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### IRS Releases Section 45Q Proposed Regulations For Carbon Capture Projects

June 5, 2020

#### Highlights

The proposed carbon capture regulations provide detailed rules and clarity on the following issues:

- Standards for contracting with third parties to dispose of, inject or utilize the captured carbon oxide
- Standards and reporting obligations for complying with Secure Geological Storage requirement
- Utilization of carbon oxide established by lifecycle analysis
- Flexible rules for transferring all or a portion of the Section 45Q credit to the party or parties disposing of the captured carbon oxide
- Adoption of 80/20 rule allowing use of some used equipment
- Five-year tax credit recapture period

On May 28, 2020, the U.S. Department of the Treasury issued

long-awaited [proposed regulations](#) under Section 45Q of the Internal Revenue Code of 1986, as amended, providing guidance on how taxpayers may qualify for tax credits with respect to carbon capture projects. In general, the proposed regulations provide much needed clarity regarding carbon oxide capture, use and sequestration and will encourage new investment in carbon capture projects.

Earlier this year, the IRS issued guidance regarding 1) the beginning of construction requirement for carbon capture projects ([Notice 2020-12](#)), which is similar to guidance determining when construction begins for wind and solar projects, and 2) safe harbor requirements for allocating the Section 45Q tax credit involving partnership flip structures for carbon capture projects ([Rev. Proc. 2020-12](#)), which is similar to guidance issued for wind energy partnerships.

Taxpayers may submit comments on the proposed regulations during the 60-day period following publication of the proposed regulations in the Federal Register.

Congress originally enacted Section 45Q in 2008 to provide a tax credit for the capture and sequestration of carbon dioxide, and then increased and greatly expanded the Section 45Q tax credit pursuant to the Bipartisan Budget Act of 2018 (BBA), effective of Feb. 9, 2018.

The BBA made significant changes to Section 45Q by:

## Increasing the credit amount

- Expanding the credit to apply to the capture of carbon oxide and carbon dioxide
- Allowing the credit over a 12-year period
- Eliminating the industry-wide cap of 75 million metric tons
- Reducing the minimum carbon capture thresholds for qualified facilities
- Allowing more methods to dispose of the captured qualified carbon oxide
- Providing for transferability of the credit

Section 45Q distinguishes between a qualified facility placed in service prior to Feb. 9, 2018, (which has lower tax credit rate and is subject to the 75 million metric ton cap), and carbon capture equipment placed in service at a qualified facility after Feb. 9, 2018.

## Tax Credit Amount

As amended by the BBA, Section 45Q generally allows a tax credit for each metric ton of qualified carbon oxide (which includes carbon dioxide and carbon oxide) captured using carbon capture equipment that is placed in service at a qualified facility on or after Feb. 9, 2018.

A taxpayer can realize Section 45Q tax credits during the 12-year period after the carbon capture equipment is placed in service at a qualified facility. The amount of the Section 45Q tax credit will depend on a)

whether the taxpayer captures qualified carbon oxide using carbon capture equipment originally placed in service at a qualified facility before Feb. 9, 2018, or on or after Feb. 9, 2018 and b) how the taxpayer disposes of the qualified carbon oxide, as follows:

- Disposal of qualified carbon oxide in a secure geological storage (Disposal Method) without using it as a tertiary injectant in a qualified enhanced oil or natural gas recovery project (EOR Project),
- Use of qualified carbon oxide as a tertiary injectant in a EOR Project and then disposition in a secure geological storage (Injection Method), or
- Fixation of qualified carbon oxide through photosynthesis or chemosynthesis, such as growing algae or bacteria, chemical conversion of qualified carbon oxide into a material or chemical compound, or use of the qualified carbon oxide for any other purpose for which a commercial market exists as determined by the Treasury (Utilization Method)

The table below shows the amount of the applicable tax credit based on the foregoing situations:

Placed in Service Date/ Disposition Method	Disposal Method	Injection or Utilization Method
Placed in service <i>before</i> Feb 9, 2018	\$23.40 per metric ton for 2019 calendar year*	\$11.70 per metric ton for 2019 calendar year*
Placed in service <i>on or after</i> Feb 9, 2018	\$31.77 per metric ton for 2020 calendar year and increasing linearly to \$50 per metric ton for 2026 calendar year**	\$20.22 per metric ton for 2020 calendar year and increasing linearly to \$35 per metric ton for 2026 calendar year**

\* Credit amount is adjusted annually for inflation. The 2020 rate has not yet been published. These tax credit amounts are referred to as the “Prior Tax Credit Amounts” for purposes of this summary.

\*\* Credit amount will adjusted annually for inflation after 2026. These tax credit amounts are referred to as the “New Tax Credit Amounts” for purposes of this summary.

**Additional Versus New Carbon Capture Equipment**

A taxpayer that placed carbon capture equipment in service before the Feb. 9, 2018, is generally entitled to the Prior Tax Credit Amounts based on the metric tons of carbon dioxide captured. In addition, if a taxpayer places additional carbon capture equipment in service after the effective date at the same facility, then the taxpayer may also qualify for the New Tax Credit Amounts on the qualified carbon oxide captured with the new carbon capture equipment.

Specifically, the proposed regulations provide that the Prior Tax Credit

Amount will equal the lesser of the: i) total amount of qualified carbon oxide captured at the facility for such tax year, or ii) total amount of the carbon dioxide capture capacity of the carbon capture equipment in service prior to Feb. 9, 2018. Also, the Prior Tax Credit Amount will be subject to the 75 million industry-wide metric ton cap.

The New Tax Credit Amount will equal the excess of the total amount of qualified carbon oxide captured at the facility for such tax year over the total amount of carbon dioxide capture capacity of the carbon capture equipment in service on Feb. 8, 2018. The New Tax Credit Amount is not subject to the 75 million industry-wide metric ton cap.

For this purpose, the proposed regulations provide that a physical modification or addition to the equipment that results in an increase in the carbon dioxide capture capacity of existing carbon capture equipment constitutes an installation of additional carbon capture equipment.

However, merely increasing the amount of carbon dioxide captured by existing equipment, even if operated above the carbon dioxide capture capacity, does not constitute the installation of additional carbon capture equipment.

In addition, if the cost of the physical modification or equipment satisfies the 80/20 rule (i.e., the fair market value of the used equipment may not exceed 20 percent of the total value of the equipment, including the cost of new equipment and value of old equipment), then the additional equipment will constitute the installation of new carbon capture equipment rather than the installation of additional carbon capture equipment.

As a result, the New Tax Credit Amount will apply to the qualified carbon oxide captured with the new carbon capture equipment and will not be subject to the 75 million industry-wide metric ton cap.

## **Taxpayer Eligible for Section 45Q Tax Credit**

For carbon capture equipment placed in service before Feb. 9, 2018, the taxpayer that i) captures and ii) physically or contractually ensures the disposal, injection or utilization of the qualified carbon oxide qualifies for the Section 45Q tax credit.

For carbon capture equipment placed in service on or after that date, the taxpayer that i) owns the carbon capture equipment and ii) physically or contractually ensures the capture and disposal, injection or utilization of such qualified carbon oxide qualifies for the Section 45Q tax credit.

As a result of the BBA amendment to Section 45Q, the eligible taxpayer may claim the tax credit if they own the carbon capture equipment installed at a qualified facility that is owned by another party.

The person eligible for the Section 45Q tax credit must claim the credit on IRS Form 8933 (or any successor form) filed with the person's federal income tax return, or IRS Form 1065 for each taxable year for which the person is eligible for the Section 45Q tax credit.

## **Contracting for Capture, Disposal, Injection and Utilization**

An eligible taxpayer is not required to physically carry out the disposal,

injection or utilization of the qualified carbon oxide if the taxpayer enters into a binding written contract with one or more parties to carry out the disposal, injection or utilization of the qualified carbon oxide.

For this purpose, the proposed regulations provide that a written contract is binding only if the contract is enforceable under state law against both the taxpayer and the other party and the contract does not limit damages. In addition, the contract must:

- Include commercially reasonable terms and provide for the enforcement of the party's obligation to perform the disposal, injection or utilization of the qualified carbon oxide
- In the case of the Disposal Method or the Injection Method, require the disposing party to comply with the geological storage requirements (as set forth in Prop. Treas. Reg. Section 1.45Q-3 and described below) and notify the taxpayer of any leakage that could trigger a tax credit recapture
- In the case of the Utilization Method, require the disposing party to comply with Prop Treas. Reg. Section 1.45Q-4 for the utilization of qualified carbon oxide (as described below)

Also, the contract may (but is not required to) include:

- Long-term liability, indemnity or liquidated damages provisions or penalties for breach of contract
- Quantity of metric tons of qualified carbon oxide the parties agree to dispose, inject or utilize
- Minimum quantities to be disposed of, injected or utilized

## **Election to Transfer Section 45Q Tax Credit**

Code Section 45Q(f)(3)(B) allows an eligible taxpayer to make an election to transfer the Section 45Q tax credit to the party that disposes, injects or utilizes the qualified carbon oxide. The proposed regulations provide flexible rules for this election, which is made on an annual basis.

The eligible taxpayer may elect to transfer all or partial amount of the tax credits arising in a taxable year to one or more disposing parties. For multiple disposing parties, then the maximum amount of Section 45Q tax credits allowable to each claimant is proportional to the amount of qualified carbon oxide disposed of, injected or utilized by each party.

## **Carbon Capture Equipment**

The proposed 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. Carbon capture equipment includes components necessary to compress, treat, process, liquefy, pump or perform some other physical action to capture the qualified carbon oxide. Specifically, the carbon capture equipment is equipment used for the purpose of:

- Separating, purifying, drying and/or capturing carbon oxide that would otherwise be released into the atmosphere
- Removing carbon oxide from the atmosphere via direct air capture
- Compressing or otherwise increasing the pressure on carbon oxide

Carbon capture equipment does not include pipelines, branch lines, or land and marine vessels used for transporting captured carbon oxide for disposal, injection or utilization.

However, a gathering and distribution system that collects carbon oxide captured from a qualified facility or multiple facilities that constitute a single project (as described in Section 8.01 of Notice 2020-12) for the purpose of transporting the carbon oxide away from the qualified facility or single project to a pipeline used to transport carbon oxide from multiple taxpayers or project does constitute carbon capture equipment.

## Qualified Facility

A qualified facility means any industrial facility, electricity generating facility or direct air capture facility if:

- The construction of such facility begins before Jan. 1, 2024 (the rules for determining the beginning of construction are set forth in IRS Notice 2020-12, as referenced above)
- Either the construction of the carbon capture equipment begins before that date or the original planning and design for the qualified facility includes installation of carbon capture equipment
- The carbon capture equipment placed in service at the qualified facility captures the requisite minimum thresholds of qualified carbon oxide as described below.

A qualified facility must annually capture: i) in the case of a facility (other than a direct air capture facility) that emits not more than 500,000 metric tons of carbon oxide in the atmosphere during a taxable year, at least 25,000 metric tons of qualified carbon oxide and dispose of the carbon oxide by the Utilization Method; ii) in the case of an electricity generation facility (and not described in clause i) above), not less than 500,000 metric tons of qualified carbon oxide, and iii) in the case of any direct air capture facility or other facility not described in clauses i) or ii) above, at least 100,000 metric tons of qualified carbon oxide.

For the year in which the carbon capture equipment is placed in service at a qualified facility, the proposed regulations permit the annualization of the amount of qualified carbon oxide emitted and captured to determine if the foregoing threshold requirements are satisfied. The annualization calculation is made by i) dividing the amount of qualified carbon oxide emitted or captured by the number of days in the tax year beginning with the date on which the carbon capture equipment is placed in service at the qualified facility and ending on last day of the taxable year, and ii) multiplying such amount by 365. However, the taxpayer must calculate

the Section 45Q tax credit based on the actual amounts of carbon oxide captured and disposed of, injected or utilized during that taxable year.

## **80/20 Rule**

The proposed regulations provide that a qualified facility or carbon capture equipment may qualify as originally placed in service if such facility or equipment contains up to 20 percent of used components (80/20 Rule).

Under the 80/20 Rule, the fair market value of the used components may not exceed 20 percent of the qualified facility's or carbon capture equipment's total value (i.e., the cost of the new components must equal or exceed four times the value of the used components). Solely for purposes of the 80/20 rule, properly capitalized costs of a new qualified facility or carbon capture equipment may 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 that would otherwise be emitted into the atmosphere.

## **Requirements for Secure Geological Storage**

Taxpayers claiming the Section 45Q tax credit based on the Disposal Method or the Injection Method must show the qualified carbon oxide was disposed in a secure geological storage so that the qualified carbon oxide does not escape into the atmosphere. Secure geological storage includes storage at deep saline formations, oil and gas reservoirs and unminable coal seams.

For both the Disposal Method and Injection Method, either the taxpayer or its contracted disposing party must i) comply with the applicable Underground Injection Control (UIC) regulations onshore or offshore under submerged lands within the territorial jurisdiction of the United States, and ii) obtain the appropriate UIC permits, which is a Class VI permit for the Disposal Method and a Class II permit for the Injection Method with an EOR project.

For the Disposal Method, a taxpayer (or its contracted disposing party) also must store the qualified carbon oxide in compliance with the applicable requirements under 40 CFR Part 98 Subpart RR (i.e., the EPA's Greenhouse Gas Reporting Program (GHGRP)). Under Subpart RR, taxpayers are required to report basic information on qualified carbon oxides received for injection, develop and implement an EPA-approved site-specific monitoring, reporting and verification plan (MRV Plan), and report the amount of qualified carbon oxide geologically sequestered using a mass balance approach and annual monitoring activities.

For the Injection Method, a taxpayer (or its contracted disposing party) may comply with either i) Subpart RR of the GHGRP or ii) the International Organization of Standardization (ISO) standards endorsed by the American National Standards Institute (ANSI) under CSA/ANSI ISO 27916:19 (Carbon dioxide capture, transportation and geological storage – Carbon dioxide storage using enhanced oil recovery).

Both Subpart RR and CSA/ANSI ISO 27916:19 require an assessment and monitoring of potential leakage pathways; quantification of inputs, losses and storage through a mass balance approach; and

documentation of steps and approaches. Operators of UIC Class II wells that follow the CSA/ANSI ISO 27916:19 standard could elect to report to the EPA's GHGRP under Subpart RR or under Subpart UU.

Taxpayers must report and certify the metric tons of qualified carbon oxide disposed in a secure geological storage on IRS Form 8933. For EOR projects where the taxpayer complies with Subpart RR of the GHGRP, the taxpayer may self-certify the metric tons of qualified carbon oxide claimed for purposes of Section 45Q.

For EOR projects where the taxpayer complies with CSA/ANSI ISO 27916:19, a taxpayer may prepare the documentation as outlined in CSA/ANSI ISO 27916:19 internally, but such documentation must be provided to a qualified independent engineer or geologist, who then must certify that the documentation provided, including the mass balance calculations as well as information regarding monitoring and containment assurance is accurate and complete.

## **Utilization of Qualified Carbon Oxide**

Section 45Q(f)(5)(A) provides that "utilization of qualified carbon oxide" means i) the fixation of such qualified carbon oxide through photosynthesis or chemosynthesis, such as growing of algae or bacteria, ii) the chemical conversion of such qualified carbon oxide to a material or chemical component 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 exist (with the exception of an EOR project) as determined by the Secretary of Treasury.

For purposes of determining the amount of qualified carbon oxide utilized, a taxpayer must establish, based upon an analysis of lifecycle greenhouse gas emissions (LCA), the number of metric tons that were i) captured and permanently isolated from the atmosphere, or ii) displaced from being emitted into the atmosphere through one of the utilization processes described above.

The term "lifecycle greenhouse gas emissions" means the aggregate quantity of greenhouse gas emissions (including direct 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, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential according to Table A-1 of 40 CFR Part 98 Subpart A.

A taxpayer measures the amount of carbon oxide captured and utilized through a combination of direct measurement and LCA. A LCA report must be performed by or verified by an independent third party, and such report must be consistent with ISO 14044:2006 (Environmental management – Lifecycle assessment – Requirements and Guidelines). The taxpayer must submit the LCA report to the IRS and Department of Energy (DOE).

The DOE will perform a technical review of the LCA report, and then the IRS, in consultation with the DOE and EPA, will determine whether to approve the LCA report.

In the Preamble to the proposed regulations, the Treasury Department



and IRS request comments on how to achieve consistency in boundaries and baselines so that similarly situated taxpayers will be treated consistently. Also, the Treasury Department and IRs are willing to consider issuing guidance on particular fact patterns. The proposed regulations do not define commercial markets or provide for Standards of Lifecycle Analysis and are studying these issues further.

## **Recapture**

Section 1.45Q-5 of the proposed regulations addresses recapture events. In general, a recapture event occurs when the qualified carbon oxide ceases to be captured, disposed of, or used as a tertiary injectant during the recapture period. This recapture event occurs if the leaked amount of qualified carbon oxide (in metric tons) exceeds the amount of qualified carbon oxide (in metric tons) disposed of pursuant to the Injection Method in that same taxable year. The taxpayer must quantify the metric tons of qualified carbon oxide that has leaked into the atmosphere pursuant to the requirements of Subpart RR or CSA/ANSI ISO 27916:19. For EOR projects complying with CSA/ANSI ISO 27916:19, a qualified independent engineer or geologist must certify the quantity of the leaked amount.

The recapture period begins on the date of the first injection of qualified carbon oxide under the Injection Method and ends on the earlier of: i) five years after the last taxable year in which the taxpayer claimed the Section 45Q tax credit, or ii) the date monitoring ends under Subpart RR or CSA/ANSI ISO 27916:19, as the case may be.

The recapture amount must be taken into account in the taxable year in which the leak is identified and reported.

If the leaked amount of qualified carbon oxide does not exceed the amount of qualified carbon oxide disposed of under the Injection Method, then there is no recapture amount. Instead, the taxpayer must claim the Section 45Q tax credit based on the net amount of qualified carbon oxide disposed of during that taxable year taking into account the leaked amount.

If the leaked amount exceeds the amount of qualified carbon oxide disposed of under the Injection Method for that year, then the taxpayer will have a recapture liability for that year. The proposed regulations require the recapture amounts to be calculated on a last-in, first-out basis, such that excess leaked amount will be deemed attributable first to the immediate preceding taxable year, then the second preceding year up to a maximum of five years. The recapture amount will equal the metric tons of leaked qualified carbon oxide multiplied by the statutory credit rate as the original Section 45Q credits were originally calculated. A taxpayer must report the recapture amounts on IRS Form 8933 filed with the taxpayer's tax return for that year.

The proposed regulations contain limited exceptions for recapture if the recapture event is triggered from actions not related to the selection, operation or maintenance of the storage facility, such as volcanic activity or a terrorist attack.

## **Conclusion**

Notwithstanding the expansion of Section 45Q by the BBA, the lack of

guidance up to now has impeded investors from investing in carbon capture projects. The proposed regulations (along with Notice 2020-12 and Rev. Proc. 2020-12) provide welcome guidance to a number of issues associated claiming Section 45Q tax credits.

This is meant to be a general summary and not a comprehensive analysis of every aspect of the proposed Section 45Q regulations.

For more information, please contact the Barnes & Thornburg attorney with whom you work, or Bill Ewing at 404-264-4050 or [william.ewing@btlaw.com](mailto:william.ewing@btlaw.com).

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