KPMG report: Final regulations on carbon oxide sequestration credit

January 15, 2021

Introduction

The U.S. Treasury Department and IRS released final regulations for the section 45Q carbon oxide sequestration credit, providing certainty for developers and investors on credit eligibility requirements.

The final regulations largely follow the proposed regulations with some, favorable changes, most notably the credit recapture period has been shortened from five years to three years.

There are still some areas that will likely require additional guidance, but these regulations will be welcomed by developers, investors, and other participants in the carbon capture value chain.

Read the **final regulations** [PDF 429 KB] (46 pages) as published in the Federal Register on January 15, 2021.

The following discussion includes an overview of the newly issued regulations and some initial observations.

Contents

Background

In 2018, as part of the Bipartisan Budget Act of 2018 (BBA 2018), Congress significantly enhanced the tax credit available for carbon oxide capture and sequestration.

Specifically, for carbon capture equipment originally placed in service at a qualified facility after February 9, 2018 (the effective date of BBA 2018), the credit rate in 2020 is $20.22 per metric ton of carbon oxide that is captured and used as a tertiary injectant, and the credit rate increases linearly to $35 per metric ton in 2026. The credit rate is adjusted for inflation thereafter.

For carbon oxide that is permanently stored but not used as a tertiary injectant, the credit rate in 2020 is $31.77 per metric ton, and increases linearly to $50 per metric ton in 2026. Similarly, the credit rate is adjusted for inflation thereafter.

Note that carbon oxide refers to carbon dioxide and carbon monoxide. As a practical matter, carbon dioxide is most commonly used as a tertiary injectant for enhanced oil recovery.[1] Carbon monoxide is likely to be permanently stored.

The credit is available for a 12-year period beginning with the date that the carbon capture equipment is placed in service. The credit is claimed by the taxpayer that owns the carbon oxide capture equipment and physically *or contractually* ensures the capture and disposal, injection, or utilization of such qualified carbon oxide. The rules also provide an election that allows the taxpayer that owns the carbon capture equipment to allocate the credit to the person that acquires the carbon oxide and physically undertakes geological storage, disposal, injection, or utilization of such qualified carbon oxide.

Under BBA 2018, in order to be eligible for the credit, a taxpayer must begin construction of a carbon capture equipment project prior to January 1, 2024. This deadline was extended in the Consolidated Appropriations Act of 2021 so that now taxpayers have until January 1, 2026, to begin construction.

Prior guidance

In February 2020, the IRS issued Notice 2020-12 providing guidance on when "construction begins" for purposes of §45Q, using rules similar to those applicable to wind and solar projects. Also, in February 2020, the IRS issued and Rev. Proc. 2020-12 which sets forth a safe harbor for tax equity partnerships that claim the section 45Q credit. The safe harbor in Rev. Proc. 2020-12 is similar to the safe harbor for wind production tax credit partnerships discussed in Rev. Proc. 2007-65.

Proposed regulations, issued June 20, 2020, provided long-awaited guidance on various aspects of the section 45Q credit, including definitions, rules for electing to pass the credit to other claimants, recapture period and computation rules, and basic procedures for taxpayers claiming the credit for utilization projects.

Final regulations

General credit provisions

Like the proposed regulations, the final regulations largely mirror the statute in stating the credit amounts available. The final regulations do, however, provide some clarifications and additional rules, as described below.

Aggregation

In order to qualify for the carbon oxide sequestration credit, taxpayers must capture and sequester a minimum amount of carbon oxide per tax year.

Facilities that acquire carbon oxide from the ambient air must capture and sequester at least 25,000 metric tons of qualified oxide during the tax year.

For qualified facilities other than electric generating facilities, taxpayers generally must capture and

[1] Note there is also a credit under section 43 for enhanced oil recovery investments. The credit is phased in or out based on the average price of oil for the year compared to an inflation adjusted reference price. The credit has been phased out for several years but will likely be available in 2021 based on 2020 domestic oil prices.

sequester 100,000 metric tons of carbon oxide per tax year. For electric generating facilities, taxpayers must capture and sequester at least 500,000 metric tons of carbon oxide per tax year. A lower threshold of 25,000 metric tons is available if the carbon oxide is:

- Fixated through photosynthesis or chemosynthesis, such as through growing algae or bacteria;
- Chemically converted to a material or chemical compound in which such carbon oxide is securely stored; or
- Used for any other purpose of which a commercial market exists, as determined by Treasury guidance.

In addition, taxpayers that owned carbon capture equipment that was placed in service prior to BBA 2018 may elect to claim the BBA 2018 credits as long as the facility captures at least 500,000 metric tons of carbon oxide in a tax year and did not claim the pre-BBA 2018 section 45Q credit.

Several commenters suggested that it should be permissible in some circumstances for taxpayers to aggregate capture amounts from multiple facilities to meet the various minimum capture requirements. The final regulations adopt this suggestion and incorporate the "single project" factors from Notice 2020-12. Factors indicating that multiple qualified facilities or units of carbon capture equipment are operated as part of a single project include, but are not limited to: (1) the units of carbon capture equipment are owned by the same legal entity; (2) the units of carbon capture equipment are commonly managed or operated; (3) the units of carbon capture equipment are operated under similar operations and maintenance protocols established by the owner of the equipment, considering differences attributable in resource utilization and expected use of captured carbon oxides; (4) the units of carbon capture equipment are constructed pursuant to a single plan for Front-End Engineering and Design (FEED) or other approaches for front-end planning (e.g., the Front-End Loading (FEL) approach); (5) the carbon oxide captured with the carbon capture equipment is transported, disposed of, utilized, or used as a tertiary injectant pursuant to a shared contract; (6) the units of carbon capture equipment were constructed pursuant to a single construction management contract; and (7) if construction of any unit of carbon capture equipment was debt financed, construction of all units of carbon capture equipment is financed pursuant to a single loan agreement.

KPMG observation

The incorporation of the aggregation rule is a welcome change and logically harmonizes the single-project concept from Notice 2020-12 with the regulations. This will be especially welcome to projects using smaller capture units, including the landfill industry, which advocated for this change in comments.

Annualization

The final regulations retain the rule from the proposed regulations providing for annualization for the first tax year in which carbon capture equipment is placed in service at a qualified facility. This rule allows taxpayers to satisfy the production threshold requirements discussed above on a pro rata basis. The final regulations go further than the proposed regulations in also allowing annualization for the last year of the 12-year credit period.

Contractual disposal arrangement

The credit may be claimed by the person that both owns the carbon capture equipment and physically *or contractually* ensures the capture and disposal, injection, or utilization of such qualified carbon oxide.

The proposed regulations provided some clarification as to what contractual terms would be necessary. The proposed regulations also provided that a taxpayer may enter into multiple contracts with multiple parties for the disposal, injection, or utilization of qualified carbon oxide.

Further, the proposed regulations required that the agreement between the parties be a binding written contract and a contract is binding only if it is enforceable under state law and does not limit damages to a specified amount.

Many commenters noted that the definition of binding written contract in the proposed regulations as it related to liquidated damages did not seem to fully incorporate the binding contract requirements in Notice 2020-12 and elsewhere in the Code. In response, the final regulations make the written binding contract definition consistent by providing that a contractual provision that limits damages to an amount equal to at least 5% of the total contract price will not be treated as limiting damages to a specified amount.

Additionally, the final regulations provide that a taxpayer may enter into a binding written contract with a general contractor that hires subcontractors to physically carry out the capture, disposal, injection, or utilization of the qualified carbon oxide. The final regulations also permit multiple binding written contracts.

Each contract, along with the parties thereto, must be reported to the IRS annually, on a Form 8933, by each party to the contract. In addition to the information required by Form 8933, taxpayers must also include four pieces of additional information:

- Name and taxpayer identification number (TIN) of the taxpayer to whom the credit is attributable;
- Name and TIN of each party with whom the taxpayer has entered into a contract to ensure the disposal, injection, or utilization of qualified carbon oxide;
- Number of metric tons of qualified carbon oxide each contracting party disposes of, injects, or utilizes on behalf of the contracting taxpayer each tax year; and
- Special Environmental Protection Agency (EPA) information if there is disposal in secure geological storage or the use of qualified carbon oxide as a tertiary injectant in enhanced oil or natural gas recovery.

It should be noted that the final regulations provide that the failure of the taxpayer claiming the credit to satisfy this reporting requirement in a tax year will result in the inability of that taxpayer to claim the credit with respect to any qualified carbon oxide that is disposed of, injected, or utilized in that tax year pursuant to that particular contract.

Election

Under the statute the owner of carbon capture equipment may elect to allocate the section 45Q credit to the person that contractually ensures the capture and disposal, injection, or utilization of such qualified carbon oxide.

Similar to the proposed regulations, the final regulations provide that the election to allocate the credit to the person that contractually ensures the capture and disposal, injection, or utilization of such qualified carbon oxide, can be made annually and that the taxpayer can elect to allocate only a portion of the credit to the counterparty. Further, the taxpayer can allocate the credit to multiple counterparties if more than one person is disposing of or utilizing the carbon oxide.

The final regulations, in response to comments about the availability of the credit to subcontractors and/or other participants in the value chain, provide that only the disposer, injector, or utilizer that enters into the contract with the electing taxpayer for the disposal, injection, or utilization of the electing taxpayer's qualified carbon oxide is the party that may qualify as a credit claimant. If such disposer, injector, or utilizer enters into a subcontract with a third party to carry out the disposal, injection, or utilization, then the subcontractor may not be a credit claimant.

Both an electing taxpayer and a credit claimant are required to include a Form 8933 with its timely filed federal income tax return or Form 1065 (including extensions) as applicable. The proposed regulations required an electing taxpayer to provide each credit claimant with a copy of the electing taxpayer's Form 8933, and that each credit claimant attach that copy of the electing taxpayer's Form 8933 to its own Form 8933. The final regulations follow those procedures and further provide that if the taxpayer claiming the section 45Q credit fails to satisfy the reporting requirements, then that taxpayer may not claim the section 45Q credit. The final regulations provide that the election must be made on an annual basis no later than the time prescribed by law (including extensions) for filing the federal income tax return and may not be made on an amended federal income tax return. An exception to the amended return prohibition is provided for tax years ending after February 9, 2018, but not for tax years beginning after January 13, 2021 (the effective date of the final regulations).

KPMG observation

In the contractual disposal and election to allocate contexts, taxpayers should take care to document these contractual arrangements and election attachments carefully, especially in cases when taxpayers contract with multiple counterparties and potentially contract with different counterparties in each year.

Definitions

Carbon capture equipment

Section 45Q does not define carbon capture equipment. The proposed regulations provided that in general, carbon capture equipment includes all components of property that are used to capture or process carbon oxide until the carbon oxide is transported for disposal, injection, or utilization. Further, the proposed regulations listed specific uses for the equipment, as well as items that are included in, or excluded from, the definition of carbon capture equipment.

In response to comments, the final regulations provide that carbon capture equipment generally includes all components of property that are used to capture or process carbon oxide until the carbon oxide is transported for disposal, injection, or utilization, but the final regulations remove the list of qualifying carbon capture components and the excluded components. Further, the final regulations provide that carbon capture equipment generally does not include components of property used for transporting qualified carbon oxide for disposal, injection, or utilization. However, the final regulations provide that carbon capture equipment includes a system of gathering and distribution lines that collect carbon oxide captured from a qualified facility or multiple qualified facilities that constitute a single project (as described in Notice 2020-12).

The final regulations clarify that all components that make up an independently functioning process train capable of capturing, processing, and preparing carbon oxide for transport should be treated as one unit of carbon capture equipment.

80/20 rule

The proposed regulations included an "80/20 rule," which allow a qualified facility or carbon capture equipment to qualify as originally placed in service even though it contains some used components of property, if the fair market value of the used components of property is not more than 20% of the total value of the qualified facility or carbon capture equipment. For purposes of the 80/20 rule, the cost of a new qualified facility or carbon capture equipment includes all properly capitalized costs of the new qualified facility or carbon capture equipment. The proposed regulations also allowed taxpayers to elect to include the cost of new equipment for a pipeline owned and exclusively used by that taxpayer to transport carbon oxides captured from that taxpayer's qualified facility.

The 80/20 rule has long been used to determine eligibility of used property for other energy tax credits. And the IRS and Treasury have been reluctant in these other contexts to expand upon or provide additional guidance relating to 80/20 eligibility. Despite numerous questions from commenters, especially with respect to valuation, the IRS and Treasury largely declined to provide any additional guidance on the 80/20 rule for purposes of section 45Q and instead refer taxpayers back to Rev. Rul. 94-31, the guidance where the rule was first articulated.

KPMG observation

The application of the 80/20 rule to section 45Q is an area in need of additional study and will likely continue to generate interest and questions. In particular, taxpayers want to be able to rely on the 80/20 rule to access the higher BBA 2018 credit rates.

Qualified facility

The section 45Q credit is available to taxpayers that either capture carbon oxide from the ambient air or capture it from an "industrial facility."

Section 45Q does not define the term "industrial facility." The proposed regulations adopted the definition of industrial facility used in Notice 2020-12, which provides that an "industrial facility" is a facility that produces a carbon oxide stream from a fuel combustion source, a manufacturing process, or a fugitive carbon oxide-emission source that, absent capture and disposal, injection, or utilization, would otherwise be released into the atmosphere. Under the proposed regulations, an industrial facility did not include a facility that produces carbon dioxide from carbon dioxide production wells at natural carbon dioxide-bearing formations or at naturally occurring subsurface springs. The proposed regulations further provided a safe harbor under which a deposit of natural gas that contains less than 10% carbon dioxide by volume is not a natural carbon dioxide-bearing formation (10% safe harbor). For other deposits, whether a well is producing from a natural carbon dioxide-bearing formation is based on all the facts and circumstances.

Commenters sought clarification and revisions to the 10% safe harbor, generally noting that it was too low of a threshold and did not account for the different types of formations and processes. The final regulations replace the facts-and-circumstances standard and the 10% safe harbor in the proposed regulations and adopt a greater-than-90% test. In other words, the definition of "industrial facility" excludes carbon dioxide production wells at natural carbon dioxide-bearing formations, or at naturally occurring subsurface springs, with greater than 90% carbon dioxide by volume.

Secure geological storage

Under the proposed regulations, when a carbon oxide is used as a tertiary injectant for purposes of Enhanced Oil Recovery (EOR), operators are permitted to comply with International Organization for Standardization (ISO) rules known as "CSI/ANSI ISO 27916:19" in order to demonstrate secure geological storage. Previous IRS rules and Form 8933 instructions required EOR operators to report under EPA rules (so-called Subpart RR) in order to demonstrate secure geological storage for section 45Q eligibility. Compliance with Subpart RR in the EOR context was viewed by many as overly burdensome, as it was beyond what was required even for EPA well classification permitting purposes.

Under the proposed regulations, projects that stored the carbon oxide permanently must continue to report under Subpart RR to demonstrate secure geological storage.

The availability of ISO reporting for EOR was largely well received, although some commenters asked for Treasury and the IRS to compel more public reporting and transparency.

The final regulations adopt the proposed rules on secure storage without major changes. While the preamble to the final regulations notes the importance of transparency and accountability, it states that there is no statutory authority for requiring public reporting.

Recapture

The carbon oxide sequestration credit is recaptured if carbon oxide for which a credit has been claimed ceases to be captured, disposed of, or used as a tertiary injectant. Recapture events are determined separately for each project involving capture, disposal or use of qualified carbon oxide as a tertiary injectant.

Recapture period

The proposed regulation provided a five-year recapture period. In response to comments received, the final regulations shorten the recapture period to three years. The three-year recapture period begins on the date of the first injection of qualified carbon oxide for disposal in secure geological storage or use as a tertiary injectant on which the section 45Q credit was claimed and ends the earlier of:

- Three years after the last tax year in which the taxpayer claimed a section 45Q credit, or
- The date monitoring ends under the requirements of the Subpart RR standard or the ISO standard, whichever is applicable to the taxpayer.

Thus, recapture is required if carbon oxide leaks into the atmosphere during the recapture period, but a leakage of carbon oxide that occurs after the recapture period would not lead to recapture of credits.

KPMG observation

In requesting a shorter recapture period, many commenters argued that there is no evidence supporting a five-year period. And commenters further described how a longer recapture period introduced more risk for investors, negatively impacting the economics of developing these projects. A three-year recapture period will hopefully mitigate these concerns and help reduce barriers for investors.

Computation of recapture

The proposed regulations provided a framework for computing the recapture amount, which is adopted into the final regulations. In general, the amount of recaptured carbon oxide is equal to the amount by which the leaked amount of carbon oxide, in metric tons, in a given tax year, exceeds the amount of qualified carbon oxide disposed of in secure geological storage or used as a tertiary injectant in the tax year. Thus, if the leaked amount of carbon oxide does not exceed the amount of carbon oxide disposed of in secure geological storage or used as a tertiary injectant in the relevant tax year, there is no recapture amount and no further adjustments to prior tax years are needed.

The recapture amount is equal to the product of the quantity of recaptured carbon oxide (in metric tons) and the appropriate credit rate.

Recapture amounts are calculated on a last-in-first-out basis (LIFO), meaning that to the extent there is recapture in a particular year, such recapture will be deemed attributable first to the prior tax year, then to the tax year before that, and then up to a maximum of the third preceding year.

A recapture event includes the intentional removal of carbon oxide from secure geological storage; however, the final regulations provide a helpful clarification related to use of the recycled carbon oxide in EOR operations. Specifically, the final regulations state that if a taxpayer removes qualified carbon oxide from an EOR project and reinjects into the same project, that intentional removal will not trigger a recapture event. However, if the qualified carbon oxide is instead injected into a different project, such removal is a recapture event.

KPMG observation

The guidance on recycled carbon oxide is a helpful and welcome clarification. The proposed regulations were silent on this point creating uncertainty around a common practice in EOR. If recapture applied in this context it would have resulted in frequent recapture events adding complications and burdens to the compliance process.

Utilization

Section 45Q credits are available for the "utilization of qualified carbon oxide." For this purpose "utilization" means (i) the fixation of such qualified carbon oxide through photosynthesis or chemosynthesis, such as through the growing of algae or bacteria; (ii) the chemical conversion of such qualified carbon oxide to a material or chemical compound in which such qualified carbon oxide is securely stored; or (iii) the use of such qualified carbon oxide for any other purpose for which a commercial market exists (with the exception of use as a tertiary injectant in EOR), as determined by Treasury.

Life cycle analysis

The amount of qualified carbon oxide utilized by the taxpayer is equal to the metric tons of qualified carbon oxide which the taxpayer demonstrates, based upon a lifecycle analysis (LCA) of greenhouse gas emissions, were (i) captured and permanently isolated from the atmosphere, or (ii) displaced from being emitted into the atmosphere.

The term "lifecycle greenhouse gas emissions" means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), related to the full product lifecycle, including all stages of product and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished product to the ultimate consumer, when the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

Commenters requested clarity on the basis on which section 45Q credits could be claimed. It was suggested by some that because the LCA provides an analysis of overall greenhouse gas reduction achieved by a product or process that the credit could be based on utilization of both carbon oxide and non-carbon oxide greenhouse gases.

The final regulations reject this approach as contrary to the statute. The final regulations state that the section 45Q credit is based only on qualified carbon oxide captured and utilized.

KPMG observation

There is still some uncertainty on how to use the measurements and outputs of the LCA and the regulations do not provide examples. As these projects ramp up and experience with LCAs increases, expect additional questions and ultimately additional guidance.

Submission process

The proposed regulations provided a high-level framework for LCA preparation and submission and approval, including requiring taxpayers to submit LCAs to the IRS and Department of Energy (DOE) prior to claiming section 45Q credits.

Consistent with the proposed regulations, the final regulations continue to require a taxpayer to submit an LCA report to the IRS and the DOE prior to claiming credits. The LCA will be subject to a technical review by the DOE, and the IRS, in consultation with the DOE and the EPA, will determine whether to approve the LCA. The final regulations decline to provide more detail on the process, such as how long a review will take, and note that additional guidance will be needed.

KPMG observation

The timing of the review will matter. Although the final regulations did not adopt this suggestion, many commenters requested the ability to claim the credits while the IRS and DOE review is pending, noting that an uncertain delay could create problems with tax return filing deadlines.

Definition of commercial market

As noted above, the statute provides a catch-all category for claiming the credit for utilization for any other purpose for which a commercial market exists; however, the proposed regulations did not describe or define what a commercial market is for this purpose. Commenters requested explicit inclusion of various industries such as fuels, food and beverage, and all developing technologies.

The final regulations provide only a very broad definition of commercial market and do not provide a list of categories. The final regulations do, however, include a requirement for a taxpayer to submit a statement attached to its Form 8933 substantiating that a commercial market exists for its particular product, process, or service. The final regulations further indicate that updated instructions to the form or additional guidance would provide more detail.

Effective date and applicability

The final regulations apply to tax years beginning on or after January 13, 2021. Taxpayers may choose to apply the final regulations before then, provided they are applied in their entirety and consistently for tax years beginning after January 1, 2018, and before January 13, 2021

Summary and what's next

The final regulations provide welcome and thorough rules related to section 45Q. Treasury and IRS made many helpful clarifications and modifications, including aggregation rules and a shorter recapture period. Hopefully, the final regulations will provide enough certainty to help move projects forward. That said, there are still open questions, particularly in the utilization context. Additionally, it is not yet clear that the traditional tax equity investor market has become comfortable with section 45Q investments, but these final regulations, including the shortened recapture period, are certainly a helpful step forward.

Finally, there have been recent legislative proposals to modify the section 45Q credit, including adding a direct pay option, so it will be necessary to keep an eye on a new Congress and new administration for legislative and administrative developments in this space.

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