
Section 45Q Tax Credit for Carbon Capture 101

Fred Eames

Partner

Hunton Andrews Kurth LLP

David Lowman

Partner

Hunton Andrews Kurth LLP

The Bipartisan Budget Act of 2018

The Bipartisan Budget Act of 2018¹, enacted on February 9, 2018 (the Budget Act), significantly increased and extended the tax credit for the capture and storage of carbon oxides provided under Section 45Q² of the Internal Revenue Code.

This development, which has been a top priority of carbon capture, utilization, and storage (CCUS)³ supporters for several years, is expected to significantly boost deployment of CCUS across the United States and represents a potential opportunity for emitting companies, oil and gas companies and industrial users of carbon oxides.

¹ P.L. 115-123.

² All Section references are to the Code unless otherwise provided.

³ Acronym CCUS used to encompass capture and storage, irrespective of whether for productive use.

CCUS – Environmental and Energy Benefits

CCS in numbers

17 large-scale CCS facilities operating globally, four coming on stream in 2018



these 21 facilities have a CO₂ capture capacity of 37 million tonnes per annum (Mtpa)

The equivalent of 8 million cars removed from the road each year

220 million tonnes of man-made CO₂ has been injected deep underground to date

CCS is the only technology able to decarbonise the industrial sector

To reach the Paris 2°C target...

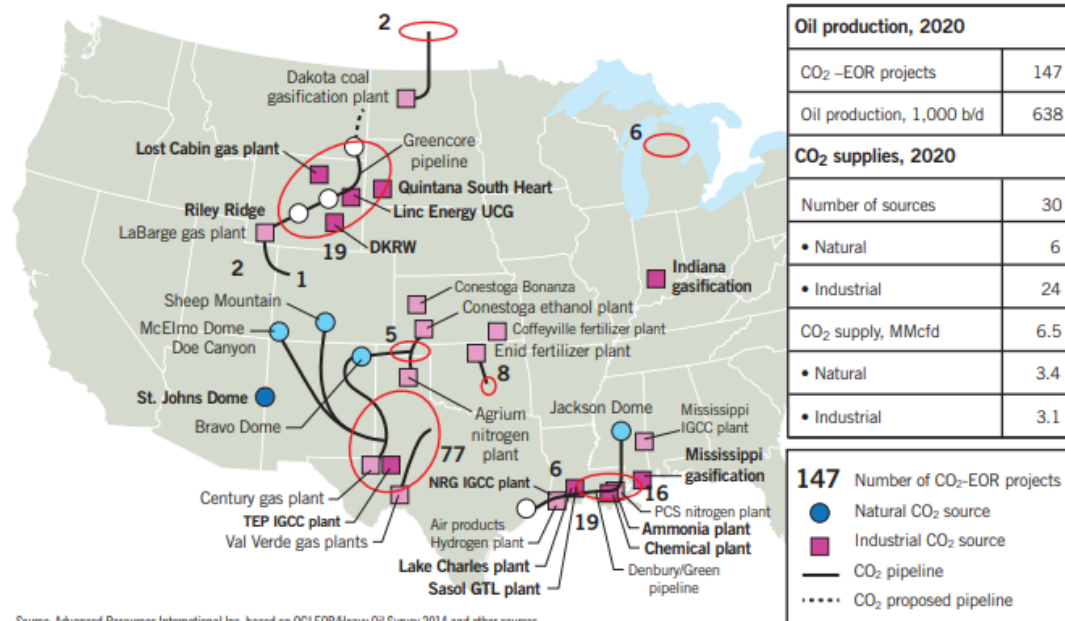
2,500

CCS facilities operating in 2040
(Based on a CCS facility with a CO₂ capture capacity of ~1.5 Mtpa)

14%

of cumulative emissions reductions must be derived from CCS

PROJECTED CO₂, EOR OPERATIONS, AND CO₂ SOURCES: 2020



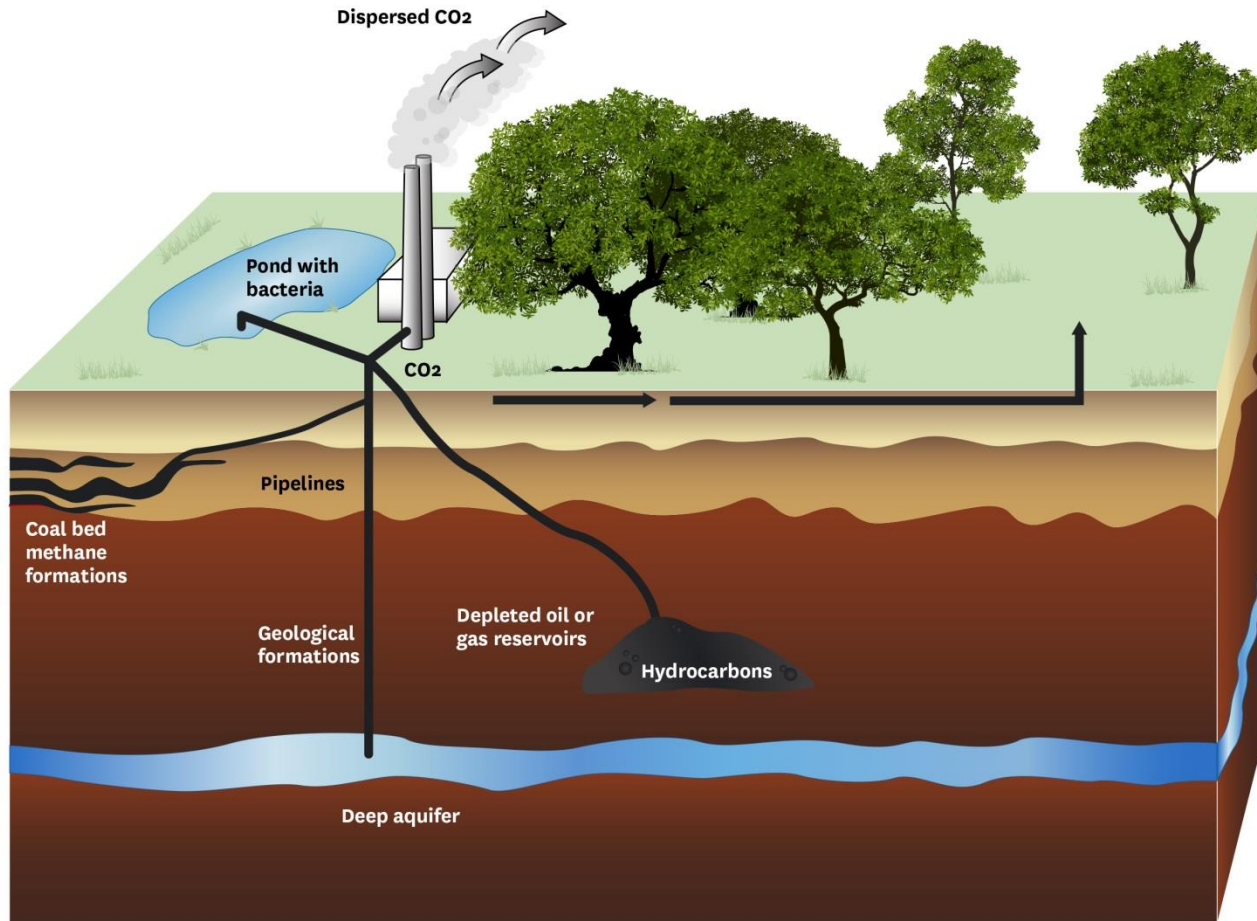
Source: Advanced Resources International Inc. based on OGI EOR/Heavy Oil Survey 2014 and other sources

Source: Global CCS Institute

Source: Advanced Resources International

- Interest in CCUS at a 10-year high. Factors:
 - Section 45Q tax credit increase, extension, enhancement
 - Has attracted strong interest from the financial sector in CCUS—arguably for the first time
 - Carbon management transitioning from a regulatory issue to a business practice issue
 - Steadily growing opportunities for productive storage of CO₂

Carbon Sequestration



Changes to Existing Law

- The Section 45Q tax credit was first enacted in 2008. The credit was established at \$10 per ton for CO₂ permanently stored and used as a tertiary injectant (i.e., for EOR) and \$20 per ton for CO₂ not used as a tertiary injectant and permanently stored in a secure geological formation.
- The theory behind the differentiated credit was that the market would pay for CO₂ for use in tertiary injection for EOR.
- Congress indexed the credit to inflation, and the credit currently stands at \$11.44/ton and \$22.87/ton⁴ for stored CO₂ 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 (February 9, 2018).

⁴ These indexed amounts reflect the most recent inflation adjustments as provided in Notice 2018-40, 2018-20 IRB 583 (May 11, 2018).

The Budget Act

- The Budget Act extends and substantially increases the credit for facilities placed in service on or after February 9, 2018.
- The Budget 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.
- The Budget Act 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 expands the “EOR credit” to carbon oxides used for other industrial purposes.

- Pre-Budget Act projects: limited to 75 million tons for all qualified projects
- Post-Budget Act projects: 12-year credit from the original placed in service date for projects that begin construction before January 1, 2024
- Minimum capture requirements apply, based on facility type (small facilities, EGUs, other (including direct air capture))
 - In the case of a facility which emits not more than 500,000 metric tons of CO₂, a minimum of 25,000 metric tons per year
 - In the case of an electric generating facility not emitting less than 500,000, a minimum of 500,000 metric tons per year
 - In the case of direct air capture or any facility not described above, a minimum of 100,000 metric tons per year

Credit Rates

	Pre-Budget Act Qualified Sequestration	Post-Budget Act Qualified Sequestration
EOR, Other Industrial Utilization ⁵	\$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 is placed in service
Sequestration	\$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 is placed in service

⁵ 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.

For projects placed in service after the enactment of the Budget Act, the term “qualified carbon oxide” means any carbon dioxide or other carbon oxide which--

- is captured from an industrial source by carbon capture equipment which is originally placed in service on or after the date of the enactment of the Budget Act,
- would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release, and
- is measured at the source of capture and verified at the point of disposal, injection, or utilization

- In order to qualify for the credit, the CO₂ must be:
 - used as a tertiary injectant,
 - permanently disposed of in secure geological storage, or
 - 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 which securely stores such carbon oxide and for any other industrial use for which a commercial market exists.

- For purposes of determining the amount of qualified carbon oxide “utilized” in the chemical conversion and industrial use of carbon oxide, 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 standard for lifecycle analysis in consultation with the Secretary of Energy and Administrator of the EPA.

Secure Geological Storage

- To be eligible for the credit, carbon oxides must be placed in “secure geological storage”
- The statute requires Treasury, in consultation with the EPA, DOE, and Department of the Interior, to establish regulations for determining adequate security measures for the geological storage of qualified carbon oxide such that the qualified carbon oxide does not escape into the atmosphere. Such term shall include storage at:
 - deep saline formations,
 - oil and gas reservoirs, and
 - unminable coal seams
- Treasury and the IRS currently are working on guidance that will apply to different types of facilities where CO₂ is injected

- Congress specifically directed Treasury to determine 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”
- An important issue will be the timeframe over which recapture might occur. This is a critical issue to attract investment. The industry has suggested that Treasury adopt rules which limit the period over which recapture of the credit would apply.

Qualified Facility and Carbon Capture Equipment

- The term "qualified facility" means any industrial facility or direct air capture facility--
 - the construction of which begins before January 1, 2024, and--
 - construction of carbon capture equipment begins before such date, or
 - the original planning and design for such facility includes installation of carbon capture equipment
- The “industrial facility” is the source of emission of CO₂. It can be an existing facility, such as an electric generating facility, ethanol plant, or fertilizer plant. Such facilities can be retrofitted with “carbon capture equipment.” In the case of a facility retrofitted with carbon capture equipment, it is the carbon capture equipment on which construction must begin before January 1, 2024.

Beginning of Construction

- The credit applies to facilities that include carbon capture equipment that begin construction prior to January 1, 2024.
- 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.
- Treasury and the IRS are working on guidance confirming application of the rules in the context of carbon capture.

- The credit is attributable to the person that 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.
- Owners of the emitting industrial facility or developers often will not have sufficient tax liability to realize the benefit of the tax credit. It is expected that the industry will need to attract investors that have the ability to fully realize the benefit of the tax credit. Such investors generally are referred to as “tax equity.”

- A tax equity structure to utilize the tax credit would likely involve the use of a federal income tax partnership⁶ 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
- The tax credits would accrue to the partnership and then be primarily allocated (99%) to the tax equity investor for the tax credit period, after which the tax equity investor's interest would flip down to 5%
- 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
- Treasury and the IRS are working on guidance that will provide guidelines for such tax equity structures

⁶ 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.

- 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.
- Monetization structures utilizing the transfer provision raise special tax issues that Treasury and the IRS will need to address through guidance.

Other “Incentives”

- PABs, MLPs, CfDs
- Price on carbon
 - SCC
 - Carbon tax
- Support for CCUS infrastructure
- Inclusion in State clean energy programs
 - CCUS in State RPS programs
 - California – Inclusion of CCUS in LCFS program
- Regulatory streamlining
 - USE IT Act

Section 45Q Tax Credit for Carbon Capture 101

Fred Eames
Partner
Hunton Andrews Kurth LLP
feames@HuntonAK.com
+1 202 778 2245

David Lowman
Partner
Hunton Andrews Kurth LLP
dlowman@HuntonAK.com
+1 202 419 2070