

# The History of Carbon Management Policy



CARBON CAPTURE  
COALITION

## Carbon Management Policy Overview

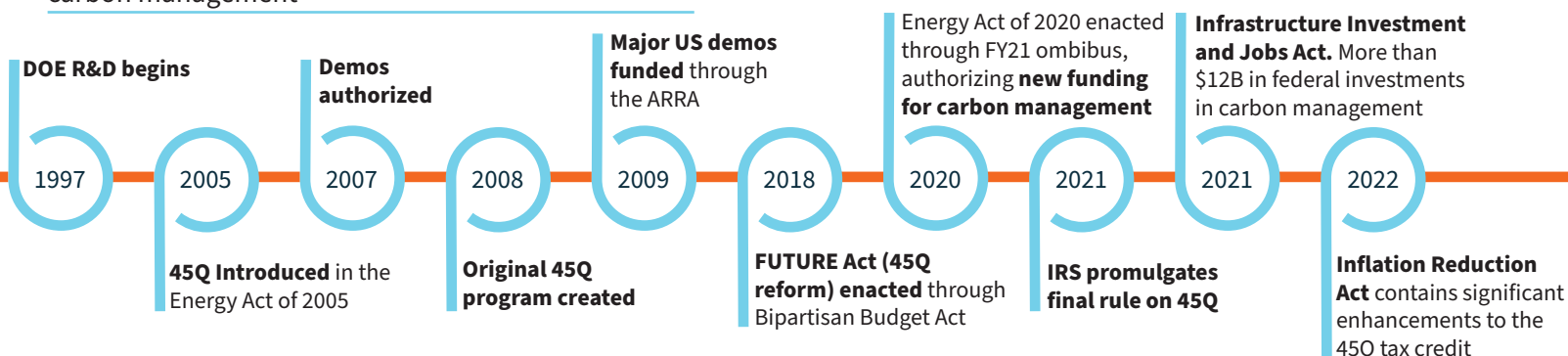
Over the course of the past decade, the Carbon Capture Coalition and its 100+ members have played a central role in advocating for a comprehensive portfolio of federal policies to commercialize the full suite of carbon management technologies, which include carbon capture, removal, transport, reuse and storage (see Figure 1). Thanks in large part to Coalition efforts, for the first time ever, there is a supportive policy framework in-place for large-scale deployment of these technologies across emitting sectors.

The Coalition has celebrated a wide range of policy achievements such as:

- The bipartisan reform and expansion of the federal section 45Q tax credit, the foundational financing mechanism for carbon management projects, in the [2018 FUTURE Act](#);
- Historic increases in funding to retool and expand federal research, development, and demonstration (RD&D) carbon management programs;
- Groundbreaking legislation to prioritize the buildout of CO<sub>2</sub> transport and storage infrastructure (SCALE Act);
- And most recently, the significant enhancement of the 45Q tax credit to make the program more accessible to power, industrial and manufacturing sectors.

Building off of this success, the 118th Congress now has the unique and important opportunity to reinforce the role of American leadership in the development and deployment of these technologies.

**Figure 1:** Timeline of federal investments in carbon management



## Carbon Capture and Sequestration Tax Credit: Federal Section 45Q

Since the reform and expansion of the federal Section 45Q tax credit in 2018, policymakers and the scientific community have increasingly recognized the program's essential value in bolstering the economy-wide adoption of carbon management technologies as a tool to mitigate the worst impacts of our changing climate, secure America's global leadership position in deploying innovative and cost-effective energy technologies, while preserving high-wage jobs that local economies depend upon.

The 45Q tax credit is unique among energy and industrial tax credits in that claimants must demonstrate secure geologic storage or beneficial reuse of the captured carbon oxide (CO<sub>2</sub> or its precursor, CO), as regulated under the EPA, before receiving credit. EPA regulates and permits geologic storage projects using the Underground Injection Control Programs' Class II (Enhanced Oil Recovery)

## Robust Resources for Developing and Deploying the Full Supply Chain of Carbon Management Technologies

In the same way that other low- and zero-carbon energy technologies were largely developed and commercialized through public-private partnerships, such as wind and solar, the federal government has played a key role in the development of some of the first carbon capture and storage projects. While U.S. Department of Energy funding has played a crucial role in the success of several large-scale carbon management projects, carbon capture overall has suffered a significant lack of federal investment compared to historic levels of support for other clean energy technologies.

In a recent step change, authorizations contained in the bipartisan Energy Act of 2020, and later fully funded through the enactment of the bipartisan Infrastructure Investment and Jobs Act (or Bipartisan Infrastructure Law), helped to retool and expand federal research, development and demonstration programs to help address our climate challenges while sustaining U.S. technology leadership. The bill provided a comprehensive and overdue update of federal energy programs and represents the single largest investment in carbon management technologies in history, funding four key areas of carbon management: carbon capture, utilization and storage RD&D; carbon transport and storage infrastructure and permitting; carbon utilization development; and carbon removal.

and Class VI (secure geologic storage) injection wells. Through these programs, EPA and established state primacy programs maintain a robust system of monitoring, reporting, and verification (MRV) to validate secure geologic storage to claim the 45Q tax credit.

Increased credit values provided to projects deployed in the industry, power, and direct air capture sectors are the cornerstone of the recent enhancements made to the 45Q program (see Figure 2). If swiftly and properly implemented, the carbon management policies and funding contained in the 2021 Bipartisan Infrastructure Law, combined with the recent enhancements to 45Q, are projected to result in a 13-fold scale-up of domestic carbon management capacity and 210 to 250 million metric tons of annual emissions reductions by 2035, according to a [recent analysis](#).

**Figure 2:** 45Q Tax Credit Structure and Eligibility Requirements as Amended by the Inflation Reduction Act of 2022

**Timing:** Projects must begin construction before January 1, 2033, and may claim the credit for up to 12 years after being placed in service.

**Eligibility:** Carbon capture and direct air capture projects that capture and reuse or geologically store carbon oxides (CO<sub>2</sub> or CO) are eligible to claim the credit so long as they demonstrate amounts of CO<sub>2</sub> stored or utilized using existing EPA regulations.

**Project Wage and Labor Requirements:** To claim the full credit level, project developers must comply with project wage and labor requirements as outlined by the U.S. Department of the Treasury and Internal Revenue Service.

	Annual Carbon Capture Thresholds (metric tons of CO <sub>2</sub> /CO per year)	Credit value for secure storage of CO <sub>2</sub> in saline or other geologic formations	Credit value for carbon reuse projects to convert CO or CO <sub>2</sub> into useful products	Credit value for secure geologic storage of CO <sub>2</sub> in oil and gas fields
Direct Air Capture Facilities	1,000 or more	\$180 per ton	\$130 per ton	\$130 per ton
Industrial Facilities	12,500 or more	\$85 per ton	\$60 per ton	\$60 per ton
Electric Generating Units	18,750 or more	\$85 per ton	\$60 per ton	\$60 per ton

## Transport and Storage Infrastructure

Similar to the buildout of other forms of infrastructure needed to support the deployment of low- and zero-carbon technologies over the next 30 years, scaling a national CO<sub>2</sub> transport and storage system is an essential component to meeting midcentury climate goals.

To meet the pace and scale of this necessary expansion, the Bipartisan Infrastructure Law provided foundational investments for the buildout of regional CO<sub>2</sub> transport and storage infrastructure with the complete inclusion of the bipartisan Storing CO<sub>2</sub> and Lowering Emissions (SCALE) Act. Much like the development of other infrastructure systems, the SCALE Act positions the federal government to partner with private capital to invest in both regional and national CO<sub>2</sub> transport and storage infrastructure networks. Key policies enacted from the SCALE Act to enable the necessary buildout of an interconnected transport and storage network include:

- Grant funding for the development of new or expanded commercial large-scale carbon sequestration projects and associated carbon dioxide transport infrastructure, including funding for the feasibility, site characterization, permitting, and construction stages of project development;
- Funding for grants and loans to build new CO<sub>2</sub> management infrastructure; and
- Funding for Class VI well permits at EPA as well as grants for states to defray the costs of state agencies for permitting and monitoring Class VI injection wells.

## Class VI Injection Wells

Federal and state authorities are tasked with ensuring safe and permanent storage in appropriate geologic formations through the EPA's Underground Injection Control Program's Class VI injection well program. Class VI wells are used to inject compressed CO<sub>2</sub> deep into suitable geologic formations typically over a mile underground, solely for the purpose of permanently storing CO<sub>2</sub>. The [Class VI program](#) addresses the permanent storage of CO<sub>2</sub> and ensure that wells are appropriately sited, constructed, tested, monitored, funded, and closed once CO<sub>2</sub> injection activities are completed. Before potential storage sites are allowed to move forward, they must provide highly detailed models to federal or state regulators that demonstrate safe and permanent storage of CO<sub>2</sub> and ensure the pipelines around sites are continually monitored. Additionally, EPA can grant primary enforcement authority—referred to as primacy—to individual states, territories, or Tribal nations, which delegates authority to administer certain injection well classes.

**Figure 3:** Class VI Well State Primacy Status and Pending Well Applications at EPA

