Section 45Q credit for carbon oxide sequestration

KPMG National Renewable Energy Group

Section 45Q provides a nonrefundable income tax credit on a per-ton basis for carbon oxide (which includes both carbon monoxide and carbon dioxide) that is captured and sequestered. The credit is available for carbon oxide captured and permanently stored, used as tertiary injectant in an enhanced oil or natural gas recovery project (EOR), or utilized in a commercial process or product. Construction on the project must begin prior to 2026 to be eligible for the credit. The credit is claimed over a 12-year period starting with the year the project is placed in service. The available credit amount is adjusted each year and depends on the end use of the carbon oxide.

Credits amounts in dollars/metric tons

	Permanent Storage	EOR	Utilization
2017	22.66	12.83	12.83
2018	25.70	15.29	15.29
2019	28.74	17.76	17.76
2020	31.77	20.22	20.22
2021	34.81	22.68	22.68
2022	37.85	25.15	25.15
2023	40.89	27.61	27.61
2024	43.92	30.07	30.07
2025	46.96	32.54	32.54
2026*	50.00	35.00	35.00

*After 2026 the credit is adjusted for inflation.

Threshold requirements

Carbon capture technology can be deployed across a range of industries, including electric power generation, ethanol and fertilizer production, natural gas processing, refining, chemicals production, and the manufacture of steel and cement. Certain minimum capture thresholds must be satisfied to claim the credit and such thresholds vary depending on the type of industry or process. For facilities other than electric generating facilities, taxpayers generally must capture and sequester 100,000 metric tons of carbon oxide per taxable year. For electric generating facilities, taxpayers must capture and sequester at least 500,000 metric tons of carbon oxide per taxable year. A lower threshold of 25,000 metric tons is available for facilities emitting 500,000 metric tons or less of carbon oxide and for which the captured carbon oxide is utilized. IRS regulations allow taxpayers to aggregate multiple capture facilities into a single project for purposes of the minimum capture thresholds in certain situations.

Secure storage

To claim the credit, the carbon oxide must be captured and securely stored. There are annual requirements for reporting the securely stored carbon oxide including sign-off from certified engineers. For carbon oxide that is permanently stored, the reporting requirement includes reporting under specified Environmental Protection Agency rules (Subpart RR) for underground wells. For carbon oxide use in EOR operations, taxpayers have the option of reporting based on guidelines and processes prescribed by the International Organization for Standardization rules, instead of Subpart RR.

Eligible credit claimants

The party eligible to claim the tax credit is the owner of the capture equipment. It is not required that the owner of the carbon capture equipment also own the underlying facility that emits the carbon oxide. The owner of the capture equipment must physically or contractually ensure the storage or utilization of the carbon oxide. Section 45Q also allows the owner of the carbon capture equipment to elect on an annual basis to transfer the credit or a portion of the credit to another party that stores or uses the carbon oxide.

Recapture

The credit may be recaptured if carbon oxide ceases to be securely stored (either permanently or as an injectant in EOR). There is a three-year recapture period, and any recapture amount will be accounted for in the taxable year that it is identified and reported as an addition to tax for such year. In the event of leakage, the taxpayer will have credit recapture if the leaked amount of carbon oxide exceeds the amount of carbon dioxide stored or injected.

Utilization

Utilization includes (1) the fixation of qualified carbon oxide through photosynthesis or chemosynthesis, such as through the growing of algae or bacteria; (2) the chemical conversion of such qualified carbon oxide to a material or chemical compound in which such qualified carbon oxide is securely stored; or (3) the use of qualified carbon oxide for any other purpose for which a commercial market exists. To claim the credit for utilization projects, taxpayers must verify the amount of qualified carbon oxide utilized through a lifecycle analysis (LCA) of greenhouse gas emissions, and the LCA must demonstrate that the utilization process results in a net reduction of emissions. Additionally, an independent third-party engineer must perform or verify the LCA. The taxpayer must submit the LCA report together with a third-party independent statement to the Department of Energy and IRS for a technical review and must receive IRS approval of its LCA before claiming 45Q credits.

Placed-in-service date

To qualify for the credit with these higher rates (and not subject to a 75 million metric ton cap), taxpayers must pay special attention to the placed-in-service date of each process train of carbon capture equipment and ensure that date is on or after February 9, 2018. Carbon capture equipment may qualify as originally placed in service, even if it contains some used components of property, as long as the fair market value of the used components is not more than 20 percent of the qualified facility or carbon capture equipment's total value (80/20 Rule).

How KPMG can help

The KPMG National Renewable Energy Group can advise clients on section 45Q. Professionals in this group combine deep technical knowledge, industry experience, and an intimate understanding of legislative and administrative matters to help clients evaluate eligibility and navigate regulatory requirements. With extensive knowledge in partnership transactions and financial modeling, as well as cost segregation and valuation services, group professionals can also advise on the various aspects of tax equity investment structures and equipment upgrades under the 80/20 Rule. Finally, KPMG professionals can advise companies on ESG and decarbonization strategies more broadly, and how section 45Q fits into those frameworks.

Contact us

For more information about the KPMG National Renewable Energy Group and how it can assist with section 45Q credits, contact your local KPMG adviser or one of the following group professionals:

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