDR Purchase Pilot Prize, as well as increased support for DAC in the recent enhancements to the 45Q tax credit.

Carbon Transport and Storage. Similar to the buildout of other forms of infrastructure to support the deployment of low- and zero-carbon technologies over the next 30 years, scaling a national CO₂ transport and storage system capable of storing large volumes of CO₂ in dedicated saline geologic formations is an essential component to meeting midcentury climate goals. Planning and investing in this infrastructure today will reduce costs and land use impacts while realizing needed economies of scale.

The CarbonSAFE program funds critical, earlier-stage projects that will improve the understanding of successful commercial-scale storage sites, including site selection, geologic characterization, modeling, and monitoring. CarbonSAFE and other programs in Carbon Storage have an important role in further de-risking the development of large-scale carbon storage projects, as well as an interconnected CO₂ transport and storage infrastructure network that safely and permanently stores CO₂ at the scale required by midcentury climate targets.