

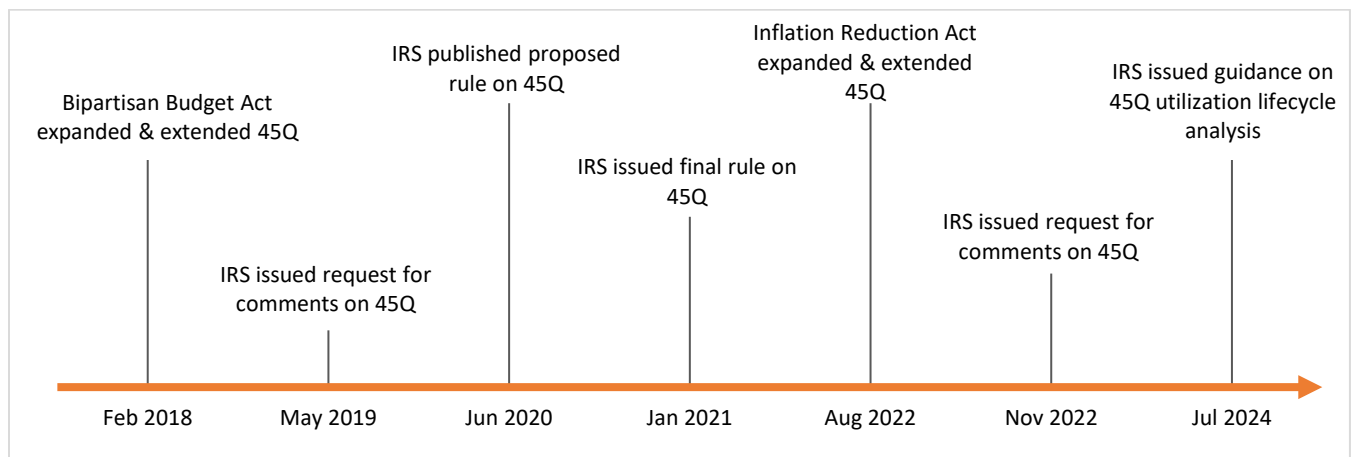
September 2024

## IRS Implementation of the Carbon Oxide Sequestration Credit (45Q)

The Carbon Oxide Sequestration tax credit, commonly known as 45Q, is one of the most significant subsidies supporting carbon capture and storage technology. Industries such as coal, biofuels, and oil and gas can take advantage of this program. The Internal Revenue Service (IRS) administers the 45Q program, with its most recent rulemaking finalized in 2021, following passage of the Bipartisan Budget Act of 2018. This act significantly expanded 45Q by removing the cap on the total tonnage of carbon eligible for the credit. 45Q was most recently expanded and extended by the Inflation Reduction Act (IRA), which increased the credit amount to up to \$180 per ton of carbon captured. The IRS has not published a final rule implementing changes to 45Q made by the IRA.

### Recent Legislative and Regulatory History of 45Q

The IRS's most recently finalized rule on 45Q was issued in 2021, following the passage of the Bipartisan Budget Act of 2018. In May 2019, the IRS published a notice requesting comments "on issues arising under section 45Q, as well as specific comments concerning secure geological storage, the measurement of qualified carbon oxide, the recapture of the benefit of the credit for carbon oxide sequestration, the types of utilization that qualify for the credit...etc."<sup>1</sup> The proposed rule was published in June 2020,<sup>2</sup> with the final rule issued in January 2021.<sup>3</sup>



<sup>1</sup> Internal Revenue Service, "Request for Comments on Credit for Carbon Oxide Sequestration," Notice 2019-32, May 2019. <https://www.irs.gov/pub/irs-drop/n-19-32.pdf>

<sup>2</sup> Internal Revenue Service, "Credit for Carbon Oxide Sequestration," 85 FR 34050, May 2020. <https://www.federalregister.gov/documents/2020/06/02/2020-11907/credit-for-carbon-oxide-sequestration>

<sup>3</sup> Internal Revenue Service, "Credit for Carbon Oxide Sequestration," 86 FR 4728, January 2021. <https://www.federalregister.gov/documents/2021/01/15/2021-00302/credit-for-carbon-oxide-sequestration>

The IRS is working on a new rule in response to the Inflation Reduction Act, which further expanded and extended the 45Q credit.<sup>4</sup> In November 2022, the IRS issued a notice seeking general comments on 45Q.<sup>5</sup> In July 2024, the IRS released initial guidance specifically addressing utilization projects claiming the credit.<sup>6</sup> The broader proposed rule is still pending release.

## 2021 Rule

The 2021 rule includes separate requirements for demonstrating storage through geologic sequestration and through enhanced oil recovery (EOR) operations, and partially relies on Environmental Protection Agency (EPA) regulations to prove permanent sequestration.

### *Geologic Sequestration*

To claim the 45Q credit for geologic sequestration of CO<sub>2</sub>, claimants must store carbon oxides in secure geological formations to prevent their release into the atmosphere. Compliance with Subpart RR of the EPA's Greenhouse Gas Reporting Program (40 CFR Part 98) is required, which includes calculating the volume of sequestered carbon oxides, implementing an EPA-approved Monitoring, Reporting, and Verification (MRV) plan, and meeting other applicable Subpart RR provisions.

### *EOR Operations*

For EOR operations, claimants can demonstrate secure geological storage by complying with either Subpart RR or the International Organization for Standardization standard (CSA/ANSI ISO 27916:19). When determining the size of a claimant's 45Q credit, the IRS primarily relies on the tons of carbon reported to the EPA by capture and use facility operators, meaning the IRS does not physically verify the carbon captured, sequestered, or used.

EOR sites using Subpart RR may self-certify the volumes of carbon eligible for the 45Q tax credit, meaning that a company official would sign a statement asserting that the volume numbers reported are true. This self-certification warrants scrutiny because, while Subpart RR data is publicly available, it does not provide enough information to verify the total amount eligible for the 45Q credit. Subpart RR only requires claimants to report the aggregate volume of sequestered carbon, which may include carbon from other sources, like naturally occurring reservoirs, that are ineligible for the 45Q credit.

Under the ISO standard, a similar certification statement by an "independent" engineer or geologist is required. The ISO standard does not mandate reporting of leakage information, which raises concerns since leakage in EOR projects can occur over decades. EOR operators using the ISO standard are not required to make their reports publicly available.<sup>7</sup>

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<sup>4</sup> Taxpayers for Common Sense, "Costly Expansion of 45Q in the Inflation Reduction Act of 2022," August 2022. <https://www.taxpayer.net/energy-natural-resources/45q-expansion-in-the-inflation-reduction-act/>

<sup>5</sup> Internal Revenue Service, "Request for Comments on the Credit for Carbon Oxide Sequestration," Notice 2022-57, November 2022. <https://www.irs.gov/pub/irs-drop/n-22-57.pdf>

<sup>6</sup> Internal Revenue Service, "Required Procedures to Claim a Section 45Q Credit for Utilization of Carbon Oxide," Notice 2024-60, July 2024. <https://www.irs.gov/pub/irs-drop/n-24-60.pdf>

<sup>7</sup> The sequestration data reported under subpart RR are publicly available on the EPA's Facility-Level Information on Greenhouse Gases Tool (FLIGHT). <https://ghgdata.epa.gov/ghgp/main.do>

### Recapture Period

The recapture period refers to the timeframe during which the Secretary of the Treasury is authorized to claw back the benefits of the 45Q credit if stored or injected carbon leaks into the atmosphere. Under current IRS rules, the recapture period is set at three years. This means facilities claiming the 45Q credit only need to retain data on stored or injected carbon for three years, while the tax credit remains available for 12 years. This recapture period is insufficient to address long-term liabilities associated with carbon storage.

### Transparency and Accountability

Concerns remain about transparency and accountability in the 45Q tax credit program, which has been vulnerable to fraudulent claims. In April 2020, the Treasury Department’s Inspector General for Tax Administration (TIGTA) found that 10 taxpayers claimed over \$1 billion in 45Q tax credits between 2010 and 2019, accounting for roughly 99 percent of all credits claimed.<sup>8</sup> Of that \$1 billion, \$894 million did not comply with Environmental Protection Agency (EPA) requirements for reporting on sequestered carbon and claimed credits before having EPA-approved MRV plans. The IRS has reviewed 68% of these cases and disallowed 59% of the noncompliant credits, worth approximately \$531 million. However, no further updates have been provided since April 2020.

In light of these issues, TIGTA recommended that the IRS launch a campaign or special initiative to scrutinize all taxpayers claiming the credit to prevent future waste, fraud, and abuse. The IRS should audit reported data on carbon volumes, MRV reports, and related documentation. This would help ensure public confidence in the program’s administration and provide transparency by making data on aggregate sequestered amounts and credits claimed publicly accessible in a timely manner. Disclosure must balance protecting confidential business information with allowing stakeholders to assess the credibility of claimed carbon sequestration activities, increasing the transparency and accountability of the 45Q program.

The IRS should also require independent third-party verification of the carbon that companies claim to have captured and stored. Currently, the IRS does not perform any physical verification of the captured, sequestered, or utilized carbon. EOR operators reporting under EPA Subpart RR are permitted to self-certify their reported volumes. This verification of self-reported volumes can ensure increased accuracy of data as Subpart RR reporting may not provide all the information needed for the IRS to verify 45Q claims.

The absence of on-site verification by either the IRS or EPA raises questions about the accuracy of the data submitted. In absence of more robust actions at the EPA, independent third-party verification could increase confidence in the reliability of reported data. However, this does not replace the need for increased engagement, monitoring, and verification by the EPA. Other programs, including the European Union Emissions Trading Scheme (EU ETS), the California Global Warming Solutions Act, and the Massachusetts Climate Protection and Green Economy Act, have all mandated third-party verification of greenhouse gas emissions reports.<sup>9</sup>

Additionally, companies should be required to maintain records for the entire period they are claiming the tax credits, allowing the IRS to claw back credits if any stored carbon is leaked. Since

<sup>8</sup> Treasury Inspector General for Tax Administration to Senator Menendez, April 2020.

<https://www.menendez.senate.gov/imo/media/doc/TIGTA%20IRC%2045Q%20Response%20Letter%20FINAL%2004-15-2020.pdf>

<sup>9</sup> Lesley McAllister, “Regulation by Third-Party Verification,” Boston College Law Review, Vol. 53, No. 1, 2012. San Diego Legal Studies Paper No. 11-073, September 2011. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1924624](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1924624)

facilities can claim the credit for 12 years, a three-year recapture period may be insufficient to ensure long-term accountability for secure storage, especially given the potential long-term liabilities of carbon storage.

## Recent IRS Actions

### *Form 8933*

Claimants of the 45Q tax credit are required to file IRS Form 8933 annually. All contractors that capture, sequester, inject, or utilize carbon oxides must also file Form 8933 and provide it to the tax credit claimant, who then attaches it to their own form. The IRS updated Form 8933 in January 2024 and requested public comments.<sup>10</sup>

The form, now four pages long, is divided into three parts. Part I asks whether the claimant:

- has obtained an IRS-approved lifecycle greenhouse gas (GHG) emissions analysis (necessary for claiming 45Q for utilization);
- is a capture facility owner;
- is a disposal facility owner;
- is a facility owner assigning tax credit to another facility owner; and/or
- a facility owner that is receiving tax credits from a facility owner.

Part II requires facility-specific information, such as the IRS registration number, e-GGRT ID (assigned under EPA's Greenhouse Gas Emissions Reporting Program), facility type and location, construction and placed-in-service dates, and the total amount of carbon oxide captured during the calendar year.

Part III asks for the facility's placed-in-service date, the total tons of carbon captured across all facilities owned by the claimant, broken down by whether the carbon is sequestered, used for EOR, or used in other commercial processes, and whether the facility meets prevailing wage and apprenticeship requirements to determine the credit amount.

Unlike previous versions that collected only aggregate carbon tonnage, the latest iteration of Form 8933 collects facility-level data and requires information on the transfer of credits among facility owners who were responsible for capturing and disposing of carbon.

### *Lifecycle Analysis Guidance*

On July 24, 2024, the IRS issued Notice 2024-60, which provides guidance on claiming the Section 45Q tax credit for utilization projects involving carbon capture and storage.<sup>11</sup> This guidance outlines the requirements for submitting a Life Cycle Analysis (LCA) report, which determines the total direct and indirect GHG emissions associated with a project's full lifecycle, from extraction to distribution and use of the finished product. For a utilization project to be eligible for the 45Q credit, the LCA must demonstrate that the project results in a net reduction of GHG emissions. The LCA

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<sup>10</sup> Treasury Department, "Agency Information Collection Activities; Submission for OMB Review; Comment Request; Carbon Dioxide Sequestration Credit," 89 FR 501, January 2024. <https://www.federalregister.gov/documents/2024/01/04/2023-29002/agency-information-collection-activities-submission-for-omb-review-comment-request-carbon-dioxide>

<sup>11</sup> Internal Revenue Service, "Required Procedures to Claim a Section 45Q Credit for Utilization of Carbon Oxide," Notice 2024-60, July 2024. <https://www.irs.gov/pub/irs-drop/n-24-60.pdf>

also determines the amount of carbon oxide utilized that is eligible for the 45Q tax credit. The guidance does not address the expansion and extension of the 45Q tax credit made by the IRA.

## Conclusion

Without stronger IRS oversight and accountability mechanisms, the 45Q tax credit will remain vulnerable to fraud and abuse. The lack of verification of data from claimants, limited transparency, and minimal recordkeeping leaves billions of dollars at risk. In the absence of additional measures, taxpayers may foot the bill for a tax credit that fails to deliver real greenhouse gas reductions.

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