

# Monetizing Your Carbon Emissions with 45Q Tax Credits

Are you missing out on tax credits that could improve the profitability of your operations? Changes to Section 45Q of the U.S. tax code have made it easier for plant owners to take advantage of tax credits for capturing and storing carbon dioxide (CO<sub>2</sub>) emissions. However, producers must act fast to meet the January 1, 2026 deadline to start construction. Here's what you need to know about the 45Q tax credits and the steps you can take to determine if carbon capture, utilization and storage (CCUS) is a viable option for your company.

## What 45Q Means for Plant Owners

45Q is a section of the tax code that provides incentives, in the form of tax credits, to encourage companies to invest in carbon capture and storage solutions that reduce carbon emissions to the atmosphere. To qualify for tax credits, captured CO<sub>2</sub> must be either stored underground in secure geologic formations, used for CO<sub>2</sub>-enhanced oil recovery (CO<sub>2</sub>-EOR), or utilized in other projects that permanently sequester CO<sub>2</sub>.

The 45Q program was initially implemented in 2008. The Bipartisan Budget Act of 2018 made important amendments to the tax code that made the credits more valuable for ethanol producers.

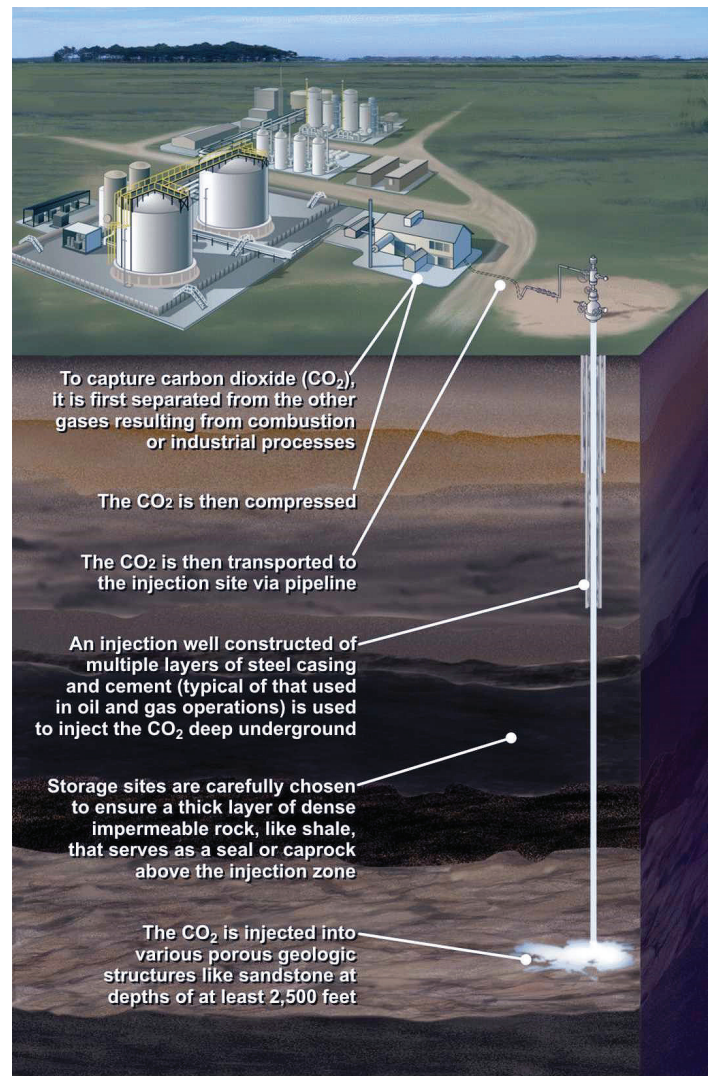
Among other changes, the amendments to Section 45Q:

- Increase the value of the tax credit from \$20 to \$50 per metric ton for secure geologic storage projects and from \$10 to \$35 for CO<sub>2</sub>-EOR projects
- Reduce the annual capture requirement from 500,000 metric tons to 100,000 metric tons for ethanol plants and industrial facilities other than electric generating units
- Allow the capturer of the CO<sub>2</sub> to transfer the credit to other entities, enabling flexible business models

These changes make the economics of carbon capture and storage more attractive for plant owners, whether you choose to store your carbon emissions yourself or sell it for CO<sub>2</sub>-EOR or other utilization projects.

## How Carbon is Captured and Stored

In carbon capture, utilization and storage, CO<sub>2</sub> is captured, compressed, and dehydrated at the source. It is then transported to the injection facility and injected into a secure geologic reservoir for storage or into an oil reservoir for CO<sub>2</sub>-EOR. Injection in these secure formations safely keeps the captured carbon deep underground where it cannot escape into the atmosphere. CCUS is an important tool for reducing overall carbon emissions from industry.



For geologic storage, CO<sub>2</sub> is injected into a deep geologic formation where it can be safely and permanently stored. These formations are typically deeper than 2650 feet to maintain the CO<sub>2</sub> in a supercritical state. Supercritical CO<sub>2</sub> is best because the CO<sub>2</sub> has the viscosity of a gas for easy injection and a liquid-like density for more efficient storage. The deep formation must have sufficient ability to allow the CO<sub>2</sub> to enter the formation (permeability) and sufficient space to store the CO<sub>2</sub> (porosity). Above the storage formation, there must be an impermeable caprock layer that prevents the stored CO<sub>2</sub> from leaking out. Deep saline reservoirs and depleted oil and gas reservoirs are good candidates for CCUS projects. These formations can be found in sedimentary basins throughout the United States.

Alternatively, plant owners can sell the captured CO<sub>2</sub> for CO<sub>2</sub>-EOR. In CO<sub>2</sub>-EOR projects, captured CO<sub>2</sub> is injected into oil reservoirs to produce oil that was trapped after initial oil production in the field has ended. CO<sub>2</sub> injected into oil reservoirs for CO<sub>2</sub>-EOR remains in the reservoir and is permanently stored.

### Taking Advantage of 45Q

Plant owners interested in taking advantage of 45Q tax credits must determine whether it makes economic sense. Under the new tax code, the answer for many producers will be yes.

Some questions to ask:

- Does my operation produce at least 100,000 metric tons of CO<sub>2</sub> annually?
- Are there suitable geologic formations for carbon sequestration in my vicinity?
- Are there nearby oil and gas producers who may be interested in purchasing my CO<sub>2</sub> for CO<sub>2</sub>-EOR?
- What capital investment will be required to implement CO<sub>2</sub> capture and compression at my facility?
- Am I prepared to make this investment to meet the January 1, 2026 deadline for beginning construction?

### The following steps are needed to inform the economic analysis, identify an appropriate storage location and ultimately construct and operate the well.

<b>Screening</b> Identification of a suitable storage site that meets the requirements for CCUS projects.	<b>Modeling</b> The geological formation is modeled to determine whether it has sufficient storage capacity for the life of the project.	<b>Characterization</b> A characterization well is drilled to collect new data to verify the characteristics of the storage reservoir and caprock formations.	<b>Permitting</b> A permit must be obtained that ensures all safety and environmental regulations are met.
<b>Drilling</b> An injection well is drilled to inject and store CO <sub>2</sub> in the target geologic reservoir.	<b>Surface construction</b> Infrastructure for CO <sub>2</sub> capture, compression and transport is installed.	<b>Operations</b> CO <sub>2</sub> is injected for saline storage or CO <sub>2</sub> -EOR	<b>Monitoring &amp; reporting</b> 45Q requires companies to have long-term monitoring and reporting in place to ensure CO <sub>2</sub> is safely and permanently stored.

These steps take time, so plant owners interested in pursuing the 45Q tax credits should get started as soon as possible. To take advantage of the credits, construction on new CCUS projects must begin before January 1, 2026.

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