

# PRIMER: 45Q TAX CREDIT FOR CARBON CAPTURE PROJECTS

## 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 which capture carbon oxides (carbon dioxide and its precursor, carbon monoxide) from eligible industry and power facilities, as well as directly from the atmosphere.

### The 45Q tax credit can be claimed when an eligible project has:

- securely stored the captured carbon dioxide (CO<sub>2</sub>) in appropriate geologic formations, including saline or other geologic formations or oil and gas fields; or
- reused the captured CO<sub>2</sub> or its precursor carbon monoxide (CO) as a feedstock to produce low embodied carbon products such as fuels, chemicals, and building materials.

To claim the tax credit taxpayers must successfully demonstrate secure geologic storage of captured or reused carbon. This occurs through robust and transparent monitoring, reporting, and verification of the geologically stored CO<sub>2</sub>, or lifecycle analysis (LCA) of the reused carbon through processes established by the US Department of Treasury and the Internal Revenue Service and overseen by the US Environmental Protection Agency and Department of Energy.

## Eligibility to Claim the 45Q Tax Credit

**The party eligible to claim the tax credit** is the owner of the capture equipment. 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 below, determine the eligibility of different types of facilities for the credit.

**1,000 + METRIC  
TONS OF CO<sub>2</sub>/CO**

**Direct air capture  
facilities**

**12,500 + METRIC  
TONS OF CO<sub>2</sub>/CO**

**Industrial facilities**

**18,750+ METRIC  
TONS OF CO<sub>2</sub>/CO**

**Electric generating  
units**

**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 CO<sub>2</sub> that is captured by eligible industrial (e.g., ethanol, steel, cement, and chemicals), power (coal, natural gas, and biomass-fired power plants), and direct air capture facilities.

## BIPARTISAN REFORMS TO 45Q

As part of the Bipartisan Budget Act of 2018, Congress enacted legislation with broad bipartisan support to significantly expand and reform 45Q. In 2022, Congress enacted essential, bipartisan provisions to further strengthen the program under the Inflation Reduction Act. The enhancements provide, for the first time, the necessary federal policy support to adequately incentivize private investment in these technologies that are needed to fully decarbonize the American economy.

## WHY IS THE 45Q TAX CREDIT IMPORTANT?

The revamped federal 45Q tax credit provides a foundational policy for incentivizing carbon capture deployment in multiple industries, similar to how federal tax credits have incentivized wind and solar development. To fulfill carbon management’s full potential for reducing emissions, enhancing domestic energy and industrial production, and protecting and creating high-wage jobs, a suite of federal and state policies is ultimately required to complement 45Q and drive investment, innovation, and cost reductions sufficient to achieve economywide deployment.



## 45Q Tax Credit Amount: Depends on Project Type

|                             | For dedicated secure geologic storage of CO <sub>2</sub> in <b>saline or other geologic formations</b> | For <b>carbon reuse projects</b> to convert carbon into useful products (e.g., fuels, chemicals, products) | For secure geologic storage of CO <sub>2</sub> in <b>oil and gas fields</b> |
|-----------------------------|--|--|---|
| <b>INDUSTRY &amp; POWER</b> | \$85/metric ton  | \$60/ metric ton   | \$60/ metric ton  |
| <b>DIRECT AIR CAPTURE</b>   | \$180/ metric ton  | \$130/ metric ton  | \$130/ metric ton   |

## How Does 45Q Support Carbon Management Projects?

The 45Q tax credit reduces the cost and risk to private capital of investing in the deployment of carbon management technologies and associated transport and storage infrastructure across a range of industries. By 2030, it is crucial to see further deployment of the technology in lower-cost sectors and to see significant demonstration and cost reductions in critical-to-decarbonize sectors. These include heavy industrial sectors, such as steel, cement, and basic chemicals production, electric power generation, and direct air capture.

## Key Elements of the Reformed 45Q

The recent enhancement of 45Q provided important changes that will attract investment in projects.

### CHANGE

Increases credit values for capture or reuse from industry, power, and direct air capture projects

Provides a direct pay mechanism for project developers

Creates greater financial certainty by providing clear timing for eligibility

Dramatically lowers the annual carbon capture threshold

Enables the owner of the capture equipment to transfer the credit to any other taxpaying entity

### IMPORTANCE FOR CARBON CAPTURE PROJECTS

Incentivizing private investment in carbon management in sectors with higher costs of deployment is critical to reach decarbonization goals. To receive the full credit value, projects must comply with prevailing wage and apprenticeship utilization requirements for construction of any facility or carbon capture equipment.

**For-profit entities:** Project developers, for the first time, have the option to 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:** A direct pay option allows tax-exempt organizations (i.e., nonprofit projects, cooperatives, and municipal utilities), to access direct pay for the entire twelve years of the credit.

Giving project developers access to the full value of the tax credit will leverage greater private capital for investment in projects at no extra cost to the American taxpayer, given traditional tax equity investors in less commercially mature technologies typically require a significant portion of the value of the tax credit.

Provides certainty that the credit will be available once the timeline and requirements are met to store and/or reuse the captured carbon. This improvement in the financial certainty of the credit is expected to catalyze significant investment in carbon capture projects.

The significantly lowered annual capture thresholds across industry, power and direct air capture applications will enable more capture and reuse projects to qualify for the 45Q program, significantly expanding the sectors and applications spurred by the 45Q tax credit.

Carbon capture technology owners may more broadly transfer their tax credit to another taxpaying entity, receiving a cash payment for the transfer that's not included in the capture owner's taxable income. This option provides additional flexibility, making it easier for investors in carbon capture equipment to transfer tax credits to taxpayers with tax liability, and ultimately providing a significantly larger pool of potential investors in carbon management technologies.