PRIMER: 45Q TAX CREDIT FOR CARBON CAPTURE PROJECTS

CARBON CAPTURE COALITION

What is the Section 45Q Carbon Capture Tax Credit?

Section 45Q of the US tax code provides a performance-based tax credit for carbon management projects that capture carbon oxides (carbon dioxide and carbon monoxide) from eligible industry and power facilities and directly from the atmosphere. The 45Q tax credit can be claimed when an eligible project has:

- securely stored the captured carbon dioxide (CO2) in appropriate dedicated geologic formations, including saline or other geologic formations, or oil and gas fields; or
- reused the captured CO2 or carbon monoxide (CO) as a feedstock to produce low– and zero-embodied carbon products such as fuels, chemicals, and building materials.

To claim the tax credit, taxpayers must successfully demonstrate secure geologic storage of captured carbon or reuse to produce low-carbon products. This occurs through robust and transparent monitoring, reporting, and verification of the stored CO2 processes or lifecycle analysis (LCA) of the reused carbon, overseen by the US Department of the Treasury and the Internal Revenue Service and relies on data collection overseen by the US Environmental Protection Agency and the US Department of Energy.

Why is the 45Q Tax Credit Important?

The 45Q tax credit is the foundational domestic policy mechanism for the deployment of carbon capture, direct air capture, and carbon reuse technologies, as well as supportive transport and storage infrastructure. As of July 2025, the tax credit has already resulted in more than 270 announced and operational projects, with 130 of those in advanced development.

How Does 45Q Support Carbon Management Projects?

The 45Q tax credit provides a strong market signal for installing carbon capture and direct air capture technologies by reducing the cost and risk to private capital of investing in deploying these technologies and associated transport and storage infrastructure across a range of industries.

Eligibility to Claim the 45Q Tax Credit

The owner of the capture equipment is the entity eligible to claim the tax credit. That party must physically or contractually ensure the storage or reuse of the carbon oxide and may elect to transfer the credit to another taxpaying entity.

Annual carbon capture thresholds, as shown to the right, determine the eligibility of different types of facilities for the credit.

Timing: Eligible projects that begin construction before January 1, 2033, can claim the credit for up to 12 years after being placed in service.

Qualified carbon oxide: Eligible projects must capture a "qualified carbon oxide," which the statute defines broadly as any carbon oxide (CO2 or CO) that is captured by eligible industrial (e.g., ethanol, steel, cement, and chemicals), power (natural gas, coal, and biomass-fired power plants), and direct air capture facilities.

Placed in Service: Projects placed in service *prior* to the most recent revisions to 45Q credit values (July 2025) will continue to receive credit levels corresponding to the date operations began.

Direct air capture facilities	Industrial facilities	Electric generating units
1,000 or more metric tons of CO_2/CO	**12,500 or more** metric tons of CO_2/CO	**18,750 or more** metric tons of CO_2/CO

45Q Tax Credit Amount: Depends on Project Type

	For dedicated secure geologic storage of CO_2 in saline or other geologic formations	For carbon reuse projects to convert carbon into useful products (e.g., fuels, chemicals, products)	For secure geologic storage of CO_2 in oil and gas fields
INDUSTRY & POWER	**$85/ton**	**$85/ton**	**$85/ton**
DIRECT AIR CAPTURE	**$180/ton**	**$180/ton**	**$180/ton**

Key Elements of Section 45Q Tax Credit

There have been several bipartisan reforms and enhancements to the federal Section 45Q tax credit over its history. Below are key components of the current iteration of the tax credit and the rationale for why particular aspects are important for the deployment of carbon management technologies.

Aspects of 45Q	Importance for carbon management projects
Credit values for capture or reuse from industry, power, and direct air capture projects were increased in 2022.	The 45Q tax credit is the market signal for domestic deployment of carbon management technologies across sectors. To receive full credit value, projects must comply with prevailing wage and apprenticeship utilization requirements for the construction of any facility or carbon capture equipment.
Credit level parity across end uses of captured CO2 and CO was provided in 2025.	These updated credit values close the cost gap for projects using captured carbon oxides as a feedstock to manufacture low - and zero-carbon products and allow for additional flexibility in project development and deployment.
Enables the owner of the capture equipment to transfer the credit to any other taxpaying entity.	This option provides additional flexibility, making it easier for investors in carbon capture equipment to transfer tax credits to taxpayers with tax liability. It also provides a significantly larger pool of potential investors in carbon management technologies.
Provides a direct pay mechanism for project developers.	For-profit entities: Project developers can access direct pay for the full tax credit value for the first five years after the carbon capture equipment has been placed in service. The remaining seven years of the credit must be financed through alternative means. Tax-exempt entities: Nonprofit entities (e.g., cooperatives, nonprofits, and municipal utilities) may access direct pay for the entire twelve years of the credit .
Eligible projects that begin construction before January 1, 2033, can claim the credit for up to 12 years after being placed in service.	The commence construction deadline provides financial certainty to project developers so that they can undertake the necessary financing, engineering studies, and permitting before construction, which are time-intensive processes.
Lowered capture thresholds, provided in 2022.	Lower annual capture thresholds across industry, power, and direct air capture applications enable more capture and reuse projects to qualify for the 45Q program, significantly expanding the sectors and applications spurred by the 45Q tax credit.

This primer was updated and adapted with permission by the Carbon Capture Coalition, in August 2025 from the Great Plains Institute's Primer: Section 45Q Tax Credit for Carbon Capture Projects , originally published in 2019.