

## Lawyer Insights

August 20, 2018

### Section 45Q Tax Credit Increase may Spur Carbon Capture

by David Lowman and Frederick Eames

Published in Law360



The Bipartisan Budget Act of 2018, enacted on Feb. 9, significantly increased and extended the tax credit for the capture and sequestration of carbon oxides provided under Section 45Q<sup>1</sup> of the Internal Revenue Code.<sup>2</sup> This development, which has been a top priority of carbon capture and sequestration supporters for several years, is expected to significantly boost deployment of carbon capture and storage, or CCS, across the United States and represents a potential opportunity for emitting companies, oil and gas companies and industrial users of carbon oxides.

The International Energy Agency and other respected analysis organizations have stated that CCS<sup>3</sup> is a “vital” technology to reduce greenhouse gas emissions similar to international emissions targets.<sup>4</sup> Even with energy efficiency improvements and large increases in renewable energy, the steep carbon dioxide reductions called for by international agreements such as the Paris Agreement would necessitate additional action. CCS is an essential tool for carbon dioxide reductions. There are many industrial processes for which the use of carbon dioxide-emitting fuels is irreplaceable.

CCS also can add to U.S. energy security. Captured carbon dioxide can be used to produce more energy through techniques like enhanced oil recovery, or EOR, in which carbon dioxide is injected into an oil field to produce oil that could not otherwise be released. Approximately 4 percent of U.S. oil production today comes from this technique and there are large new opportunities for it in the United States. Other countries have great potential for EOR as well.

There is bipartisan support in Congress for CCS. The legislation that extended the Section 45Q tax credit was supported by a bipartisan group of senators, including Heidi Heitkamp, D-N.D., John Barrasso, R-Wyo., Sheldon Whitehouse, D-R.I., and Shelley Moore Capito, R-W.Va.<sup>5</sup> CCS also has support from a range of private interests, from environmental groups to major companies.

#### Changes to Existing Law

The Section 45Q tax credit was first enacted in 2008. The credit was established at \$10 per ton for carbon dioxide permanently stored and used as a tertiary injectant (i.e., for EOR) and \$20 per ton for carbon dioxide not used as a tertiary injectant and permanently stored in a secure geological formation — for example, injected into a saline formation.<sup>6</sup> The theory behind the differentiated credit was that the market would pay for carbon dioxide for use in tertiary injection for EOR. The credit was limited to the first 75 million tons of qualified carbon oxides claimed by all projects, regardless of whether such qualified

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carbon was used to claim the \$10 per ton credit or the \$20 per ton credit. Congress indexed the credit to inflation and the credit currently stands at \$11.44 per ton and \$22.87 per ton<sup>7</sup> for stored carbon dioxide used and not used, respectively, as a tertiary injectant. These tax credit rates are still in effect for carbon oxides that are captured by a taxpayer using carbon capture equipment originally placed in service at a qualified facility before the enactment date of the Budget Act (Feb. 9, 2018). The credit is applicable to the entity that owns the facility, captures the carbon dioxide and uses or disposes of it. More than two-thirds of the credit has been claimed since its enactment in 2008. The credit for these older facilities will end in the calendar year when the Department of Treasury determines that the 75 million ton limitation has been reached.

The Budget Act extends and substantially increases the credit for facilities placed in service on or after the date of its enactment. The act retains the construct of a higher tax credit for carbon oxide that is captured and stored in a secure geological formation and not used for other purposes. It also continues the credit for carbon oxide captured at a qualified facility and used by a taxpayer as a tertiary injectant in a qualified enhanced oil and gas recovery project. The Budget Act also expands the “EOR credit” to carbon oxides used for other industrial purposes. Utilization for other industrial purposes means the fixation of carbon oxide through photosynthesis or chemosynthesis, such as through the growing of algae or bacteria, the chemical conversion of carbon oxide to a material or chemical compound that securely stores such carbon oxide and for any other industrial use for which a commercial market exists. The expansion of the credit for other industrial uses may provide significant additional opportunities for use of captured carbon. The credit rates are shown in the chart below:

	<b>Pre-Budget Act Qualified Sequestration</b>	<b>Post-Budget Act Qualified Sequestration</b>
<b>EOR, Other Industrial Utilization</b> <sup>8</sup>	\$10/ton plus inflation	\$12.83/ton to \$35/ton plus inflation (linear increase through 2026; inflation adjustment thereafter)
	75 million ton limit	Credit applies for 12 years beginning on date equipment placed in service
<b>Sequestration</b>	\$20/ton plus inflation	\$22.87/ton to \$50/ton plus inflation (linear increase through 2026; inflation adjustment thereafter)
	75 million ton limit	Credit applies for 12 years beginning on date equipment placed in service

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Monetization of the tax credit through tax equity investment may be key to the successful expansion of use of the credit by providing necessary funding to the CCS enterprise by businesses with sufficient tax appetite to make use of the tax credit. The credit is allowable to the person who owns the carbon capture equipment and physically or contractually ensures the capture and disposal, utilization or use as a tertiary injectant of such qualified carbon oxide. A tax equity structure to utilize the tax credit would likely involve the use of a federal income tax partnership between the tax equity investor and the developer. The partnership would own the carbon capture equipment and contract for the disposal of the carbon oxide.<sup>9</sup> The tax credits would accrue to the partnership and then be primarily allocated to the tax equity investor. This type of tax equity partnership structure is widely used in connection with other tax credits such as the Section 45 production tax credit for production of electricity from wind. The commercial issues associated with the use of these new CCS technologies and industrial processes will present some challenges for investors and will require careful structuring of the transactions.

In addition to the potential for tax equity investment in qualified facilities, the Budget Act provides for the transfer of the tax credit in limited circumstances. The Budget Act provides that the owner of the carbon capture equipment may elect to transfer the tax credit to the person that disposes of the qualified carbon oxide, utilizes the qualified carbon oxide in a qualified industrial use or uses the carbon oxide as a tertiary injectant. This provision does not provide for transferability to any tax credit investor but limits the transfer to the person that disposes of or utilizes the qualified carbon oxide. Presumably, the person that utilizes the carbon oxide and to whom the credit is transferred would compensate the owner of the carbon capture equipment for a portion of the value of the tax credit through the price paid for the carbon oxide. The Budget Act instructs the Treasury Department to provide rules for how this election operates.

Like the transfer provision, there are a number of provisions in the Budget Act that Congress either directs or invites the Treasury Department to clarify. We understand that Treasury and the Internal Revenue Service are actively working on guidance that will clarify many of the provisions. The guidance is likely to be issued in the form of published IRS guidance, such as an IRS notice. This method allows Treasury and the IRS to more efficiently produce guidance than through the issuance of regulations. The timing and scope of the guidance is still uncertain. Below are a few of the key provisions that may be addressed or clarified:

- *Secure Geological Storage*— To be eligible for the credit, carbon oxides must be placed in “secure geological storage.” Since its original enactment in 2008, Section 45Q has included a requirement that Treasury issue regulations defining the term, in consultation with the U.S. Environmental Protection Agency, the Department of Energy and the Department of Interior. The IRS issued guidance related to the term in 2009, but Treasury has never undertaken the public notice and comment process required to issued regulations. Treasury must eliminate confusion regarding this term by issuing regulations consistent with EPA regulations that are designed to apply to different types of facilities where carbon dioxide is injected — e.g., Class II underground injection control regulations together with Subpart UU greenhouse gas reporting for EOR operations, together with other greenhouse gas reporting subparts that apply to different portions of the process.

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- *Utilization* — The credit has been expanded to apply to “utilization” of carbon oxides for processes that would result in “fixation” of carbon oxides through “photosynthesis or chemosynthesis”; “chemical conversion” of carbon oxides into materials; and other purposes for which a commercial market exists, as determined by Treasury. Treasury will need to determine what those purposes are. Treasury will also need to determine how the life cycle analysis described below will apply to many of these potential industrial uses as a matter of measuring the amount of the captured carbon oxides to which the tax credit will apply.
- *Lifecycle Analysis* — For purposes of determining the amount of qualified carbon oxide “utilized” in the chemical conversion and industrial use of carbon oxide described above, the taxpayer will receive the credit based on the metric tons of carbon oxide that it can demonstrate is “captured and permanently isolated from the atmosphere” or “displaced from being emitted into the atmosphere” through a lifecycle emissions analysis. Treasury will need to determine the appropriate analysis in consultation with the secretary of the Department of Energy and the administrator of the EPA.
- *Recapture* — Congress specifically directed Treasury to determine by regulation when and how the credit should be recaptured from taxpayers if qualified carbon oxide “ceases to be captured, disposed of or used as a tertiary injectant” consistent with the Budget Act.
- *Beginning of Construction* — The credit applies to facilities that begin construction prior to Jan. 1, 2024. Taxpayers must know what is necessary to show that construction has begun prior to this date. The term “begun construction” has been defined in other parts of the code with respect to other tax credits, such as the Section 45 production tax credit for wind and other qualifying resources and the Section 48 tax credit for solar equipment. Similar rules would be expected to apply here, but Treasury must confirm application of the rules in the context of carbon capture.

CCS proponents have advocated for a suite of CCS incentives, including the enhanced Section 45Q credit, contracts for differences and eligibility for use of private activity bonds and master limited partnerships. However, the significant increase to the Section 45Q credit and the expansion of the credit for other commercial uses of the captured carbon are spurring project developers to take a renewed look at projects with CCS. Guidance from Treasury and the IRS on many of the technical issues will further spur potential use of the tax credit and CCS.

## Notes

<sup>1</sup> All section references are to the Internal Revenue Code unless otherwise provided.

<sup>2</sup> Section 41119 of the Bipartisan Budget Act of 2018, 115 P.L. 123 .

<sup>3</sup> We use the term “carbon capture and storage” to encompass scenarios in which captured CO<sub>2</sub> is put to economic use. This process is often referred to as “carbon capture, utilization and storage,” or “CCUS.”

<sup>4</sup> See <https://www.iea.org/topics/carbon-capture-and-storage/>, accessed Aug. 6, 2018.

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<sup>5</sup> Their bill, S. 1535, The Furthering carbon capture, Utilization, Technology, Underground storage, and Reduced Emissions Act (FUTURE Act), was included in Senate Finance Committee Chairperson Orrin Hatch's (R-UT) larger tax extenders bill, S. 2256, before finally gaining inclusion in H.R. 1892, the Bipartisan Budget Act of 2018.

<sup>6</sup> "EOR" is used here also to refer to enhanced natural gas recovery, which has been and will continue to be eligible for the Section 45Q credit.

<sup>7</sup> These indexed amounts reflect the most recent inflation adjustments as provided in Notice 2018-40, 2018-20 IRB 583 (May 11, 2018).

<sup>8</sup> Credit applied to EOR and enhanced natural gas recovery prior to enactment of the Budget Act. After enactment, the category has been expanded to cover sequestration through photosynthesis, chemosynthesis, chemical conversion into a material or chemical compound, or any other purpose for which a commercial market exists, as determined by the Secretary of Treasury.

<sup>9</sup> It is typical for such a tax equity partnership to be formed as a limited liability company for corporate and state law purposes. The limited liability company is characterized as a partnership for federal income tax purposes.

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